Remediation Verification Report Removal Action at Former Drum Crushing Area

FORMER NAS BARBERS POINT, OAHU, HAWAII

November 2008

Department of the Navy
Commanding Officer
Naval Facilities Engineering Command, Hawaii
Pearl Harbor, HI 96860-3139

Fixed Price Remedial Action Contract
Contract Number N62742-02-D-1800, CTO 0001

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Fixed Price Remedial Action Contract
Contract Number N62742-02-D-1800, CTO 0001

Remediation Verification Report

REMOVAL ACTION AT FORMER DRUM CRUSHING AREA FORMER NAS BARBERS POINT, OAHU, HAWAII

November 2008

I hereby certify that the enclosed Remediation Verification Report, shown and marked in this submittal, is that proposed to be incorporated with Contract Number N62742-02-D-1800, Contract Task Order 0001, "*Removal Action at Former Drum Crushing Area, Former NAS Barbers Point, Oahu, Hawaii.*" This Remediation Verification Report is in compliance with contract specifications, OSHA requirements, and the U.S. Army Corps of Engineers Safety and Health Manual (EM 385-1-1, Nov 03); and is submitted for Government review.

Prepared By:

_____

Quality Control Manager **Date**

Reviewed By:

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Project Manager **Date**

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ACRONYMS AND ABBREVIATIONS

4,4'-DDD	Dichlorodiphenyldichloroethane
4,4'-DDE	Dichlorodiphenyldichloroethylene
4,4'-DDT	Dichlorodiphenyltrichloroethane
ACM	asbestos containing material
bgs	below ground surface
BRAC	Base Realignment and Closure
BTF	Bio Treatment Facility
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
COC	Chemical of concern
CTO	Contract Task Order
DCA	Drum Crushing Area
EAL	Environmental Action Level
EZ	exclusion zone
ft	feet
FRAC	Fixed-price Remedial Action Contract
HDOH	Hawaii Department of Health
HS/QC	Health and Safety/Quality Control
IDW	investigative derived waste
mg/kg	milligrams per kilogram
NA	not analyzed
N/A	not available
NAS	Naval Air Station
NAVFAC	Naval Facilities Engineering Command
ND	not detected
OCP	organochlorine pesticides
OSHA	Occupational Safety and Health Administration
OSWER	Office of Solid Waste and Emergency Response
PARCC	Precision, Accuracy, Representitiveness, Comparability, Completeness
PCB	Polychlorinated Biphenyls
PCS	Pacific Commercial Services, LLC.
PPE	Personal Protective Equipment
PQCP	Project Quality Control Plan
PRG	Preliminary Remediation Goal
PVC	polyvinyl chloride
QC	quality control
RA	Removal Action
RCRA	Resource, Conservation, and Recovery Act
RVR	Remedial Verification Report
SHSP	Site Health and Safety Plan
SOP	standard operating procedure
SWP	Site Work Plan
SZ	support zone
TAA	TestAmerica Analytical Testing Corporation
TCLP	toxicity characteristic leaching procedure
USACE	U.S. Army Corps of Engineers

ACRONYMS AND ABBREVIATIONS

USEPA	United States Environmental Protection Agency

EXECUTIVE SUMMARY

A Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) removal action was performed at the former Drum Crushing Area, Former NAS Barbers Point, Oahu, Hawaii, under FRAC Contract N62742-02-D-1800, CTO 0001. The purpose of the removal action was to excavate and dispose of soil impacted with the organochlorine pesticides (OCPs) and arsenic. The project cleanup goals for the OCPs and arsenic represent the United States Environmental Protection Agency Region IX Residential Preliminary Remediation Goals (PRGs) for 2004 (USEPA, 2004).

The removal action, including a pre-excavation delineation assessment, was conducted from July 2007 through April 2008. During the delineation assessment, surface and subsurface samples were collected to delineate the lateral and vertical extent of contamination with respect to residential cleanup criteria. Analytical results from this delineation assessment, along with data from four previous site investigations, were used to design the final excavation limits.

Vegetation within the footprint of the excavation area was cleared to facilitate pre-excavation land survey and excavation. Larger trees and shrubs were cut at their base and recycled onsite with other green waste. The tree and shrub stumps along with their root masses were considered contaminated, and were later excavated and packaged with the impacted soil. The pre-excavation survey was performed by a licensed land surveyor, to re-establish key sampling points from previous investigations, to establish new delineation sampling points, and to document pre-excavation topographic contours. At the conclusion of excavation activities, a post-excavation survey was conducted to record changes in the topographic contour at the Site and to ensure that all of the impacted soil had been excavated and removed.

Soil within the footprint of the site was divided into three groups for waste characterization purposes. Group 1 soil was excavated from 0-4 feet bgs at the center of the site, was profiled using historical data, and thus was excavated and packaged directly into one cubic yard bulk sacks. Group 2 soil was excavated from 4-6 and 4-10 feet bgs at the center of the site, and was stockpiled and sampled for waste characterization prior to packaging in bulk sacks. Group 3 soil was excavated from 0-2 feet bgs around the perimeter of the site, was stockpiled separately, and was sampled for waste characterization prior to being packaged in bulk sacks. A total of 117 bulk sacks were excavated and packaged from Group 1, 63 from Group 2 and 123 from Group 3, totaling 303 bulk packages excavated and packaged. The packaged soils were staged onsite and covered with poly sheeting.

While awaiting final approval on a provisional USEPA identification number, the packaging material began to deteriorate in the sunlight, and concerns about the maximum rated capacity of each bulk sack were identified. Consequently, contractor personnel inspected all bulk packages of soil and repackaged and/or reweighed prior to loading into 40-foot shipping containers. The exercise resulted in an increase in the total number of bulk packages. A total of 323 bulk packages of soil were manifested and loaded into 16, 40-foot shipping containers, for disposal on the U.S. Mainland. Soil removed from the Site was characterized and disposed of at a Resource, Conservation, and Recovery Act (RCRA) and CERCLA-approved landfill. In total, 383 tons of RCRA Hazardous Waste was disposed of at the certified landfill.

In addition to the soil excavated and removed from the Site, other wastes generated during remediation activities, included suspect asbestos containing Transite® panels, personal protective equipment and sampling equipment, and miscellaneous municipal wastes. These were classified as non-CERCLA wastes, and were disposed at on-island Subtitle D landfills.

In preparation of this RVR, data verification was performed for previously collected data at the former DCA. During this review, a discrepancy was discovered for the 2-foot sample (004TR1469) collected at sampling location DCA-12 in 2002. The results initially reported for 004TR1469 indicated that all of the OCPs were below site specific cleanup goals; however, verification of these results using Navy archived

analytical data determined that both OCP and arsenic levels in 004TR1469 actually exceeded cleanup goals. Although the cleanup of the former DCA in the immediate area of sample DCA-12 was based on the initial results reported for 004TR1469 (that did not exceed the cleanup goals), this situation is not a concern for the following reasons:

- The vertical delineation of OCP and arsenic at DCA-12 is provided by the soil samples collected at depths of 4 and 6 feet bgs at this location, in which OCPs were not detected and arsenic was reported below its cleanup goal.
- Soil located immediately adjacent to the south, west, and north of DCA-12 was excavated to a minimum of 4 feet bgs (Figure 2-3)
- The horizontal delineation of DCA-12 to the east is provided by two sample locations, DCA-23 located 10 feet southwest and DCA-18 located approximately 6 feet northeast. Although surface soil sample results at these locations did not exceed cleanup levels for OCPs and arsenic, the area from DCA-12 to immediately adjacent to these sample locations was excavated to a depth 2 feet bgs (Figure 2-3). Collection of soil samples below 2 feet at DCA-23 and DCA-18 was unnecessary due to the surficial nature of the contamination at this site.

At sample location DCA-09, arsenic was reported at 21.8 mg/kg in the surface soil sample. This result is below the site cleanup goal, but exceeds the HDOH Environmental Action Level (EAL) for sites over non-drinking aquifers, where surface water is greater than 150 meters away. However, since the result is only slightly over the EAL, and this situation only occurs at one location on the site, HDOH has concurred that the extent of site cleanup, with respect to arsenic, was appropriate (pers. comm., 2008).

With the exception of sample location DCA-12 at 2-feet bgs, field observations and laboratory analytical data indicate that all soil impacted above the project cleanup criteria for OCP and arsenic have been removed from the Site. Residual levels of COC remaining at the Site are below the project cleanup goals. No further action is recommended, and the Site may be considered for unrestricted use.

1. INTRODUCTION

This Remediation Verification Report (RVR) documents a Removal Action (RA) performed at the Former Drum Crushing Area (DCA), hereinafter referred to as the "Site," former Naval Air Station (NAS) Barbers Point, Oahu, Hawaii. This RA was performed under Naval Facilities Engineering Command (NAVFAC) Pacific, Fixed-Price Remedial Action Contract (FRAC) No. N62742-02-D-1800, Contract Task Order (CTO) 0001. This RA was performed in accordance with the Amendment to the Action Memorandum Addendum for Excavation and Disposal of Contaminated Media from the Former Drum Crushing Area, Former Naval Air Station, Barbers Point, Oahu, Hawaii (NAVFAC Pacific 2005); the Final Design Documents, Thermal Desorption Treatment of PCB-Contaminated Soil, Former Naval Air Station Barbers Point, Oahu, Hawaii (NAVFAC Pacific2003a); and the Revised Site Work Plan (SWP) Addendum, Removal Action at Former Drum Crushing Area, Former Naval Air Station Barbers Point, Oahu, Hawaii (NAVFAC Hawaii 2007b).

Note that this RA was performed separate from, and in addition to another RA performed under the same CTO. The other RA involved excavation and thermal treatment of primarily Polychlorinated Biphenyl (PCB)-Contaminated Soil, and may be referenced in the Remediation Verification Report, Thermal Desorption Treatment of PCB Contaminated Soil, Various Navy Transformer Sites, Oahu, Hawaii (NAVFAC 2007a).

The purpose of the RA at the DCA was to excavate, package, transport and dispose of in-situ soil contaminated with alpha-chlordane, gamma-chlordane, heptachlor epoxide, Dichlorodiphenyldichloroethane (4,4'-DDD), Dichlorodiphenyldichloroethylene (4,4'-DDE), Dichlorodiphenyltrichloroethane (4,4'-DDT), and arsenic. This project was performed in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and all applicable federal and local laws, regulations and polices.

This RVR summarizes the pre-construction activities, site preparation, excavation and packaging, and waste management activities conducted at the Site; discusses the Site assessment results, and provides conclusions and recommendations with respect to Site closure. Any deviations from the SWP Addendum (NAVFAC Hawaii 2007b) are also documented herein. Fieldwork in support of this project was performed from July 2007 through April 2008.

1.1 SITE LOCATION AND HISTORY

The Site is located within the former NAS Barbers Point which is situated on 3,723 acres along the southern coastal plain of Oahu **(Figure 1-1)**. Former NAS Barbers Point is bordered by Campbell Industrial Park to the west, the City of Kapolei to the north, Ewa Beach residential communities to the east and the Pacific Ocean to the south. It was designated for closure in 1993 by the Base Realignment and Closure (BRAC) Act and was officially closed on July 2, 1999. It had previously been the site of Navy airfield operations since World War II and purpose was to maintain and operate facilities and to provide services and materials to support operations in support of Navy aviation operations.

The Site is the remnants of a drum crushing facility, and is located along the western border of the former NAS Barbers Point and just west of the main airfield **(Figure 1-2)**. It consists of an area of approximately 2,046 square feet equating to 0.047 acres. It is thought to be an area used for rinsing and crushing of drums formerly containing pesticides; however, no information was available regarding specific activities conducted, the number of drums crushed, the quantities of waste materials generated or the number of years of operation.

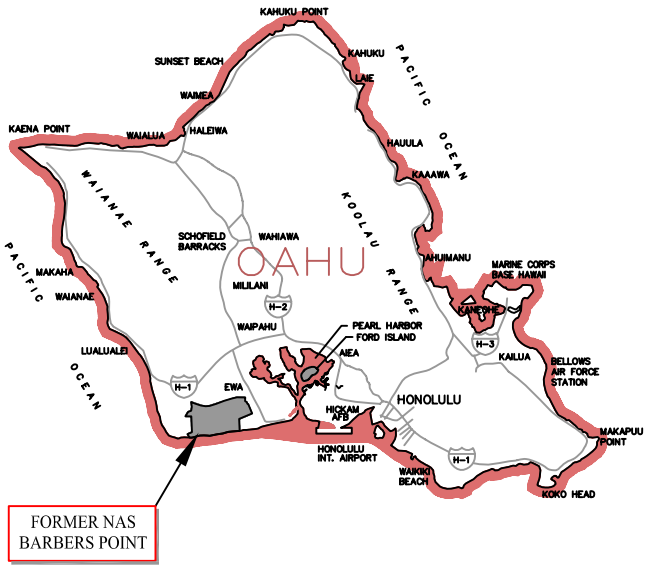
Several site investigations were conducted to identify the chemicals of concern (COC) prior to execution of the RA. Hazardous substances that could pose an imminent threat to human health and the environment identified during the investigations included alpha-chlordane, gamma-chlordane, heptachlor epoxide, 4,4'-DDD, 4,4'-DDE, 4,4'-DDT, and arsenic. Additional delineation soil sampling was performed in conjunction with this RA to gather and interpret analytical data with respect to residential cleanup criteria, as opposed to the industrial cleanup criteria that comprised the cleanup goals of previous investigations. Previous investigations are further described in the next section.

1.2 PREVIOUS FIELD INVESTIGATIONS

Between December 1994 and April 2005, four soil sampling events were conducted at the Site. In December 1994, the Navy collected 12 surface and shallow boring soil samples from eight locations at the DCA as part of the Remedial Investigation Report for BRAC-Related Activities, Sanitary Landfill, Naval Air Station Barbers Point, Oahu Hawaii (PACDIV 1999). In February 2002, the Navy collected 66 surface and shallow boring samples from 20 locations at the Site. In September 2003, two sample locations which contained the highest concentrations of pesticides were re-sampled and analyzed for dioxins. In April 2005, three additional surface soil samples were collected for the purpose of delineation and analyzed for the COC**.** Analytical results from the four sampling events are summarized in **Table 1-1** and sample locations are depicted in **Figure 1-3.**

Analytical data gathered during the previous site investigations were initially compared to industrial cleanup criteria, lending to restricted land uses for future development. In order to mitigate the potential for land use controls, the Navy executed additional surface and subsurface soil sampling in conjunction with this RA, to determine the lateral and vertical extent of contamination with respect to residential cleanup criteria. This process is detailed in subsequent sections of this report. Note that historical data summarized in Table 1-1 in bold font indicate the analytical data exceeded residential cleanup criteria, not industrial cleanup criteria as initially presented during previous investigations.

Additionally, during the preparation of this RVR, data verification was performed for previously collected data at the former DCA. During this review, a discrepancy was discovered for the 2-foot sample (004TR1469) collected at sampling location DCA-12 in 2002. The results initially reported for 004TR1469 indicated that all OCP levels were below site specific cleanup goals; however, verification of these results using Navy archived analytical data determined that OCP levels in 004TR1469 actually exceeded cleanup goals.



FORMER DRUM CRUSHING AREA

N

DEPARTMENT OF THE NAVY — NAVAL FACILITIES ENGINEERING COMMAND

NAVFAC HAWAII

PEARL HARBOR, HI

REMOVAL ACTION AT FORMER
DRUM CRUSHING AREA
FORMER NAVAL AIR STATION BARBERS POINT
OAHU, HAWAII

FIGURE 1-1, REGIONAL LOCATION MAP

NAVFAC HAWAII CONTRACT #: N62742-02-D-1800

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SCALE: AS NOTED | FILENAME: FIG 1-1 REV 7 14 08.DWG | SHEET: 1 OF 1

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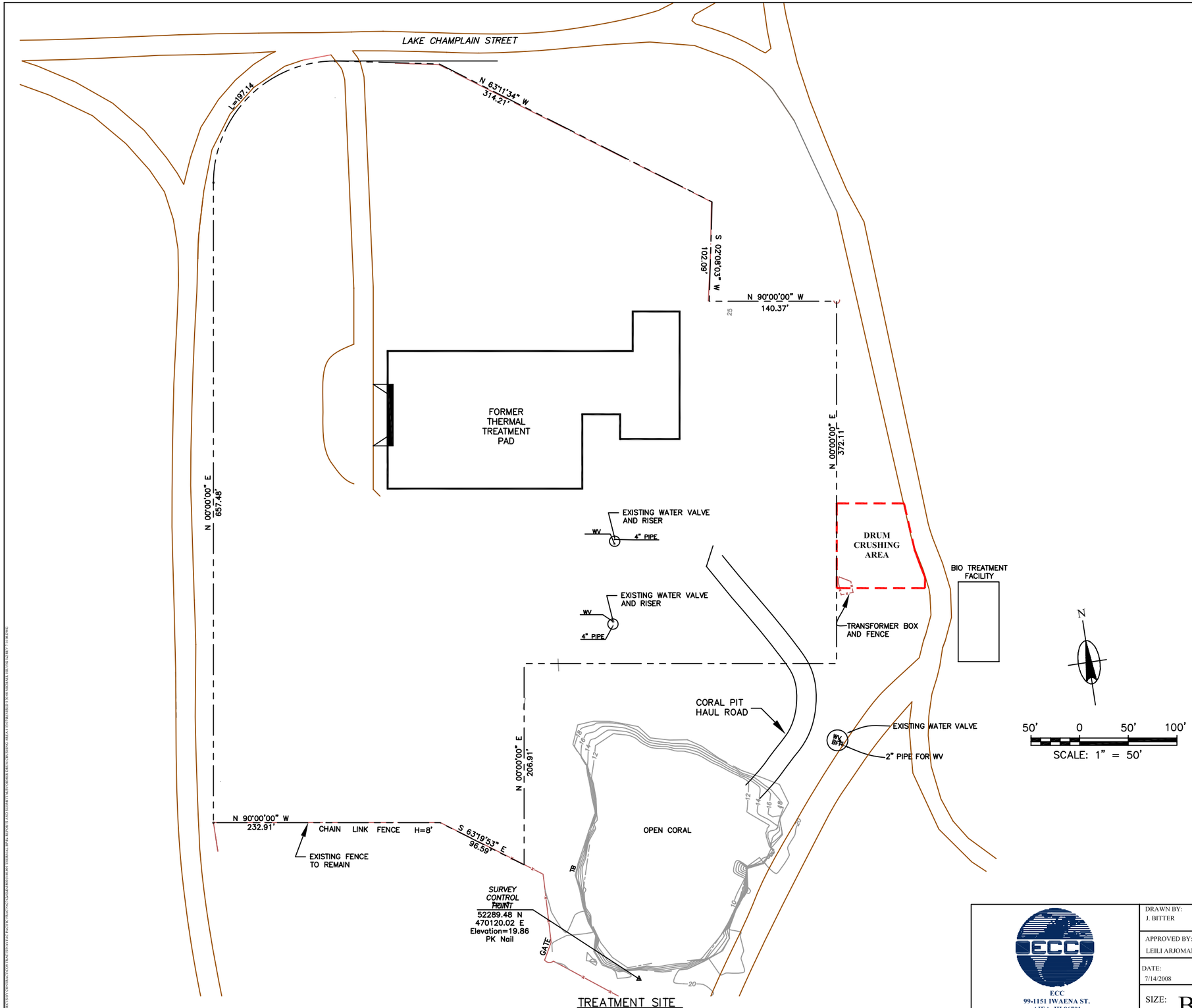

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DEPARTMENT OF THE NAVY — NAVAL FACILITIES ENGINEERING COMMAND

NAVFAC HAWAII
PEARL HARBOR, HI

REMOVAL ACTION AT FORMER
DRUM CRUSHING AREA
FORMER NAVAL AIR STATION BARBERS POINT
OAHU, HAWAII

FIGURE 1-2, SITE VICINITY MAP

NAVFAC HAWAII CONTRACT #: N62742-02-D-1800

SCALE: AS NOTED | FILENAME: FIG 1-2 REV 7 14 08.DWG | SHEET: 1 OF 1

Table 1-1: Analytical Results for Previous Field Investigations (December 1994 to April 2005)

USEPA SAMPLE ID	FIELD SAMPLE ID	DEPTH (ft bgs)	DATE SAMPLED	Analytical Detections (mg/kg)
SB016	**SS-07**	**0**	**12/20/1994**	α-Chlordane 0.12 γ-Chlordane 0.13 4, 4'-DDD 0.37 **4, 4'-DDE 2.2** 4, 4'-DDT 1.3 Arsenic 3.3
SB017	SS-07	2	12/20/1994	α-Chlordane ND γ-Chlordane ND 4, 4'-DDD ND 4, 4'-DDE 0.26 4, 4'-DDT 0.28 Arsenic 1.1
SB018	**SS-08**	**0**	**12/20/1994**	α-Chlordane ND γ-Chlordane ND 4, 4'-DDD ND **4, 4'-DDE 17** **4, 4'-DDT 16** Arsenic 4.5
SB019	**SS-08**	**2**	**12/20/1994**	α-Chlordane ND γ-Chlordane ND 4, 4'-DDD ND **4, 4'-DDE 38** **4, 4'-DDT 99** Arsenic 4.2
SB020	**SS-09**	**0**	**12/20/1994**	**α-Chlordane 5.4** **γ-Chlordane 6.9** **4, 4'-DDD 71** **4, 4'-DDE 77** **4, 4'-DDT 18** **Arsenic 50.4**
SB021	**SS-09**	**2**	**12/20/1994**	**α-Chlordane 2.6** **γ-Chlordane 3.3** **4, 4'-DDD 130** **4, 4'-DDE 60** **4, 4'-DDT 1.8** **Arsenic 40.1**
SB022	**SS-09D**	**2**	**12/20/1994**	**α-Chlordane 2.3** **γ-Chlordane 2.7** **4, 4'-DDD 130** **4, 4'-DDE 53** 4, 4'-DDT ND **Arsenic 36.1**
SB026	**SS-11**	**0**	**12/20/1994**	α-Chlordane ND γ-Chlordane ND **4, 4'-DDD 150** **4, 4'-DDE 67** **4, 4'-DDT 10** Arsenic 11.4

USEPA SAMPLE ID	FIELD SAMPLE ID	DEPTH (ft bgs)	DATE SAMPLED	Analytical Detections (mg/kg)
SB027	**SS-11**	**2**	**12/20/1994**	α-Chlordane ND γ-Chlordane ND **4, 4'-DDD 130** **4, 4'-DDE 58** **4, 4'-DDT 2.7** Arsenic 3.6
SB028	**SS-12**	**0**	**12/20/1994**	α-Chlordane 0.17 γ-Chlordane 0.15 4, 4'-DDD 0.23 **4, 4'-DDE 2.5** 4, 4'-DDT 1.1 Arsenic 3.1
SB029	**SS-12**	**2**	**12/20/1994**	α-Chlordane 1.4 γ-Chlordane 1.2 **4, 4'-DDD 2.4** **4, 4'-DDE 8.6** **4, 4'-DDT 5.2** Arsenic 5.4
SB030	**SS-13**	**0**	**12/20/1994**	α-Chlordane 0.14 γ-Chlordane 0.13 4, 4'-DDD ND **4, 4'-DDE 3.9** 4, 4'-DDT 1.5 Arsenic 2.5
SB031	**SS-13**	**2**	**12/20/1994**	α-Chlordane 0.27 γ-Chlordane 0.31 4, 4'-DDD ND 4, 4'-DDE ND **4, 4'-DDT 4.4** Arsenic 4.9
TR1425	**DCA-01**	**0**	**2/1/2002**	heptachlor epoxide 0.0079 UJ α-Chlordane 0.089 J γ-Chlordane 0.098 J 4, 4'-DDD 0.16 J **4, 4'-DDE 9.6 J** **4, 4'-DDT 3.9 J** Arsenic 10.6
TR1426	DCA-01	2	2/1/2002	heptachlor epoxide 0.0067 UJ α-Chlordane 0.0067 UJ γ-Chlordane 0.0067 UJ 4, 4'-DDD 0.014 UJ 4, 4'-DDE 0.62 J 4, 4'-DDT 0.27 J Arsenic 2.1
TR1427	**DCA-02**	**0**	**2/1/2002**	**heptachlor epoxide 0.074 U** α-Chlordane 0.42 D γ-Chlordane 0.44 D 4, 4'-DDD 1.8 D **4, 4'-DDE 38 D** **4, 4'-DDT 54 D** Arsenic 2.6

USEPA SAMPLE ID	FIELD SAMPLE ID	DEPTH (ft bgs)	DATE SAMPLED	Analytical Detections (mg/kg)
TR1428	DCA-02	2	2/1/2002	heptachlor epoxide 0.0036 UJ α-Chlordane 0.0036 UJ γ-Chlordane 0.0036 UJ 4, 4'-DDD 0.072 UJ 4, 4'-DDE 0.4 J 4, 4'-DDT 0.6 J Arsenic 0.82
TR1429	DCA-02	4	2/1/2002	heptachlor epoxide 0.0074 UJ α-Chlordane 0.0074 UJ γ-Chlordane 0.0074 UJ 4, 4'-DDD 0.015 UJ 4, 4'-DDE 0.015 UJ 4, 4'-DDT 0.015 UJ Arsenic 0.46
TR1430	DCA-02	4.5	2/1/2002	heptachlor epoxide 0.007 UJ α-Chlordane 0.007 UJ γ-Chlordane 0.007 UJ 4, 4'-DDD 0.014 UJ 4, 4'-DDE 0.014 UJ 4, 4'-DDT 0.014 UJ Arsenic 0.61
TR1431	**DCA-03**	**0**	**2/1/2002**	**heptachlor epoxide 0.28 D** **α-Chlordane 3.6 J** **γ-Chlordane 3.3 J** 4, 4'-DDD 2 D **4, 4'-DDE 60** **4, 4'-DDT 25** Arsenic 8.8
TR1432	DCA-03	2	2/1/2002	heptachlor epoxide 0.0082 U α-Chlordane 0.0082 U γ-Chlordane 0.0082 U 4, 4'-DDD 0.016 U 4, 4'-DDE 0.021 4, 4'-DDT 0.018 Arsenic 2.5
TR1433	DCA-03	4	2/1/2002	heptachlor epoxide 0.0067 UJ α-Chlordane 0.0067 UJ γ-Chlordane 0.0067 UJ 4, 4'-DDD 0.014 UJ 4, 4'-DDE 0.014 UJ 4, 4'-DDT 0.014 UJ Arsenic 0.36
TR1434	DCA-03	5	2/1/2002	heptachlor epoxide 0.0067 UJ α-Chlordane 0.0067 UJ γ-Chlordane 0.0067 UJ 4, 4'-DDD 0.014 UJ 4, 4'-DDE 0.014 UJ 4, 4'-DDT 0.014 UJ Arsenic 0.64

USEPA SAMPLE ID	FIELD SAMPLE ID	DEPTH (ft bgs)	DATE SAMPLED	Analytical Detections (mg/kg)
TR1435	DCA-04	0	2/1/2002	heptachlor epoxide 0.0074 UJ α-Chlordane 0.0074 UJ γ-Chlordane 0.0074 UJ 4, 4'-DDD 0.015 UJ 4, 4'-DDE 0.083 J 4, 4'-DDT 0.044 J Arsenic 4.8
TR1436	DCA-04	2	2/1/2002	heptachlor epoxide 0.0081 UJ α-Chlordane 0.0081 UJ γ-Chlordane 0.0081 UJ 4, 4'-DDD 0.016 UJ 4, 4'-DDE 0.016 UJ 4, 4'-DDT 0.016 UJ Arsenic 4.4
TR1437	DCA-04	4	2/1/2002	heptachlor epoxide 0.0074 UJ α-Chlordane 0.0074 UJ γ-Chlordane 0.0074 UJ 4, 4'-DDD 0.015 UJ 4, 4'-DDE 0.015 UJ 4, 4'-DDT 0.015 UJ Arsenic 1.2
TR1438	DCA-04	6	2/1/2002	heptachlor epoxide 0.0072 UJ α-Chlordane 0.033 J γ-Chlordane 0.036 J 4, 4'-DDD 0.034 J 4, 4'-DDE 0.94 J 4, 4'-DDT 0.64 J Arsenic 1.1
TR1439	DCA-05	1	2/1/2002	heptachlor epoxide 0.0078 UJ α-Chlordane 0.0078 UJ γ-Chlordane 0.0078 UJ 4, 4'-DDD 0.016 UJ 4, 4'-DDE 0.95 J 4, 4'-DDT 0.48 J Arsenic 4.5
TR1440	DCA-05	2	2/1/2002	heptachlor epoxide 0.01 UJ α-Chlordane 0.01 UJ γ-Chlordane 0.01 UJ 4, 4'-DDD 0.02 UJ 4, 4'-DDE 0.045 J 4, 4'-DDT 0.02 UJ Arsenic 7.4
TR1441	DCA-05	4	2/1/2002	heptachlor epoxide 0.0068 UJ α-Chlordane 0.0068 UJ γ-Chlordane 0.0068 UJ 4, 4'-DDD 0.014 UJ 4, 4'-DDE 0.014 UJ 4, 4'-DDT 0.014 UJ Arsenic 1

USEPA SAMPLE ID	FIELD SAMPLE ID	DEPTH (ft bgs)	DATE SAMPLED	Analytical Detections (mg/kg)
TR1442	DCA-05	6	2/1/2002	heptachlor epoxide 0.007 UJ α-Chlordane 0.007 UJ γ-Chlordane 0.007 UJ 4, 4'-DDD 0.014 UJ 4, 4'-DDE 0.014 UJ 4, 4'-DDT 0.014 UJ Arsenic 0.63
TR1443	**DCA-06**	**0**	**2/1/2002**	heptachlor epoxide 0.0085 UJ α-Chlordane 0.0085 UJ γ-Chlordane 0.0085 UJ 4, 4'-DDD 0.017 UJ **4, 4'-DDE 2.8 J** 4, 4'-DDT 0.26 J Arsenic 4.3
TR1444	DCA-06	2	2/1/2002	heptachlor epoxide 0.0078 UJ α-Chlordane 0.0078 UJ γ-Chlordane 0.0078 UJ 4, 4'-DDD 0.016 UJ 4, 4'-DDE 0.016 UJ 4, 4'-DDT 0.016 UJ Arsenic 2.7
TR1445	DCA-06	2.5	2/1/2002	heptachlor epoxide 0.0076 UJ α-Chlordane 0.0076 UJ γ-Chlordane 0.0076 UJ 4, 4'-DDD 0.015 UJ 4, 4'-DDE 0.043 J 4, 4'-DDT 0.015 UJ Arsenic 0.58
TR1446	DCA-06	4	2/1/2002	heptachlor epoxide 0.0076 UJ α-Chlordane 0.0076 UJ γ-Chlordane 0.0076 UJ 4, 4'-DDD 0.015 UJ 4, 4'-DDE 0.048 J 4, 4'-DDT 0.015 UJ Arsenic 0.85
TR1447	DCA-06	5.5	2/1/2002	heptachlor epoxide 0.0071 UJ α-Chlordane 0.0071 UJ γ-Chlordane 0.0071 UJ 4, 4'-DDD 0.014 UJ 4, 4'-DDE 0.014 UJ 4, 4'-DDT 0.014 UJ Arsenic 0.67
TR1448	**DCA-07**	**2**	**2/1/2002**	**heptachlor epoxide 0.087 U** α-Chlordane 0.087 U **γ-Chlordane 1.8 JN** **4, 4'-DDD 12 J** **4, 4'-DDE 81 J** 4, 4'-DDT 0.18 U Arsenic 0.92

USEPA SAMPLE ID	FIELD SAMPLE ID	DEPTH (ft bgs)	DATE SAMPLED	Analytical Detections (mg/kg)
TR1449	DCA-07	4	2/1/2002	heptachlor epoxide 0.0072 UJ α-Chlordane 0.0072 UJ γ-Chlordane 0.0072 UJ 4, 4'-DDD 0.4 J 4, 4'-DDE 1.1 J 4, 4'-DDT 0.18 J Arsenic 0.91
TR1450	DCA-07	6	2/1/2002	heptachlor epoxide 0.007 UJ α-Chlordane 0.007 UJ γ-Chlordane 0.007 UJ 4, 4'-DDD 0.014 UJ 4, 4'-DDE 0.014 UJ 4, 4'-DDT 0.014 UJ Arsenic 0.38 U
TR1451	**DCA-08**	**2**	**2/1/2002**	**heptachlor epoxide 0.086 U** α-Chlordane 0.95 N **γ-Chlordane 14 JN** **4, 4'-DDD 1200 J** **4, 4'-DDE 140 J** **4, 4'-DDT 24 JN** Arsenic 2.1
TR1452	DCA-08	4	2/1/2002	heptachlor epoxide 0.0071 UJ α-Chlordane 0.0071 UJ γ-Chlordane 0.0071 UJ 4, 4'-DDD 0.76 J 4, 4'-DDE 0.54 J 4, 4'-DDT 0.34 J Arsenic 0.87
TR1453	DCA-08	6	2/1/2002	heptachlor epoxide 0.0068 UJ α-Chlordane 0.0068 UJ γ-Chlordane 0.0068 UJ 4, 4'-DDD 0.014 UJ 4, 4'-DDE 0.014 UJ 4, 4'-DDT 0.014 UJ Arsenic 0.33 U
TR1454	**DCA-09**	**0**	**2/1/2002**	**heptachlor epoxide 0.076 U** α-Chlordane 0.52 D **γ-Chlordane 2.5 N** **4, 4'-DDD 230 J** **4, 4'-DDE 90 J** **4, 4'-DDT 2.3 D** Arsenic 21.8
TR1455	**DCA-09**	**2**	**2/1/2002**	**heptachlor epoxide 0.087 U** α-Chlordane 0.39 N **γ-Chlordane 3.4 JN** **4, 4'-DDD 35 J** **4, 4'-DDE 55 J** 4, 4'-DDT 0.18 U Arsenic 2.9

USEPA SAMPLE ID	FIELD SAMPLE ID	DEPTH (ft bgs)	DATE SAMPLED	Analytical Detections (mg/kg)
TR1456	DCA- 09	4	2/1/2002	heptachlor epoxide 0.0068 UJ α-Chlordane 0.0068 UJ γ-Chlordane 0.0068 UJ 4, 4'-DDD 0.11 J 4, 4'-DDE 0.14 J 4, 4'-DDT 0.014 UJ Arsenic 0.65
TR1457	DCA- 09	6	2/1/2002	heptachlor epoxide 0.0069 UJ α-Chlordane 0.0069 UJ γ-Chlordane 0.0069 UJ 4, 4'-DDD 0.014 UJ 4, 4'-DDE 0.014 UJ 4, 4'-DDT 0.014 UJ Arsenic 0.47
TR1458	**DCA- 10**	**2**	**2/1/2002**	**heptachlor epoxide 0.15 D** **α-Chlordane 1.6 J** **γ-Chlordane 3.8 JN** **4, 4'-DDD 140 J** **4, 4'-DDE 100 J** **4, 4'-DDT 51 J** **Arsenic 38.9**
TR1460	**DCA-10**	**4**	**2/1/2002**	heptachlor epoxide 0.0076 UJ α-Chlordane 0.0076 UJ γ-Chlordane 0.037 J **4, 4'-DDD 3.9 J** **4, 4'-DDE 1.9 J** **4, 4'-DDT 20 J** Arsenic 1
TR1461	**DCA-10D**	**4**	**2/1/2002**	heptachlor epoxide 0.007 UJ α-Chlordane 0.007 UJ γ-Chlordane 0.007 UJ 4, 4'-DDD 0.42 J 4, 4'-DDE 0.69 J **4, 4'-DDT 6.2 J** Arsenic 0.8
TR1462	DCA-10	6	2/1/2002	heptachlor epoxide 0.0072 UJ α-Chlordane 0.0072 UJ γ-Chlordane 0.0072 UJ 4, 4'-DDD 0.015 UJ 4, 4'-DDE 0.015 UJ 4, 4'-DDT 0.015 UJ Arsenic 0.51
TR1464	**DCA-11**	**0**	**2/4/2002**	**heptachlor epoxide 0.054 NJ** α-Chlordane 0.27 J γ-Chlordane 0.46 J 4, 4'-DDD 1.5 J **4, 4'-DDE 16 J** **4, 4'-DDT 8.1 J** Arsenic 14.2

USEPA SAMPLE ID	FIELD SAMPLE ID	DEPTH (ft bgs)	DATE SAMPLED	Analytical Detections (mg/kg)
TR1465	**DCA-11**	**4**	**2/4/2002**	heptachlor epoxide 0.0071 UJ α-Chlordane 0.094 J γ-Chlordane 0.11 NJ **4, 4'-DDD 8.4 J** **4, 4'-DDE 4.4 J** **4, 4'-DDT 6.8 J** **Arsenic 34.3**
TR1466	**DCA-11**	**6**	**2/4/2002**	heptachlor epoxide 0.007 UJ α-Chlordane 0.007 UJ γ-Chlordane 0.007 UJ 4, 4'-DDD 0.041 J 4, 4'-DDE 0.023 J 4, 4'-DDT 0.03 J **Arsenic 42.7 J**
TR1467	DCA-11	2	2/4/2002	heptachlor epoxide 0.0075 U α-Chlordane 0.0075 U γ-Chlordane 0.016 4, 4'-DDD 0.12 4, 4'-DDE 1.1 D 4, 4'-DDT 0.22 **Arsenic 71.9**
TR1468	**DCA-12**	**0**	**2/4/2002**	**heptachlor epoxide 0.9 N** **α-Chlordane 540 J** **γ-Chlordane 930 NJ** **4, 4'-DDD 560 NJ** **4, 4'-DDE 1200 J** **4, 4'-DDT 6000 J** **Arsenic 202**
TR1469	**DCA-12**	**2**	**2/4/2002**	**heptachlor epoxide 0.2** α-Chlordane 0.59 D γ-Chlordane 0.86 4, 4'-DDD 0.87 D **4, 4'-DDE 6.1 J** **4, 4'-DDT 11 J** **Arsenic 251**
TR1470	DCA-12	4	2/4/2002	heptachlor epoxide 0.0069 UJ α-Chlordane 0.0069 UJ γ-Chlordane 0.0069 UJ 4, 4'-DDD 0.014 UJ 4, 4'-DDE 0.1 J 4, 4'-DDT 0.063 J Arsenic 0.8
TR1471	DCA-12	6	2/4/2002	heptachlor epoxide 0.0068 UJ α-Chlordane 0.0068 UJ γ-Chlordane 0.0068 UJ 4, 4'-DDD 0.014 UJ 4, 4'-DDE 0.014 UJ 4, 4'-DDT 0.059 J Arsenic 0.61

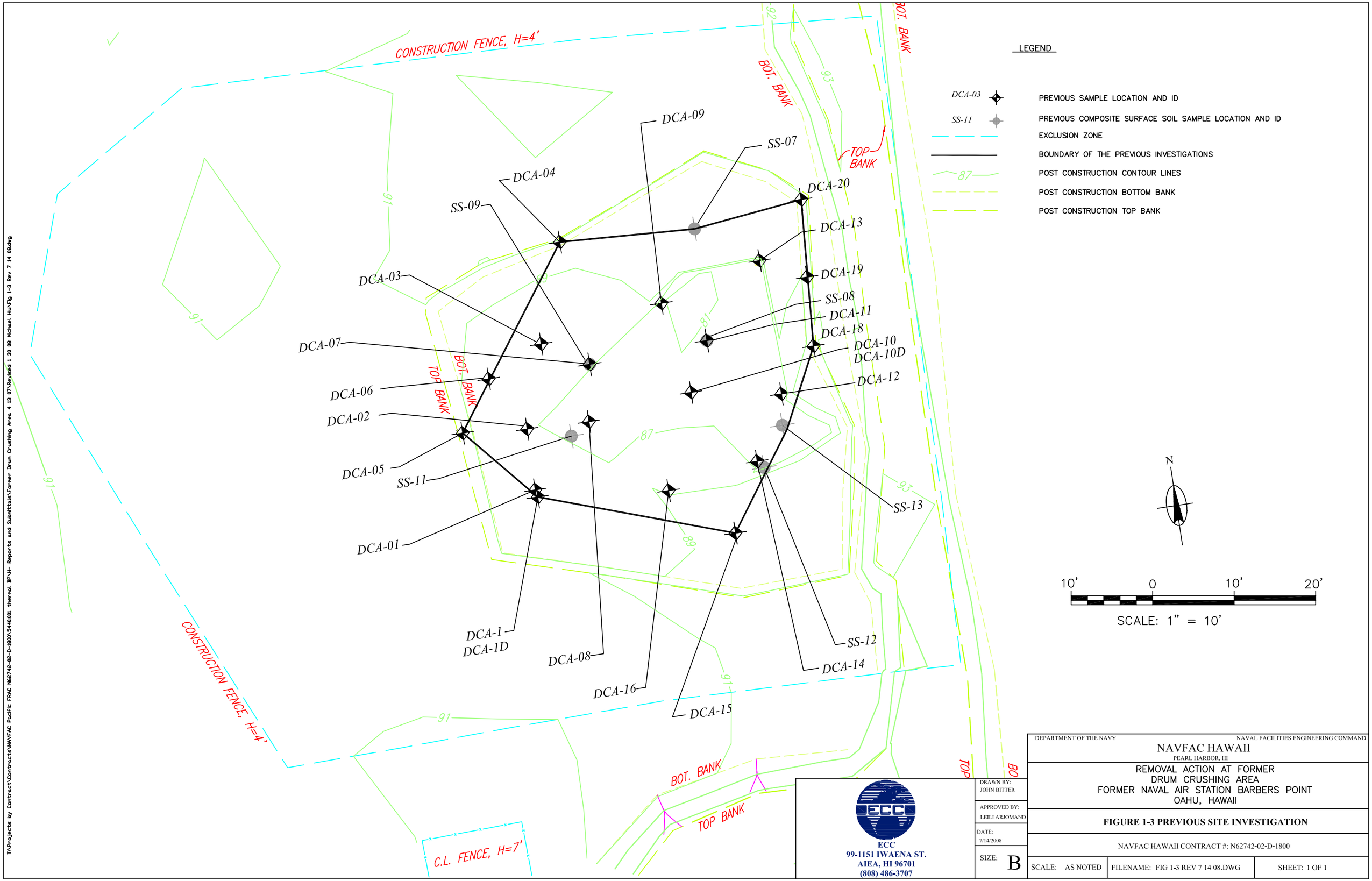
USEPA SAMPLE ID	FIELD SAMPLE ID	DEPTH (ft bgs)	DATE SAMPLED	Analytical Detections (mg/kg)
TR1472	**DCA-13**	**0**	**2/4/2002**	**heptachlor epoxide 0.078 U** α-Chlordane 0.7 NJ **γ-Chlordane 3.5 NJ** **4, 4'-DDD 4.2 J** **4, 4'-DDE 42 J** **4, 4'-DDT 15 J** Arsenic 6.5
TR1473	DCA-13	2	2/4/2002	heptachlor epoxide 0.0085 UJ α-Chlordane 0.0085 UJ γ-Chlordane 0.0085 UJ 4, 4'-DDD 0.017 UJ 4, 4'-DDE 0.032 J 4, 4'-DDT 0.07 J Arsenic 3 UJ
TR1474	DCA-13	4	2/4/2002	heptachlor epoxide 0.0071 UJ α-Chlordane 0.0071 UJ γ-Chlordane 0.0071 UJ 4, 4'-DDD 0.014 UJ 4, 4'-DDE 0.014 UJ 4, 4'-DDT 0.022 J Arsenic 3.3
TR1475	DCA-13	6	2/4/2002	heptachlor epoxide 0.007 UJ α-Chlordane 0.007 UJ γ-Chlordane 0.007 UJ 4, 4'-DDD 0.014 UJ 4, 4'-DDE 0.014 UJ 4, 4'-DDT 0.014 UJ Arsenic 0.59
TR1476	**DCA-14**	**0**	**2/4/2002**	**heptachlor epoxide 0.61 J** **α-Chlordane 51 J** **γ-Chlordane 62 J** 4, 4'-DDD 1.9 J **4, 4'-DDE 650 J** **4, 4'-DDT 3000 J** **Arsenic 42.1**
TR1477	**DCA-14**	**2**	**2/4/2002**	**heptachlor epoxide 0.23 D** α-Chlordane 1.4 D γ-Chlordane 1.4 D 4, 4'-DDD 2.3 D **4, 4'-DDE 10 D** **4, 4'-DDT 16 D** **Arsenic 29.1**
TR1478	**DCA-14**	**4**	**2/4/2002**	heptachlor epoxide 0.007 UJ α-Chlordane 0.075 J γ-Chlordane 0.087 J 4, 4'-DDD 0.2 J 4, 4'-DDE 1.2 **J** **4, 4'-DDT 2.1** Arsenic 1.9

USEPA SAMPLE ID	FIELD SAMPLE ID	DEPTH (ft bgs)	DATE SAMPLED	Analytical Detections (mg/kg)
TR1479	DCA-14	6	2/4/2002	heptachlor epoxide 0.0073 UJ α-Chlordane 0.0073 UJ γ-Chlordane 0.0073 UJ 4, 4'-DDD 0.015 UJ 4, 4'-DDE 0.05 J 4, 4'-DDT 0.053 J Arsenic 0.56
TR1480	**DCA-15**	**0**	**2/4/2002**	heptachlor epoxide 0.0075 UJ α-Chlordane 0.14 J γ-Chlordane 0.16 J 4, 4'-DDD 0.089 J **4, 4'-DDE 2.1 J** **4, 4'-DDT 1.7 J** Arsenic 4.2
TR1481	DCA-15	2	2/4/2002	heptachlor epoxide 0.0069 UJ α-Chlordane 0.0079 J γ-Chlordane 0.0086 J 4, 4'-DDD 0.015 J 4, 4'-DDE 0.1 J 4, 4'-DDT 0.25 J Arsenic 0.47
TR1482	DCA-15	4	2/4/2002	heptachlor epoxide 0.0082 UJ α-Chlordane 0.071 J γ-Chlordane 0.078 J 4, 4'-DDD 0.09 J 4, 4'-DDE 1 J 4, 4'-DDT 1.3 J Arsenic 2.5
TR1483	DCA-15	6	2/4/2002	heptachlor epoxide 0.0066 UJ α-Chlordane 0.0066 UJ γ-Chlordane 0.0066 UJ 4, 4'-DDD 0.013 UJ 4, 4'-DDE 0.013 UJ 4, 4'-DDT 0.013 UJ Arsenic 0.61
TR1485	**DCA-16**	**0**	**2/4/2002**	**heptachlor epoxide 2.1 JN** **α-Chlordane 76 D** **γ-Chlordane 74 D** **4, 4'-DDD 11 J** **4, 4'-DDE 370 D** **4, 4'-DDT 420 D** Arsenic 8.2
TR1486	**DCA-16**	**2**	**2/4/2002**	**heptachlor epoxide 0.14** **α-Chlordane 1.6 JN** **γ-Chlordane 2.9 J** **4, 4'-DDD 3.8 J** **4, 4'-DDE 300 J** **4, 4'-DDT 84 J** Arsenic 5.1

USEPA SAMPLE ID	FIELD SAMPLE ID	DEPTH (ft bgs)	DATE SAMPLED	Analytical Detections (mg/kg)
TR1487	DCA-16	4	2/4/2002	heptachlor epoxide 0.0066 UJ α-Chlordane 0.0066 UJ γ-Chlordane 0.0066 UJ 4, 4'-DDD 0.058 J 4, 4'-DDE 0.75 J 4, 4'-DDT 0.27 J Arsenic 0.77
TR1489	DCA-16	6	2/4/2002	heptachlor epoxide 0.0067 UJ α-Chlordane 0.0067 UJ γ-Chlordane 0.0067 UJ 4, 4'-DDD 0.013 UJ 4, 4'-DDE 0.025 J 4, 4'-DDT 0.013 UJ Arsenic 0.43
TR1490	**DCA-1**	**0**	**2/4/2002**	heptachlor epoxide 0.037 NJ α-Chlordane 0.42 J γ-Chlordane 0.42 J 4, 4'-DDD 0.59 J **4, 4'-DDE 32 J** **4, 4'-DDT 17 J** Arsenic 1.2 J
TR1491	**DCA-1D**	**0.5**	**2/4/2002**	heptachlor epoxide 0.02 J α-Chlordane 0.1 J γ-Chlordane 0.17 J 4, 4'-DDD 0.8 J **4, 4'-DDE 6.6 J** **4, 4'-DDT 3.4 J** Arsenic 0.79
TR1492	DCA-1	2	2/4/2002	heptachlor epoxide 0.0067 UJ α-Chlordane 0.042 J γ-Chlordane 0.05 J 4, 4'-DDD 0.13 J 4, 4'-DDE 0.87 J 4, 4'-DDT 0.63 J Arsenic 0.63
TR1493	DCA-1	4	2/4/2002	heptachlor epoxide 0.0067 UJ α-Chlordane 0.0067 UJ γ-Chlordane 0.0067 UJ 4, 4'-DDD 0.013 UJ 4, 4'-DDE 0.013 UJ 4, 4'-DDT 0.013 UJ Arsenic 0.2 U
TR1494	DCA-1	6	2/4/2002	heptachlor epoxide 0.0067 UJ α-Chlordane 0.0067 UJ γ-Chlordane 0.0067 UJ 4, 4'-DDD 0.014 UJ 4, 4'-DDE 0.014 UJ 4, 4'-DDT 0.014 UJ Arsenic 0.2 U

USEPA SAMPLE ID	FIELD SAMPLE ID	DEPTH (ft bgs)	DATE SAMPLED	Analytical Detections (mg/kg)
TR1921	DCA-18	0	4/12/2005	heptachlor epoxide 0.011 U α-Chlordane 0.046 γ-Chlordane 0.075 4, 4'-DDD 0.25 4, 4'-DDE 0.85 4, 4'-DDT 0.78 Arsenic 4
TR1922	DCA-19	0	4/12/2005	heptachlor epoxide 0.011 U α-Chlordane 0.011 U γ-Chlordane 0.011 U 4, 4'-DDD 0.022 U 4, 4'-DDE 0.028 4, 4'-DDT 0.021 J Arsenic 13.4
TR1923	DCA-20	0	4/12/2005	heptachlor epoxide 0.011 U α-Chlordane 0.011 U γ-Chlordane 0.011 U 4, 4'-DDD 0.022 U 4, 4'-DDE 0.04 4, 4'-DDT 0.043 Arsenic 10.3

Notes:
All results reported in milligrams per kilogram (mg/kg). All reported sample concentrations represent dry sample weight.
ID – Identification.
N/A – not available
ND – not detected at or above method detection limit.
NA – not analyzed.
ft bgs – feet below ground surface.
U – The analyte of interest was not detected to the limit of detection indicated.
J – The reported value was obtained from a reading that was less than the Contract Required Detection Limit but greater than or equal to the Instrument Detection Limit. If the analyte was analyzed for but not detected, a "U" shall be entered. (Inorganic Analyses).
Results in bold indicate concentrations exceed residential cleanup criteria.



T:\Projects by Contract\Contracts\NAVFAC Pacific FRAC N62742-02-D-1800\5440.001 thermal IRV\H- Reports and Submittals\Former Drum Crushing Area 4 13 07\Revised 1 30 08 Michael Hu\Fig 1-3 Rev 7 14 08.dwg

DEPARTMENT OF THE NAVY — NAVAL FACILITIES ENGINEERING COMMAND

NAVFAC HAWAII
PEARL HARBOR, HI

REMOVAL ACTION AT FORMER
DRUM CRUSHING AREA
FORMER NAVAL AIR STATION BARBERS POINT
OAHU, HAWAII

FIGURE 1-3 PREVIOUS SITE INVESTIGATION

NAVFAC HAWAII CONTRACT #: N62742-02-D-1800

ECC
99-1151 IWAENA ST.
AIEA, HI 96701
(808) 486-3707

DRAWN BY: JOHN BITTER
APPROVED BY: LEILI ARJOMAND
DATE: 7/14/2008
SIZE: B

SCALE: AS NOTED | FILENAME: FIG 1-3 REV 7 14 08.DWG | SHEET: 1 OF 1

1.3 SCOPE OF WORK

In an effort to clean up the Site and allow unrestricted land use upon completion of the RA, the Navy requested that an additional delineation assessment be conducted prior to commencement of excavation activities. The amended scope of work for the RA was to delineate the Site with respect to U.S Environmental Protection Agency (USEPA) Region IX Residential Preliminary Remediation Goals (PRGs) for organochlorine pesticides and for arsenic; excavate impacted soil above project cleanup criteria; characterize the soil to determine proper disposal classification; package and dispose of the impacted soil according to historical data and characterization data; and restore the Site to previous condition.

Specifically, the scope of work included:

- Pre-excavation delineation sampling;
- Pre-excavation surveying;
- Mobilization and site preparation;
- Vegetation clearing and reduction;
- Excavation and packaging of contaminated soil;
- Post-excavation surveying;
- Site restoration and demobilization;
- Off-island transport and disposal of packaged soils;
- Preparation of the RVR (this document).

Project cleanup goals are listed in **Table 1-2**.

Table 1-2: Project Cleanup Goals for Chemicals of Concern

Contaminant of Concern	Project Cleanup Goal (mg/kg)	Reference
Heptachlor Epoxide	0.053	2004 Region IX Residential PRG[1]
Alpha-chlordane	1.6	2004 Region IX Residential PRG[1]
Gamma-chlordane	1.6	2004 Region IX Residential PRG[1]
4, 4'-DDD	2.4	2004 Region IX Residential PRG[1]
4, 4'-DDE	1.7	2004 Region IX Residential PRG[1]
4, 4'-DDT	1.7	2004 Region IX Residential PRG[1]
Arsenic	22	2004 Region IX Residential PRG[1]

Notes:
[1]United States Environmental Protection Agency, Region IX Preliminary Remediation Goal (PRG), 2004

1.4 ROLES AND RESPONSIBILITIES

ECC, hereinafter referred to as "the Contractor," executed this removal action, and was supported by several team subcontractors. **Table 1-3** summarizes the various team members involved in the removal action.

Table 1-3: Roles and Responsibilities for Contractor and Subcontractors

Contractor Name	Activity Performed	Contact Information
ECC	Prime Contractor	99-1151 Iwaena Street Aiea, HI 96701 (808) 486-3707 POC: Troy Rosenbush
ESN Pacific	Subsurface Drilling	1818 Kahai Street Honolulu, HI 96819 (808) 847-0067 POC: David Davis
American Machnery	Heavy Equipment Rental	91-238 Kalaeloa Boulevard Kapolei, HI 96707 (808) 478-7023 POC: Ken Souza
Pacific Commercial Services, LLC	Waste Transportation and Disposal	P.O. Box 235117 Honolulu, HI 96823 (808) 545-4599 POC: Jingbo Chang
EnviroQuest, Inc.	Personal Air Monitoring	98-029 Hekaha Street, Suite 21 Aiea, HI 96701 (808) 486-5881 POC: Steven Tanaka
Control Point Surveying, Inc.	Land Surveying	1150 South King Street, Ste. 102 Honolulu, HI 96814 (808) 591-2022 POC: Chris Newman
Test America – Honolulu	Analytical Laboratory – Sample Packing and Shipping	99-193 Aiea Heights Drive, #121 Aiea, HI 96701 (808) 486-5227 POC: Marvin D. Heskett III
Test America – Seattle	Analytical Laboratory – Sample Preparation and Analysis	11720 North Creek Parkway N, Suite 400 Bothell, WA 98011-8244 (425) 420-9200 POC: Sandra Yakamavich
Test America – Tacoma	Analytical Laboratory – Sample Preparation and Analysis	5755 8th Street East Tacoma, WA 98424 (253) 922-2310 POC: Terri Torres
Laboratory Data Consultants, Inc.	Data Validation	7750 El Camino Real, Suite 2L Carlsbad, CA 92009 (760) 634-0437 POC: Stella Cuenco

POC – Point of Contact

2. FIELD ACTIVITIES

This section provides a summary of the field activities performed between July 2007 and April 2008. Photographs documenting work activities are provided as Appendix A.

2.1 PRE-CONSTRUCTION ACTIVITIES

Pre-construction activities included a pre-mobilization site survey and submittal of the Site Work Plan.

2.1.1 Pre-construction Meeting

A formal pre-construction meeting was not held specifically for this site; however, an initial project kick-off meeting was conducted in August 2003.

2.1.2 Work Plan

A Revised SWP Addendum was generated to discuss the planned work practices at the Site (NAVFAC Hawaii 2007b). The SWP Addendum covered all of the planned activities at the Site, but did not include a Sampling and Analysis Plan, Project Quality Control Plan (PQCP), and Site Health and Safety Plan (SHSP). These documents were submitted and approved prior to commencement of the original RA (NAVFAC Pacific 2003b - d).

2.1.3 Pre-mobilization Site Survey

Prior to field operations, the Health and Safety/Quality Control (HS/QC) Supervisor, Site Superintendent, Project Manager, and Bio Treatment Facility (BTF) Supervisor conducted a pre-mobilization site survey. This was performed to determine the existing Site conditions, confirm delineation of work zones, assess Site access issues, and to identify any hazards that may affect the health and safety of project personnel and BTF personnel during field activities. This survey included the following:

- Determination of safe access and movement within work areas;
- Identification of utilities requiring protection and confirmation that there were no high voltage lines in the area;
- Establishment of excavation sequence at the Site;
- Identification of key security access points, particularly for heavy equipment and semi tractor-trailers; and
- Identification of safe stockpiling, staging areas, and equipment storage areas.

All parties were amenable to inter-locking the Contractor lock with the Facility lock at the access point to the Site to allow the Contractor additional time at the end of each work day to complete scheduled tasks. The Contractor was responsible for securing the Site at the end of each work day using the inter-locked Contractor and Facility locks.

2.1.4 Health and Safety, Quality Control and Environmental Protection Requirements

The Contractor was responsible for the health and safety of all employees and subcontractors working at the Site, and followed the applicable reference guidance documents, including:

- Safety and Health Requirements Manual, United States Army Corps of Engineers (USACE) EM 385-1-1 (2003);

- Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities, (NIOSH 1985); and
- 29 Code of Federal Regulations (CFR) 1910, Occupational Safety and Health Administration (OSHA), Occupational Safety and Health Standards (1999).

The SHSP (NAVFAC Pacific 2003c) specified the necessary monitoring, inspection, controls, training, reporting, and communication for this RA. All applicable personnel read and signed the SHSP to verify their understanding of the plan, prior to any onsite work. Furthermore, daily safety tailgate meetings were conducted prior to the start of each workday, reviewing the Activity Hazard Analyses for the anticipated specific tasks being conducted, and safety precautions necessary to complete these tasks safely. All work was performed in Level D Personal Protective Equipment (PPE); except for excavation and packaging of soil, which were initially performed in Level C PPE. Air monitoring for the COC was implemented for the workers during the excavation and packaging of the soil. Laboratory analytical results for personal air monitoring samples are included in **Appendix B**. Analytical results for the personal air monitoring indicated that the concentrations of all COCs were below their respective permissible exposure limits warranting a down-grade in PPE for the re-packaging effort described later in this RVR.

The requirements of the PQCP (NAVFAC Pacific 2003b) were implemented during all phases of the project. This included inspections, tests, and periodic quality control meetings at the Site to track and report progress. The PQCP described procedures established to insure all work was performed in a manner that met the project specifications, the original SWP and Revised SWP Addendum; and conformed to the contract requirements and applicable regulations.

The Site was not designated as an area of archeological interest.

2.2 SURFACE AND SUBSURFACE DELINEATION SOIL SAMPLING

Between July 2 and December 28, 2007, Contractor personnel supervised the collection of surface and subsurface soil samples. The purpose of the sampling was to determine the lateral and vertical extent of contamination with respect to USEPA Region IX Residential PRGs for OCP COC and for arsenic. A total of 35 soil samples (EL001 to EL035), including three field duplicate samples were collected from 12 locations to delineate the Site with respect to residential cleanup criteria. All samples were properly labeled, placed in a cooler with ice, and tracked with chain-of-custody procedures. Upon receipt at the contract laboratory, soil samples were analyzed for organochlorine pesticides (OCP) using USEPA Method 8081 and arsenic using USEPA Method 6020. Analytical results are summarized in **Table 2-1** and sample locations are depicted on **Figure 2-1**. Photographic documentation is included in Appendix A, and laboratory analytical results are provided in Appendix B.

The validation of OCP and arsenic consisted of evaluation of QC parameters including sample preservation, handling and transport, chain-of-custody and holding times, calibration, blanks, surrogate spike, matrix spike, matrix spike duplicate, laboratory control samples and field duplicates. The data was within the QC parameters and met validation parameters. A report summarizing the Precission, Accuracy, Representitiveness, Comparability, and Completeness (PARCC) is included in **Appendix C**. Copies of the data validation reports for this data set are provided in **Appendix C**.

At each sample location where historical analytical results exceeded residential cleanup criteria, a new “stepout” soil sample was collected. Each lateral stepout sample was collected five feet further out (from the center of the site) from the location of the sample that exceeded the cleanup criteria. If analytical

results from the stepout sample exceeded cleanup criteria, another lateral stepout sample was collected, five feet further out from the center of the site. This process continued until analytical results were below the cleanup criteria. Vertical depth samples were collected progressively deeper at two foot intervals until analytical results were below cleanup criteria. Note that once cleanup criteria were met for a particular COC, that particular COC was considered delineated and therefore was not analyzed in subsequent lateral stepout samples, or in subsequent vertical depth samples at that particular location.

On July 2 and 23, 2007, Contractor personnel collected 11 soil samples (EL001 to EL011), including one field duplicate sample (EL002) at 11 locations (DCA-020 through DCA-031) to determine the lateral extent of contamination with respect to residential cleanup criteria. Sample location DCA-020 and DCA-021 were collocated samples. The soil samples were collected using disposable plastic scoops and placed in clean, laboratory-furnished glass jars fitted with Teflon®-lined lids.

On August 2, 2007, Contractor personnel collected two surface soil samples (EL012 and EL028), including one field duplicate sample (EL028) from one final lateral delineation location (DCA-032). In addition to the two surface soil samples, Contractor personnel supervised the advancement of eight borings using a truck-mounted PowerProbe 9630 direct push drill rig **(Photo 1)**. A total of 20 soil samples were collected between two to eight feet below ground surface (bgs) from the eight sample locations. These sample locations included DCA-011, DCA-024, DCA-026, DCA-027, DCA-029, DCA-032, SS-11 and SS-13.

At each boring location a continuous sample was collected using clear, 1.25-inch diameter polyvinyl chloride (PVC) tube fitted within a core barrel. The core barrel and sample tube were advanced in each boring to the appropriate sample depth at which time the core barrel containing the sample tube was removed. A tape measure was used to measure the exact distance corresponding to the appropriate sample depth. A PVC cutter was used to cut a sample from the sample tube length and the ends of the sample were covered with Teflon® tape and plastic end caps.

On December 28, 2007, the final two delineation soil samples (EL034 and EL035), were collected from one sample location (DCA-11) at a depth of 10 feet bgs. Sample EL034 was the primary field sample and Sample EL035 was a field duplicate. Contractor personnel collected the samples after excavation activities had been completed by using the Hitachi excavator bucket to grab in-situ soil from the center of the floor of the 10-ft excavation. The excavated soil was placed in a clean, laboratory-furnished jars fitted with a Teflon®-lined lids. Analytical results are summarized in **Table 2-1**. Laboratory analytical reports are provided in **Appendix B**.

Table 2-1: Analytical Results for Initial Surface and Subsurface Soil Samples

USEPA SAMPLE ID	FIELD SAMPLE ID	DEPTH (ft bgs)	DATE SAMPLED	Analytical Detections (mg/kg)
EL001	DCA-021	0	7/2/2007	heptachlor epoxide <0.00563 α-Chlordane <0.00636 γ-Chlordane 0.0282 4, 4'-DDD <0.00569 4, 4'-DDE 0.610 4, 4'-DDT 0.0975 Arsenic <5.60

USEPA SAMPLE ID	FIELD SAMPLE ID	DEPTH (ft bgs)	DATE SAMPLED	Analytical Detections (mg/kg)
EL002[(a)]	DCA-022	0	7/2/2007	heptachlor epoxide <0.0112 α-Chlordane <0.0127 γ-Chlordane 0.0430 4, 4'-DDD <0.0114 4, 4'-DDE 0.941 4, 4'-DDT 0.107 Arsenic <5.39
EL003	DCA-023	0	7/2/2007	heptachlor epoxide <0.0113 α-Chlordane 0.0115 γ-Chlordane 0.0119 4, 4'-DDD <0.0114 4, 4'-DDE 0.0390 4, 4'-DDT 0.00883 Arsenic 2.24
EL004	**DCA-024**	**0**	**7/2/2007**	**heptachlor epoxide <0.0562** α-Chlordane 0.140 γ-Chlordane 0.260 4, 4'-DDD <0.0114 **4, 4'-DDE 6.180** 4, 4'-DDT 1.460 Arsenic <4.97
EL005	DCA-025	0	7/2/2007	heptachlor epoxide <0.0113 α-Chlordane 0.325 γ-Chlordane 0.444 4, 4'-DDD 0.607 4, 4'-DDE 1.250 4, 4'-DDT 0.400 Arsenic <5.43
EL006	**DCA-026**	**0**	**7/2/2007**	**heptachlor epoxide <0.0566** α-Chlordane <0.0638 γ-Chlordane 0.243 4, 4'-DDD 0.173 **4, 4'-DDE 5.550** **4, 4'-DDT 2.650** Arsenic <5.17
EL007	**DCA-027**	**0**	**7/2/2007**	**heptachlor epoxide <0.0562** α-Chlordane <0.0634 γ-Chlordane <0.0629 4, 4'-DDD <0.0567 **4, 4'-DDE 2.410** 4, 4'-DDT <0.0686 Arsenic <5.50
EL008	DCA-028	0	7/2/2007	heptachlor epoxide <0.00112 α-Chlordane <0.00127 γ-Chlordane 0.00303 4, 4'-DDD 0.00404 4, 4'-DDE 0.0411 4, 4'-DDT 0.0289 Arsenic <4.67

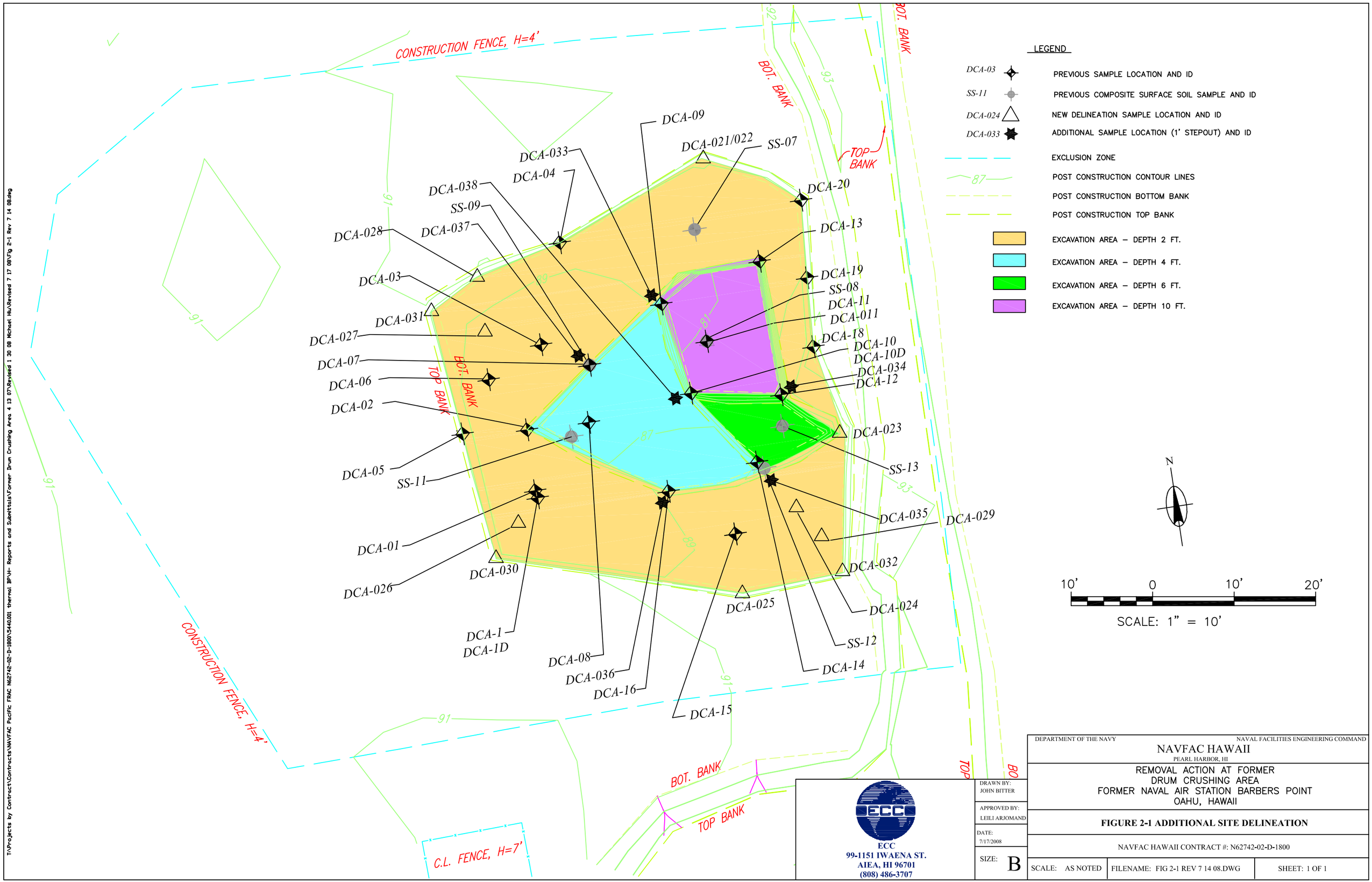
USEPA SAMPLE ID	FIELD SAMPLE ID	DEPTH (ft bgs)	DATE SAMPLED	Analytical Detections (mg/kg)
EL009	**DCA-029**	**0**	**7/23/2007**	heptachlor epoxide <0.0207 α-Chlordane 0.0146 γ-Chlordane 0.0142 4, 4'-DDD 0.0596 **4, 4'-DDE 1.740** 4, 4'-DDT 0.583 Arsenic NA
EL010	DCA-030	0	7/23/2007	heptachlor epoxide <0.0210 α-Chlordane 0.0284 γ-Chlordane 0.0311 4, 4'-DDD <0.0421 4, 4'-DDE 1.210 4, 4'-DDT 0.241 Arsenic NA
EL011	DCA-031	0	7/23/2007	heptachlor epoxide <0.0203 α-Chlordane <0.0203 γ-Chlordane <0.0203 4, 4'-DDD <0.0405 4, 4'-DDE 0.200 4, 4'-DDT 0.0753 Arsenic NA
EL012	DCA-032	0	8/2/2007	heptachlor epoxide <0.0211 α-Chlordane 0.0728 γ-Chlordane 0.0763 4, 4'-DDD 0.0915 4, 4'-DDE 0.628 4, 4'-DDT 0.211 Arsenic NA
EL013	DCA-032	2	8/2/2007	heptachlor epoxide NA α-Chlordane NA γ-Chlordane NA 4, 4'-DDD NA 4, 4'-DDE NA 4, 4'-DDT NA Arsenic NA
EL014	DCA-032	4	8/2/2007	heptachlor epoxide NA α-Chlordane NA γ-Chlordane NA 4, 4'-DDD NA 4, 4'-DDE NA 4, 4'-DDT NA Arsenic NA
EL015	DCA-032	6	8/2/2007	heptachlor epoxide NA α-Chlordane NA γ-Chlordane NA 4, 4'-DDD NA 4, 4'-DDE NA 4, 4'-DDT NA Arsenic NA

USEPA SAMPLE ID	FIELD SAMPLE ID	DEPTH (ft bgs)	DATE SAMPLED	Analytical Detections (mg/kg)
EL016	DCA-029	2	8/2/2007	heptachlor epoxide NA α-Chlordane NA γ-Chlordane NA 4, 4'-DDD NA 4, 4'-DDE 0.0564 4, 4'-DDT NA Arsenic NA
EL017	DCA-029	4	8/2/2007	heptachlor epoxide NA α-Chlordane NA γ-Chlordane NA 4, 4'-DDD NA 4, 4'-DDE NA 4, 4'-DDT NA Arsenic NA
EL018	DCA-029	6	8/2/2007	heptachlor epoxide NA α-Chlordane NA γ-Chlordane NA 4, 4'-DDD NA 4, 4'-DDE NA 4, 4'-DDT NA Arsenic NA
EL019	DCA-024	2	8/2/2007	heptachlor epoxide <0.00104 α-Chlordane NA γ-Chlordane NA 4, 4'-DDD NA 4, 4'-DDE 0.0670 4, 4'-DDT NA Arsenic NA
EL020	DCA-024	4	8/2/2007	heptachlor epoxide NA α-Chlordane NA γ-Chlordane NA 4, 4'-DDD NA 4, 4'-DDE NA 4, 4'-DDT NA Arsenic NA
EL021	DCA-024	6	8/2/2007	heptachlor epoxide NA α-Chlordane NA γ-Chlordane NA 4, 4'-DDD NA 4, 4'-DDE NA 4, 4'-DDT NA Arsenic NA
EL022	DCA-026	2	8/2/2007	heptachlor epoxide <0.00105 α-Chlordane NA γ-Chlordane NA 4, 4'-DDD NA 4, 4'-DDE <0.00210 4, 4'-DDT <0.00210 Arsenic NA

USEPA SAMPLE ID	FIELD SAMPLE ID	DEPTH (ft bgs)	DATE SAMPLED	Analytical Detections (mg/kg)
EL023	DCA-026	4	8/2/2007	heptachlor epoxide NA α-Chlordane NA γ-Chlordane NA 4, 4'-DDD NA 4, 4'-DDE NA 4, 4'-DDT NA Arsenic NA
EL024	DCA-026	6	8/2/2007	heptachlor epoxide NA α-Chlordane NA γ-Chlordane NA 4, 4'-DDD NA 4, 4'-DDE NA 4, 4'-DDT NA Arsenic NA
EL025	DCA-027	2	8/2/2007	heptachlor epoxide <0.0216 α-Chlordane NA γ-Chlordane NA 4, 4'-DDD NA 4, 4'-DDE 0.379 4, 4'-DDT NA Arsenic NA
EL026	DCA-027	4	8/2/2007	heptachlor epoxide NA α-Chlordane NA γ-Chlordane NA 4, 4'-DDD NA 4, 4'-DDE NA 4, 4'-DDT NA Arsenic NA
EL027	DCA-027	6	8/2/2007	heptachlor epoxide NA α-Chlordane NA γ-Chlordane NA 4, 4'-DDD NA 4, 4'-DDE NA 4, 4'-DDT NA Arsenic NA
EL028[(a)]	DCA-032	0	8/2/2007	heptachlor epoxide <0.0208 α-Chlordane 0.115 γ-Chlordane 0.114 4, 4'-DDD 0.0552 4, 4'-DDE 0.978 4, 4'-DDT 0.360 Arsenic NA
EL029	**DCA-011**	**8**	**8/2/2007**	heptachlor epoxide NA α-Chlordane NA γ-Chlordane NA 4, 4'-DDD NA 4, 4'-DDE NA 4, 4'-DDT NA **Arsenic 46.5**

USEPA SAMPLE ID	FIELD SAMPLE ID	DEPTH (ft bgs)	DATE SAMPLED	Analytical Detections (mg/kg)
EL030	SS-11	4	8/2/2007	heptachlor epoxide NA α-Chlordane NA γ-Chlordane NA 4, 4'-DDD <0.00214 4, 4'-DDE <0.00214 4, 4'-DDT 0.0172 Arsenic NA
EL031	SS-11	6	8/2/2007	heptachlor epoxide NA α-Chlordane NA γ-Chlordane NA 4, 4'-DDD NA 4, 4'-DDE NA 4, 4'-DDT NA Arsenic NA
EL032	**SS-13**	**4**	**8/2/2007**	heptachlor epoxide <0.00107 α-Chlordane 0.0586 γ-Chlordane 0.0605 4, 4'-DDD 0.148 4, 4'-DDE 0.662 **4, 4'-DDT 2.170** Arsenic NA
EL033	SS-13	6	8/2/2007	heptachlor epoxide NA α-Chlordane NA γ-Chlordane NA 4, 4'-DDD NA 4, 4'-DDE NA 4, 4'-DDT 0.0263 Arsenic NA
EL034	DCA-11	10	12/28/2007	heptachlor epoxide NA α-Chlordane NA γ-Chlordane NA 4, 4'-DDD NA 4, 4'-DDE NA 4, 4'-DDT NA Arsenic 3.17
EL035[(a)]	DCA-11	10	12/28/2007	heptachlor epoxide NA α-Chlordane NA γ-Chlordane NA 4, 4'-DDD NA 4, 4'-DDE NA 4, 4'-DDT NA Arsenic 2.22

Notes:
All results reported in milligrams per kilogram (mg/kg).
[(a)] - indicates field duplicate sample.
ID – identification.
NA – not analyzed.
ft bgs – feet below ground surface.
Results in bold indicate concentrations exceed residential cleanup criteria.



T:\Projects by Contract\Contracts\NAVFAC Pacific FRAC N62742-02-D-1800\5440.001 thermal BP\H- Reports and Submittals\Former Drum Crushing Area 4 13 07\Revised 1 30 08 Michael Hu\Revised 7 17 08\Fig 2-1 Rev 7 14 08.dwg

DEPARTMENT OF THE NAVY — NAVAL FACILITIES ENGINEERING COMMAND

NAVFAC HAWAII
PEARL HARBOR, HI

REMOVAL ACTION AT FORMER
DRUM CRUSHING AREA
FORMER NAVAL AIR STATION BARBERS POINT
OAHU, HAWAII

FIGURE 2-1 ADDITIONAL SITE DELINEATION

NAVFAC HAWAII CONTRACT #: N62742-02-D-1800

ECC
99-1151 IWAENA ST.
AIEA, HI 96701
(808) 486-3707

DRAWN BY: JOHN BITTER
APPROVED BY: LEILI ARJOMAND
DATE: 7/17/2008
SIZE: B

SCALE: AS NOTED | FILENAME: FIG 2-1 REV 7 14 08.DWG | SHEET: 1 OF 1

2.3 POST-EXCAVATION, SUPPLEMENTAL SUBSURFACE SOIL SAMPLING

Subsequent to excavation activities, review of the pre-excavation data showed that six sample locations, used as lateral or vertical delineation points, had analytical results in excess of cleanup criteria. These samples had been used to define the boundary between excavation horizons of differing depths. The soil at each of the specific sample locations was subsequently removed during excavation, but there were no adjacent samples documenting analytical results below cleanup criteria. These sample locations included DCA-09, DCA-10/-10D, DCA-12, DCA-14, DCA-16, SS-09/DCA-07, and SS-12.

To rectify this situation, additional subsurface soil sampling was performed. On February 25, 2008, Contractor personnel supervised the collection of six subsurface soil samples (EL036 to EL041) to further assess the specific locations DCA-033 to DCA-038 at the Site with respect to residential cleanup criteria **(Photo 2)**. At each of those locations, direct push sampling techniques were used to collect a sample at 1-ft perpendicular to the edge of the excavation transition.

The sampling rods were advanced to the appropriate depth at the contact of clean fill material and in-situ soil **(Photo 3)**. The clear PVC sampling tube was removed and a soil sample was collected at the interface, ensuring collection of in-situ soil. A discrete soil sample was cut from the sample tube, covered with Teflon® tape and end caps, labeled, and placed in a cooler with ice **(Photo 4)**. The samples were hand delivered by Contractor personnel under chain-of-custody the same day of collection. Analytical results are summarized in **Table 2-2**. Sample locations are depicted in **Figure 2-1**. Laboratory analytical reports are provided in Appendix B.

The validation of OCP and arsenic consisted of evaluation of QC parameters including sample preservation, handling and transport, chain-of-custody and holding times, calibration, blanks, surrogate spike, matrix spike, matrix spike duplicate, laboratory control samples and field duplicates. The data was within the QC parameters and met validation parameters. Copies of the data validation report for this data set and the PARCC report are provided in **Appendix C**.

Table 2-2: Analytical Results for Post-excavation Subsurface Soil Samples

USEPA SAMPLE ID	FIELD SAMPLE ID	DEPTH (ft bgs)	DATE SAMPLED	Analytical Detections (mg/kg)
EL036	DCA-033	2	02/25/2008	heptachlor epoxide NA α-Chlordane NA γ-Chlordane NA 4, 4'-DDD <0.00027 4, 4'-DDT NA 4, 4'-DDE 0.0032 Arsenic NA
EL037	DCA-034	2	02/25/2008	heptachlor epoxide NA α-Chlordane NA γ-Chlordane NA 4, 4'-DDD NA 4, 4'-DDE NA 4, 4'-DDT NA Arsenic 1.2

USEPA SAMPLE ID	FIELD SAMPLE ID	DEPTH (ft bgs)	DATE SAMPLED	Analytical Detections (mg/kg)
EL038	DCA-035	4	02/25/2008	heptachlor epoxide NA α-Chlordane NA γ-Chlordane NA 4, 4'-DDD NA 4, 4'-DDE 0.340 4, 4'-DDT 0.360 Arsenic NA
EL039	DCA-036	2	02/25/2008	heptachlor epoxide NA α-Chlordane NA γ-Chlordane NA 4, 4'-DDD NA 4, 4'-DDE 0.280 4, 4'-DDT 0.110 Arsenic NA
EL040	DCA-037	2	02/25/2008	heptachlor epoxide NA α-Chlordane <0.00013 γ-Chlordane <0.00013 4, 4'-DDD 0.00062 J 4, 4'-DDE 0.003 4, 4'-DDT 0.002J Arsenic 0.74
EL041	DCA-038	4	02/25/2008	heptachlor epoxide NA α-Chlordane NA γ-Chlordane NA 4, 4'-DDD 0.420 4, 4'-DDE 0.950 4, 4'-DDT 0.530 Arsenic NA

Notes:
All results reported in milligrams per kilogram (mg/kg). All reported sample concentrations represent dry sample weight.
ID – Identification.
ft bgs – feet below ground surface.
NA – not analyzed.
J – Result is less than the Reporting Limit but greater than or equal to the Method Detection Limit and the concentration is an approximate value.

On March 14, 2008, Contractor personnel collected one final soil sample (EL043) from approximately 2 ft bgs using a hand auger and other hand tools **(Photo 5)**. This sample was collected to further assess OCP with respect to residential cleanup criteria and in relation to sample SS-12. The final soil sample was collected when a change in lithology from clean, reddish brown silty clay fill material to tan to white coralline sand was observed, assuring collection of native soil **(Photo 6)**. A disposable scoop was used to place the soil in a clean, laboratory-furnished 8-ounce jar fitted with a Teflon®-lined lid. The sample was sealed, labeled, and placed on ice. The sample was hand delivered by Contractor personnel under chain-of-custody the same day of collection. Analytical results are summarized in **Table 2-3**. Sample location is depicted in **Figure 2-1**. The laboratory analytical report is provided in Appendix B. A copy of the data validation report for this sample and the PARCC report are included in **Appendix C**.

Table 2-3: Analytical Results for Final Post-excavation Subsurface Soil Sample

USEPA SAMPLE ID	FIELD SAMPLE ID	DEPTH (ft bgs)	DATE SAMPLED	Analytical Detections (mg/kg)
EL043	DCA-035	2	03/14/2008	heptachlor epoxide NA α-Chlordane NA γ-Chlordane NA 4, 4'-DDD 0.022 J 4, 4'-DDE 0.560 4, 4'-DDT 0.340 Arsenic NA

Notes:
All results reported in milligrams per kilogram (mg/kg). All reported sample concentrations represent dry sample weight.
ID – Identification.
ft bgs – feet below ground surface.
NA – not analyzed.
J – Result is less than the Reporting Limit but greater than or equal to the Method Detection Limit and the concentration is an approximate value.

2.4 DELINEATION ASSESSMENT AND FINAL EXCAVATION LIMITS

Analytical results from the previous site investigations, the initial delineation soil sampling and the post-excavation subsurface soil sampling were used to create and confirm the final lateral and vertical limits of excavation with respect to residential cleanup criteria. Based on this combined data set, four distinct depths (2-foot, 4-foot, 6-foot and 10-foot) were identified as final excavation limits **(Figure 2-1)**. These final excavation limits were determined when all COC were detected at concentrations below their respective cleanup criteria.

In preparation of this RVR, data verification was performed for previously collected data at the former DCA. During this review, a discrepancy was discovered for the 2-foot sample (004TR1469) collected at sampling location DCA-12 in 2002. The results initially reported for 004TR1469 indicated that all OCP levels were below site specific cleanup goals; however, verification of these results using Navy archived analytical data determined that OCP levels in 004TR1469 actually exceeded cleanup goals. See Sections 2.4.2 and 4.0 for further discussion.

2.4.1 Vertical and Lateral Delineation for Arsenic

Arsenic was detected at five sample locations in excess of the cleanup criteria of 22 mg/kg. At each location, additional soil samples were collected to delineate the Site both vertically and laterally with respect to arsenic. Analytical results for the vertical and lateral delineation of arsenic are summarized in **Table 2-4**. Sample locations and analytical results for the vertical and lateral delineation of arsenic are presented on **Figure 2-2**.

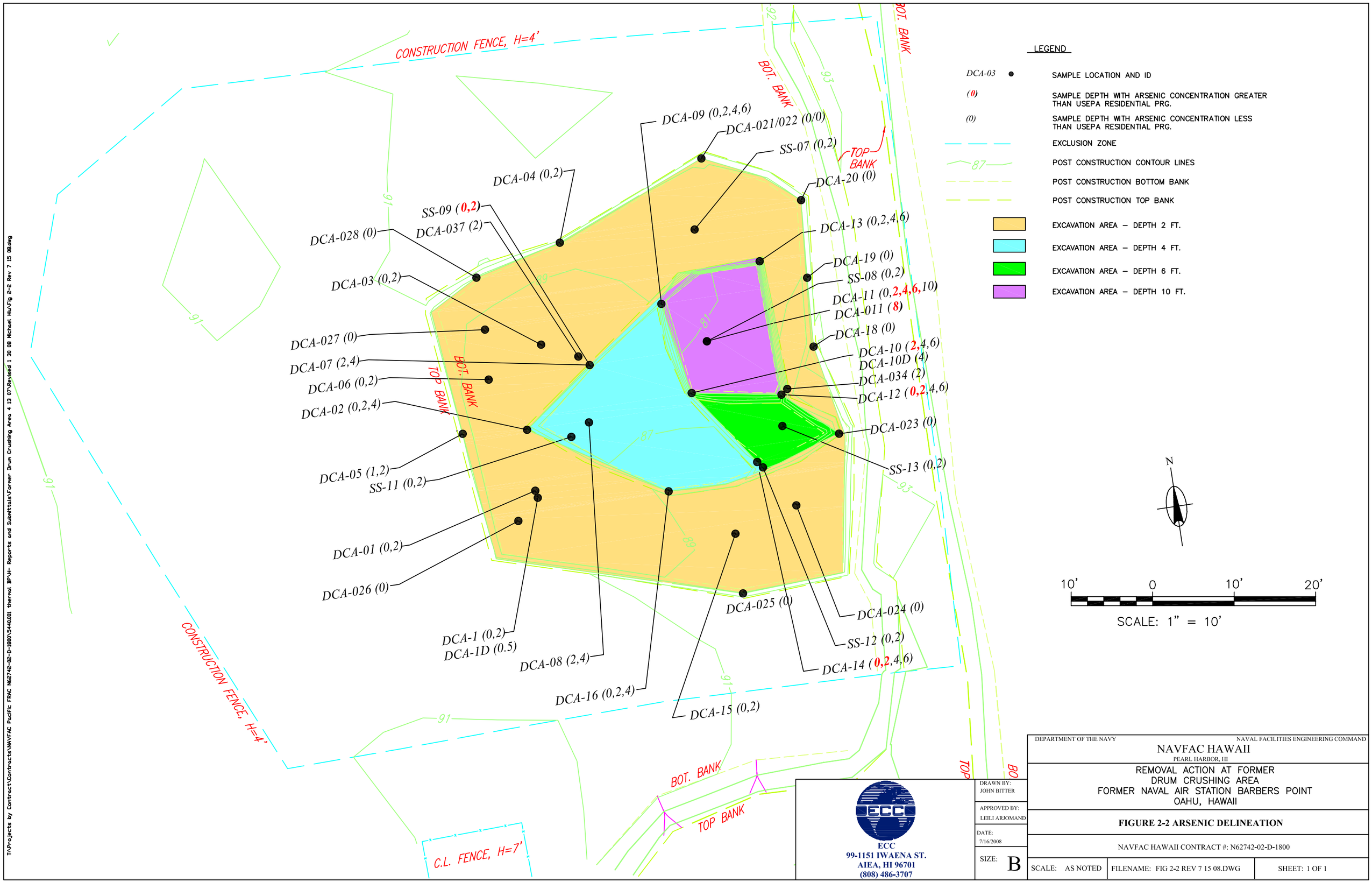
Table 2-4: Analytical Results for Arsenic Delineation (December 1994 to February 2008)

USEPA SAMPLE ID	FIELD SAMPLE ID	SAMPLE DEPTH (ft bgs)	EXCAVATION DEPTH (ft bgs)	DATE SAMPLED	Analytical Detections (mg/kg)
SS-07					
SB016	SS-07	0	2	12/20/1994	Arsenic 3.3
SB017	SS-07	2	2	12/20/1994	Arsenic 1.1
SS-08/ DCA-11/ DCA-011					
SB018	SS-08	0	10	12/20/1994	Arsenic 4.5
TR1464	DCA-11	0	10	2/4/2002	Arsenic 14.2
SB019	SS-08	2	10	12/20/1994	Arsenic 4.2
TR1467	**DCA-11**	**2**	**10**	**2/4/2002**	**Arsenic 71.9**
TR1465	**DCA-11**	**4**	**10**	**2/4/2002**	**Arsenic 34.3**
TR1466	**DCA-11**	**6**	**10**	**2/4/2002**	**Arsenic 42.7 J**
EL029	**DCA-011**	**8**	**10**	**8/2/2007**	**Arsenic 46.5**
EL034	DCA-11	10	10	12/28/2007	Arsenic 3.17
EL035[(a)]	DCA-11	10	10	12/28/2007	Arsenic 2.22
SS-09/ DCA-07/ DCA-037					
SB020	**SS-09**	**0**	**2/4**	**12/20/1994**	**Arsenic 50.4**
SB021	**SS-09**	**2**	**2/4**	**12/20/1994**	**Arsenic 40.1**
SB022	**SS-09D**	**2**	**2/4**	**12/20/1994**	**Arsenic 36.1**
TR1448	DCA-07	2	2/4	2/1/2002	Arsenic 0.92
TR1449	DCA-07	4	2/4	2/1/2002	Arsenic 0.91
EL040	DCA-037	2	2	02/25/2008	Arsenic 0.74
SS-11					
SB026	SS-11	0	4	12/20/1994	Arsenic 11.4
SB027	SS-11	2	4	12/20/1994	Arsenic 3.6
SS-12					
SB028	SS-12	0	2/4	12/20/1994	Arsenic 3.1
SB029	SS-12	2	2/4	12/20/1994	Arsenic 5.4
SS-13					
SB030	SS-13	0	6	12/20/1994	Arsenic 2.5
SB031	SS-13	2	6	12/20/1994	Arsenic 4.9
DCA-1					
TR1490	DCA-1	0	2	2/4/2002	Arsenic 1.2 J
TR1491	DCA-1D	0.5	2	2/4/2002	Arsenic 0.79
TR1492	DCA-1	2	2	2/4/2002	Arsenic 0.63
DCA-01					
TR1425	DCA-01	0	2	2/1/2002	Arsenic 10.6
TR1426	DCA-01	2	2	2/1/2002	Arsenic 2.1
DCA-02					
TR1427	DCA-02	0	2/4	2/1/2002	Arsenic 2.6
TR1428	DCA-02	2	2/4	2/1/2002	Arsenic 0.82
TR1429	DCA-02	4	2/4	2/1/2002	Arsenic 0.46

USEPA SAMPLE ID	FIELD SAMPLE ID	SAMPLE DEPTH (ft bgs)	EXCAVATION DEPTH (ft bgs)	DATE SAMPLED	Analytical Detections (mg/kg)
			DCA-03		
TR1431	DCA-03	0	2	2/1/2002	Arsenic 8.8
TR1432	DCA-03	2	2	2/1/2002	Arsenic 2.5
			DCA-04		
TR1435	DCA-04	0	0/2	2/1/2002	Arsenic 4.8
TR1436	DCA-04	2	0/2	2/1/2002	Arsenic 4.4
			DCA-05		
TR1439	DCA-05	1	0/2	2/1/2002	Arsenic 4.5
TR1440	DCA-05	2	0/2	2/1/2002	Arsenic 7.4
			DCA-06		
TR1443	DCA-06	0	2	2/1/2002	Arsenic 4.3
TR1444	DCA-06	2	2	2/1/2002	Arsenic 2.7
			DCA-08		
TR1451	DCA-08	2	4	2/1/2002	Arsenic 2.1
TR1452	DCA-08	4	4	2/1/2002	Arsenic 0.87
			DCA-09		
TR1454	DCA-09	0	2/4/10	2/1/2002	Arsenic 21.8
TR1455	DCA-09	2	2/4/10	2/1/2002	Arsenic 2.9
TR1456	DCA- 09	4	2/4/10	2/1/2002	Arsenic 0.65
TR1457	DCA- 09	6	2/4/10	2/1/2002	Arsenic 0.47
			DCA-10		
TR1458	**DCA- 10**	**2**	**4/6/10**	**2/1/2002**	**Arsenic 38.9**
TR1460	DCA-10	4	4/6/10	2/1/2002	Arsenic 1
TR1461	DCA-10D	4	4/6/10	2/1/2002	Arsenic 0.8
TR1462	DCA-10	6	4/6/10	2/1/2002	Arsenic 0.51
			DCA-12		
TR1468	**DCA-12**	**0**	**2/6/10**	**2/4/2002**	**Arsenic 202**
TR1469	**DCA-12**	**2**	**2/6/10**	**2/4/2002**	**Arsenic 251**
EL037	DCA-034	2	2	02/25/2008	Arsenic 1.2
TR1470	DCA-12	4	2/6/10	2/4/2002	Arsenic 0.8
TR1471	DCA-12	6	2/6/10	2/4/2002	Arsenic 0.61
			DCA-13		
TR1472	DCA-13	0	2/10	2/4/2002	Arsenic 6.5
TR1473	DCA-13	2	2/10	2/4/2002	Arsenic 3 UJ
TR1474	DCA-13	4	2/10	2/4/2002	Arsenic 3.3
TR1475	DCA-13	6	2/10	2/4/2002	Arsenic 0.59
			DCA-14		
TR1476	**DCA-14**	**0**	**4/6**	**2/4/2002**	**Arsenic 42.1**
TR1477	**DCA-14**	**2**	**4/6**	**2/4/2002**	**Arsenic 29.1**
TR1478	DCA-14	4	4/6	2/4/2002	Arsenic 1.9
TR1479	DCA-14	6	4/6	2/4/2002	Arsenic 0.56

USEPA SAMPLE ID	FIELD SAMPLE ID	SAMPLE DEPTH (ft bgs)	EXCAVATION DEPTH (ft bgs)	DATE SAMPLED	Analytical Detections (mg/kg)
DCA-15					
TR1480	DCA-15	0	2	2/4/2002	Arsenic 4.2
TR1481	DCA-15	2	2	2/4/2002	Arsenic 0.47
DCA-16					
TR1485	DCA-16	0	2/4	2/4/2002	Arsenic 8.2
TR1486	DCA-16	2	2/4	2/4/2002	Arsenic 5.1
TR1487	DCA-16	4	2/4	2/4/2002	Arsenic 0.77
DCA-18					
TR1921	DCA-18	0	0/2	4/12/2005	Arsenic 4
DCA-19					
TR1922	DCA-19	0	0/2	4/12/2005	Arsenic 13.4
DCA-20					
TR1923	DCA-20	0	0/2	4/12/2005	Arsenic 10.3
DCA-021/ DCA-022					
EL001	DCA-021	0	0/2	7/2/2007	Arsenic <5.60
EL002[(a)]	DCA-022	0	0/2	7/2/2007	Arsenic <5.39
DCA-023					
EL003	DCA-023	0	0/2/10	7/2/2007	Arsenic 2.24
DCA-024					
EL004	DCA-024	0	2	7/2/2007	Arsenic <4.97
DCA-025					
EL005	DCA-025	0	0/2	7/2/2007	Arsenic <5.43
DCA-026					
EL006	DCA-026	0	2	7/2/2007	Arsenic <5.17
DCA-027					
EL007	DCA-027	0	2	7/2/2007	Arsenic <5.50
DCA-028					
EL008	DCA-028	0	0/2	7/2/2007	Arsenic <4.67

Notes:
All results reported in milligrams per kilogram (mg/kg). All reported sample concentrations represent dry sample weight.
ID – Identification.
< – less than.
ft bgs – feet below ground surface.
U – The analyte of interest was not detected to the limit of detection indicated.
J – The reported value was obtained from a reading that was less than the Contract Required Detection Limit but greater than or equal to the Instrument Detection Limit. If the analyte was analyzed for but not detected, a "U" shall be entered. (Inorganic Analyses).
Results in bold indicate concentrations exceed residential cleanup criteria.


CONSTRUCTION FENCE, H=4'
CONSTRUCTION FENCE, H=4'
C.L. FENCE, H=7'
BOT. BANK
TOP BANK
DCA-09 (0,2,4,6)
DCA-021/022 (0/0)
SS-07 (0,2)
DCA-20 (0)
DCA-04 (0,2)
SS-09 (0,2)
DCA-037 (2)
DCA-028 (0)
DCA-03 (0,2)
DCA-13 (0,2,4,6)
DCA-19 (0)
SS-08 (0,2)
DCA-11 (0,2,4,6,10)
DCA-011 (8)
DCA-18 (0)
DCA-027 (0)
DCA-07 (2,4)
DCA-06 (0,2)
DCA-02 (0,2,4)
DCA-10 (2,4,6)
DCA-10D (4)
DCA-034 (2)
DCA-12 (0,2,4,6)
DCA-023 (0)
SS-13 (0,2)
DCA-05 (1,2)
SS-11 (0,2)
DCA-01 (0,2)
DCA-026 (0)
DCA-025 (0)
DCA-024 (0)
SS-12 (0,2)
DCA-14 (0,2,4,6)
DCA-1 (0,2)
DCA-1D (0.5)
DCA-08 (2,4)
DCA-16 (0,2,4)
DCA-15 (0,2)
LEGEND
DCA-03 SAMPLE LOCATION AND ID
(0) SAMPLE DEPTH WITH ARSENIC CONCENTRATION GREATER THAN USEPA RESIDENTIAL PRG.
(0) SAMPLE DEPTH WITH ARSENIC CONCENTRATION LESS THAN USEPA RESIDENTIAL PRG.
EXCLUSION ZONE
POST CONSTRUCTION CONTOUR LINES
POST CONSTRUCTION BOTTOM BANK
POST CONSTRUCTION TOP BANK
EXCAVATION AREA – DEPTH 2 FT.
EXCAVATION AREA – DEPTH 4 FT.
EXCAVATION AREA – DEPTH 6 FT.
EXCAVATION AREA – DEPTH 10 FT.
N
10' 0 10' 20'
SCALE: 1" = 10'
ECC
99-1151 IWAENA ST.
AIEA, HI 96701
(808) 486-3707
DRAWN BY: JOHN BITTER
APPROVED BY: LEILI ARJOMAND
DATE: 7/16/2008
SIZE: B
DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
NAVFAC HAWAII
PEARL HARBOR, HI
REMOVAL ACTION AT FORMER
DRUM CRUSHING AREA
FORMER NAVAL AIR STATION BARBERS POINT
OAHU, HAWAII
FIGURE 2-2 ARSENIC DELINEATION
NAVFAC HAWAII CONTRACT #: N62742-02-D-1800
SCALE: AS NOTED
FILENAME: FIG 2-2 REV 7 15 08.DWG
SHEET: 1 OF 1
T:\Projects by Contract\Contracts\NAVFAC Pacific FRAC N62742-02-D-1800\5440.001 thermal BP\U- Reports and Submittals\Former Drum Crushing Area 4 13 07\Revised 1 30 08 Michael Hu\Fig 2-2 Rev 7 15 08.dwg

2.4.2 Vertical and Lateral Delineation for Organochlorine Pesticides

Organochlorine pesticides (OCPs), as initially reported, were detected at 23 sample locations in excess of their respective residential cleanup criteria. At each location, additional soil samples were collected to delineate the Site both vertically and laterally, with respect to each individual chemical constituent, until all chemical constituents were below their respective residential cleanup criteria. Analytical results for the vertical and lateral delineation of OCPs are summarized in **Table 2-5**. Sample locations and analytical results for the vertical and lateral delineation of OCPs are presented on **Figure 2-3**.

Table 2-5: Analytical Results for Organochlorine Pesticides Delineation (December 1994 to March 2008)

USEPA SAMPLE ID	FIELD SAMPLE ID	SAMPLE DEPTH (ft bgs)	EXCAVATION DEPTH (ft bgs)	DATE SAMPLED	Analytical Detections (mg/kg)
			SS-07		
SB016	**SS-07**	**0**	**2**	**12/20/1994**	α-Chlordane 0.12 γ-Chlordane 0.13 4, 4'-DDD 0.37 **4, 4'-DDE 2.2** 4, 4'-DDT 1.3
SB017	SS-07	2	2	12/20/1994	α-Chlordane ND γ-Chlordane ND 4, 4'-DDD ND 4, 4'-DDE 0.26 4, 4'-DDT 0.28
			SS-08/ DCA-11		
SB018	**SS-08**	**0**	**10**	**12/20/1994**	α-Chlordane ND γ-Chlordane ND 4, 4'-DDD ND **4, 4'-DDE 17** **4, 4'-DDT 16**
TR1464	**DCA-11**	**0**	**10**	**2/4/2002**	**heptachlor epoxide 0.054 NJ** α-Chlordane 0.27 J γ-Chlordane 0.46 J 4, 4'-DDD 1.5 J **4, 4'-DDE 16 J** **4, 4'-DDT 8.1 J**
SB019	**SS-08**	**2**	**10**	**12/20/1994**	α-Chlordane ND γ-Chlordane ND 4, 4'-DDD ND **4, 4'-DDE 38** **4, 4'-DDT 99**
TR1467	DCA-11	2	10	2/4/2002	heptachlor epoxide 0.0075 U α-Chlordane 0.0075 U γ-Chlordane 0.016 4, 4'-DDD 0.12 4, 4'-DDE 1.1 D 4, 4'-DDT 0.22
TR1465	**DCA-11**	**4**	**10**	**2/4/2002**	heptachlor epoxide 0.0071 UJ α-Chlordane 0.094 J γ-Chlordane 0.11 NJ **4, 4'-DDD 8.4 J** **4, 4'-DDE 4.4 J** **4, 4'-DDT 6.8 J**

USEPA SAMPLE ID	FIELD SAMPLE ID	SAMPLE DEPTH (ft bgs)	EXCAVATION DEPTH (ft bgs)	DATE SAMPLED	Analytical Detections (mg/kg)
TR1466	DCA-11	6	10	2/4/2002	heptachlor epoxide 0.007 UJ α-Chlordane 0.007 UJ γ-Chlordane 0.007 UJ 4, 4'-DDD 0.041 J 4, 4'-DDE 0.023 J 4, 4'-DDT 0.03 J
SS-09/ DCA-07/ DCA-037					
SB020	**SS-09**	**0**	**2/4**	**12/20/1994**	**α-Chlordane 5.4** **γ-Chlordane 6.9** **4, 4'-DDD 71** **4, 4'-DDE 77** **4, 4'-DDT 18**
SB021	**SS-09**	**2**	**2/4**	**12/20/1994**	**α-Chlordane 2.6** **γ-Chlordane 3.3** **4, 4'-DDD 130** **4, 4'-DDE 60** **4, 4'-DDT 1.8**
SB022	**SS-09D**	**2**	**2/4**	**12/20/1994**	**α-Chlordane 2.3** **γ-Chlordane 2.7** **4, 4'-DDD 130** **4, 4'-DDE 53** 4, 4'-DDT ND
TR1448	**DCA-07**	**2**	**2/4**	**2/1/2002**	**heptachlor epoxide 0.087 U** α-Chlordane 0.087 U **γ-Chlordane 1.8 JN** **4, 4'-DDD 12 J** **4, 4'-DDE 81 J** 4, 4'-DDT 0.18 U
EL040	DCA-037	2	2	02/25/2008	heptachlor epoxide 0.00067 α-Chlordane <0.00013 γ-Chlordane <0.00013 4, 4'-DDD 0.00062 J 4, 4'-DDE 0.003 4, 4'-DDT 0.002J
TR1449	DCA-07	4	2/4	2/1/2002	heptachlor epoxide 0.0072 UJ α-Chlordane 0.0072 UJ γ-Chlordane 0.0072 UJ 4, 4'-DDD 0.4 J 4, 4'-DDE 1.1 J 4, 4'-DDT 0.18 J
SS-11					
SB026	**SS-11**	**0**	**4**	**12/20/1994**	α-Chlordane ND γ-Chlordane ND **4, 4'-DDD 150** **4, 4'-DDE 67** **4, 4'-DDT 10**
SB027	**SS-11**	**2**	**4**	**12/20/1994**	α-Chlordane ND γ-Chlordane ND **4, 4'-DDD 130** **4, 4'-DDE 58** **4, 4'-DDT 2.7**

USEPA SAMPLE ID	FIELD SAMPLE ID	SAMPLE DEPTH (ft bgs)	EXCAVATION DEPTH (ft bgs)	DATE SAMPLED	Analytical Detections (mg/kg)
EL030	SS-11	4	4	8/2/2007	heptachlor epoxide NA α-Chlordane NA γ-Chlordane NA 4, 4'-DDD <0.00214 4, 4'-DDE <0.00214 4, 4'-DDT 0.0172
SS-12/ DCA-14/ DCA-035					
SB028	**SS-12**	**0**	**2/4/6**	**12/20/1994**	α-Chlordane 0.17 γ-Chlordane 0.15 4, 4'-DDD 0.23 **4, 4'-DDE 2.5** 4, 4'-DDT 1.1
TR1476	**DCA-14**	**0**	**2/4/6**	**2/4/2002**	**heptachlor epoxide 0.61 J** **α-Chlordane 51** **γ-Chlordane 62** **4, 4'-DDD 100** **4, 4'-DDE 650** **4, 4'-DDT 3000**
SB029	**SS-12**	**2**	**2/4/6**	**12/20/1994**	α-Chlordane 1.4 γ-Chlordane 1.2 **4, 4'-DDD 2.4** **4, 4'-DDE 8.6** **4, 4'-DDT 5.2**
TR1477	**DCA-14**	**2**	**2/4/6**	**2/4/2002**	**heptachlor epoxide 0.23 D** α-Chlordane 1.4 D γ-Chlordane 1.4 D 4, 4'-DDD 2.3 D **4, 4'-DDE 10 D** **4, 4'-DDT 16 D**
EL043	DCA-035	2	2/4/6	03/14/2008	heptachlor epoxide 0.0077 α-Chlordane NA γ-Chlordane NA 4, 4'-DDD 0.022 J 4, 4'-DDE 0.560 4, 4'-DDT 0.340
TR1478	**DCA-14**	**4**	**2/4/6**	**2/4/2002**	heptachlor epoxide 0.007 UJ α-Chlordane 0.075 J γ-Chlordane 0.087 J 4, 4'-DDD 0.2 J 4, 4'-DDE 1.2 J **4, 4'-DDT 2.1 J**
EL038	DCA-035	4	2/4/6	02/25/2008	heptachlor epoxide NA α-Chlordane NA γ-Chlordane NA 4, 4'-DDD NA 4, 4'-DDE 0.340 4, 4'-DDT 0.360
TR1479	DCA-14	6	2/4/6	2/4/2002	heptachlor epoxide 0.0073 UJ α-Chlordane 0.0073 UJ γ-Chlordane 0.0073 UJ 4, 4'-DDD 0.015 UJ 4, 4'-DDE 0.05 J 4, 4'-DDT 0.053 J

USEPA SAMPLE ID	FIELD SAMPLE ID	SAMPLE DEPTH (ft bgs)	EXCAVATION DEPTH (ft bgs)	DATE SAMPLED	Analytical Detections (mg/kg)
			SS-13		
SB030	**SS-13**	**0**	**6**	**12/20/1994**	α-Chlordane 0.14 γ-Chlordane 0.13 4, 4'-DDD ND **4, 4'-DDE 3.9** 4, 4'-DDT 1.5
SB031	**SS-13**	**2**	**6**	**12/20/1994**	α-Chlordane 0.27 γ-Chlordane 0.31 4, 4'-DDD ND 4, 4'-DDE ND **4, 4'-DDT 4.4**
EL032	**SS-13**	**4**	**6**	**8/2/2007**	heptachlor epoxide <0.00107 α-Chlordane 0.0586 γ-Chlordane 0.0605 4, 4'-DDD 0.148 4, 4'-DDE 0.662 **4, 4'-DDT 2.170**
EL033	SS-13	6	6	8/2/2007	heptachlor epoxide NA α-Chlordane NA γ-Chlordane NA 4, 4'-DDD NA 4, 4'-DDE NA 4, 4'-DDT 0.0263
			DCA-01		
TR1425	**DCA-01**	**0**	**2**	**2/1/2002**	heptachlor epoxide 0.0079 UJ α-Chlordane 0.089 J γ-Chlordane 0.098 J 4, 4'-DDD 0.16 J **4, 4'-DDE 9.6 J** **4, 4'-DDT 3.9 J**
TR1426	DCA-01	2	2	2/1/2002	heptachlor epoxide 0.0067 UJ α-Chlordane 0.0067 UJ γ-Chlordane 0.0067 UJ 4, 4'-DDD 0.014 UJ 4, 4'-DDE 0.62 J 4, 4'-DDT 0.27 J
			DCA-02		
TR1427	**DCA-02**	**0**	**2/4**	**2/1/2002**	**heptachlor epoxide 0.074 U** α-Chlordane 0.42 D γ-Chlordane 0.44 D 4, 4'-DDD 1.8 D **4, 4'-DDE 38 D** **4, 4'-DDT 54 D**
TR1428	DCA-02	2	2/4	2/1/2002	heptachlor epoxide 0.0036 UJ α-Chlordane 0.0036 UJ γ-Chlordane 0.0036 UJ 4, 4'-DDD 0.072 UJ 4, 4'-DDE 0.4 J 4, 4'-DDT 0.6 J

USEPA SAMPLE ID	FIELD SAMPLE ID	SAMPLE DEPTH (ft bgs)	EXCAVATION DEPTH (ft bgs)	DATE SAMPLED	Analytical Detections (mg/kg)
TR1429	DCA-02	4	2/4	2/1/2002	heptachlor epoxide 0.0074 UJ α-Chlordane 0.0074 UJ γ-Chlordane 0.0074 UJ 4, 4'-DDD 0.015 UJ 4, 4'-DDE 0.015 UJ 4, 4'-DDT 0.015 UJ
DCA-03					
TR1431	**DCA-03**	**0**	**2**	**2/1/2002**	**heptachlor epoxide 0.28 D** **α-Chlordane 3.6 J** **γ-Chlordane 3.3 J** 4, 4'-DDD 2 D **4, 4'-DDE 60 J** **4, 4'-DDT 25 J**
TR1432	DCA-03	2	2	2/1/2002	heptachlor epoxide 0.0082 U α-Chlordane 0.0082 U γ-Chlordane 0.0082 U 4, 4'-DDD 0.016 U 4, 4'-DDE 0.021 4, 4'-DDT 0.018
DCA-04					
TR1435	DCA-04	0	0/2	2/1/2002	heptachlor epoxide 0.0074 UJ α-Chlordane 0.0074 UJ γ-Chlordane 0.0074 UJ 4, 4'-DDD 0.015UJ 4, 4'-DDE 0.83 UJ 4, 4'-DDT 0.044 UJ
TR1436	DCA-04	2	0/2	2/1/2002	heptachlor epoxide 0.0081 UJ α-Chlordane 0.0081 UJ γ-Chlordane 0.0081 UJ 4, 4'-DDD 0.016 UJ 4, 4'-DDE 0.016 UJ 4, 4'-DDT 0.016 UJ
DCA-05					
TR1439	DCA-05	1	0/2	2/1/2002	heptachlor epoxide 0.0078 UJ α-Chlordane 0.0078 UJ γ-Chlordane 0.0078 UJ 4, 4'-DDD 0.016 UJ 4, 4'-DDE 0.95 J 4, 4'-DDT 0.48 J
TR1440	DCA-05	2	0/2	2/1/2002	heptachlor epoxide 0.01 UJ α-Chlordane 0.01 UJ γ-Chlordane 0.01 UJ 4, 4'-DDD 0.02 UJ 4, 4'-DDE 0.045 J 4, 4'-DDT 0.02 UJ

USEPA SAMPLE ID	FIELD SAMPLE ID	SAMPLE DEPTH (ft bgs)	EXCAVATION DEPTH (ft bgs)	DATE SAMPLED	Analytical Detections (mg/kg)
			DCA-06		
TR1443	**DCA-06**	**0**	**2**	**2/1/2002**	heptachlor epoxide 0.0085 UJ α-Chlordane 0.0085 UJ γ-Chlordane 0.0085 UJ 4, 4'-DDD 0.017 UJ **4, 4'-DDE 2.8 J** 4, 4'-DDT 0.26 J
TR1444	DCA-06	2	2	2/1/2002	heptachlor epoxide 0.0078 UJ α-Chlordane 0.0078 UJ γ-Chlordane 0.0078 UJ 4, 4'-DDD 0.016 UJ 4, 4'-DDE 0.016 UJ 4, 4'-DDT 0.016 UJ
			DCA-08		
TR1451	**DCA-08**	**2**	**4**	**2/1/2002**	**heptachlor epoxide 0.086 U** α-Chlordane 0.95 N **γ-Chlordane 14 JN** **4, 4'-DDD 1200 J** **4, 4'-DDE 140 J** **4, 4'-DDT 24 JN**
TR1452	DCA-08	4	4	2/1/2002	heptachlor epoxide 0.0071 UJ α-Chlordane 0.0071 UJ γ-Chlordane 0.0071 UJ 4, 4'-DDD 0.76 J 4, 4'-DDE 0.54 J 4, 4'-DDT 0.34 J
			DCA-09/ DCA-033		
TR1454	**DCA-09**	**0**	**2/4/6**	**2/1/2002**	**heptachlor epoxide 0.076 U** α-Chlordane 0.52 D **γ-Chlordane 2.5 N** **4, 4'-DDD 230 J** **4, 4'-DDE 90 J** **4, 4'-DDT 2.3 D**
TR1455	**DCA-09**	**2**	**2/4/6**	**2/1/2002**	**heptachlor epoxide 0.087 U** α-Chlordane 0.39 N **γ-Chlordane 3.4 JN** **4, 4'-DDD 35 J** **4, 4'-DDE 55 J** 4, 4'-DDT 0.18 U
EL036	DCA-033	2	2/4/6	02/25/2008	heptachlor epoxide 0.0012 α-Chlordane 0.00056 γ-Chlordane 0.00023 4, 4'-DDD <0.00027 4, 4'-DDE 0.0032 4, 4'-DDT 0.00048

USEPA SAMPLE ID	FIELD SAMPLE ID	SAMPLE DEPTH (ft bgs)	EXCAVATION DEPTH (ft bgs)	DATE SAMPLED	Analytical Detections (mg/kg)
TR1456	DCA- 09	4	2/4/6	2/1/2002	heptachlor epoxide 0.0068 UJ α-Chlordane 0.0068 UJ γ-Chlordane 0.0068 UJ 4, 4'-DDD 0.11 J 4, 4'-DDE 0.14 J 4, 4'-DDT 0.014 UJ
TR1457	DCA- 09	6	2/4/6	2/1/2002	heptachlor epoxide 0.0069 UJ α-Chlordane 0.0069 UJ γ-Chlordane 0.0069 UJ 4, 4'-DDD 0.014 UJ 4, 4'-DDE 0.014 UJ 4, 4'-DDT 0.014 UJ
DCA-10/ DCA-038					
TR1458	**DCA- 10**	**2**	**4/6/10**	**2/1/2002**	**heptachlor epoxide 0.15 D** **α-Chlordane 1.6 J** **γ-Chlordane 3.8 JN** **4, 4'-DDD 140 J** **4, 4'-DDE 100 J** **4, 4'-DDT 51 J**
TR1460	**DCA-10**	**4**	**4/6/10**	**2/1/2002**	heptachlor epoxide 0.0076 UJ α-Chlordane 0.0076 UJ γ-Chlordane 0.037 J **4, 4'-DDD 3.9 J** **4, 4'-DDE 1.9 J** **4, 4'-DDT 20 J**
TR1461	**DCA-10D**	**4**	**4/6/10**	**2/1/2002**	heptachlor epoxide 0.007 UJ α-Chlordane 0.007 UJ γ-Chlordane 0.007 UJ 4, 4'-DDD 0.42 J 4, 4'-DDE 0.69 J **4, 4'-DDT 6.2 J**
EL041	DCA-038	4	4/6/10	02/25/2008	heptachlor epoxide NA α-Chlordane NA γ-Chlordane NA 4, 4'-DDD 0.420 4, 4'-DDE 0.950 4, 4'-DDT 0.530
TR1462	DCA-10	6	4/6/10	2/1/2002	heptachlor epoxide 0.0072 UJ α-Chlordane 0.0072 UJ γ-Chlordane 0.0072 UJ 4, 4'-DDD 0.015 UJ 4, 4'-DDE 0.015 UJ 4, 4'-DDT 0.015 UJ
DCA-12					
TR1468	**DCA-12**	**0**	**2/6/10**	**2/4/2002**	**heptachlor epoxide 0.9 N** **α-Chlordane 540 J** **γ-Chlordane 930 NJ** **4, 4'-DDD 560 NJ** **4, 4'-DDE 1200 J** **4, 4'-DDT 6000 J**

USEPA SAMPLE ID	FIELD SAMPLE ID	SAMPLE DEPTH (ft bgs)	EXCAVATION DEPTH (ft bgs)	DATE SAMPLED	Analytical Detections (mg/kg)
TR1469	DCA-12	2	2/6/10	2/4/2002	**heptachlor epoxide 0.2** α-Chlordane 0.59 D γ-Chlordane 0.86 4, 4'-DDD 0.87 D **4, 4'-DDE 6.1 J** **4, 4'-DDT 11 J**
TR1470	DCA-12	4	2/6/10	2/4/2002	heptachlor epoxide 0.0069 UJ α-Chlordane 0.0069 UJ γ-Chlordane 0.0069 UJ 4, 4'-DDD 0.014 UJ 4, 4'-DDE 0.1 J 4, 4'-DDT 0.063 J
TR1471	DCA-12	6	2/6/10	2/4/2002	heptachlor epoxide 0.0068 UJ α-Chlordane 0.0068 UJ γ-Chlordane 0.0068 UJ 4, 4'-DDD 0.014 UJ 4, 4'-DDE 0.014 UJ 4, 4'-DDT 0.059 J
DCA-13					
TR1472	**DCA-13**	**0**	**2/10**	**2/4/2002**	**heptachlor epoxide 0.078 U** α-Chlordane 0.7 NJ **γ-Chlordane 3.5 NJ** **4, 4'-DDD 4.2 J** **4, 4'-DDE 42 J** **4, 4'-DDT 15 J**
TR1473	DCA-13	2	2/10	2/4/2002	heptachlor epoxide 0.0085 UJ α-Chlordane 0.0085 UJ γ-Chlordane 0.0085 UJ 4, 4'-DDD 0.017 UJ 4, 4'-DDE 0.032 J 4, 4'-DDT 0.07 J
DCA-15					
TR1480	**DCA-15**	**0**	**2**	**2/4/2002**	heptachlor epoxide 0.0075 UJ α-Chlordane 0.14 J γ-Chlordane 0.16 J 4, 4'-DDD 0.089 J **4, 4'-DDE 2.1 J** **4, 4'-DDT 1.7 J**
TR1481	DCA-15	2	2	2/4/2002	heptachlor epoxide 0.0069 UJ α-Chlordane 0.0079 J γ-Chlordane 0.0086 J 4, 4'-DDD 0.015 J 4, 4'-DDE 0.1 J 4, 4'-DDT 0.25 J
DCA-16					
TR1485	**DCA-16**	**0**	**2/4**	**2/4/2002**	**heptachlor epoxide 2.1 JN** **α-Chlordane 76 D** **γ-Chlordane 74 D** **4, 4'-DDD 11 J** **4, 4'-DDE 370 D** **4, 4'-DDT 420 D**

USEPA SAMPLE ID	FIELD SAMPLE ID	SAMPLE DEPTH (ft bgs)	EXCAVATION DEPTH (ft bgs)	DATE SAMPLED	Analytical Detections (mg/kg)
TR1486	**DCA-16**	**2**	**2/4**	**2/4/2002**	**heptachlor epoxide 0.14** **α-Chlordane 1.6 JN** **γ-Chlordane 2.9 J** **4, 4'-DDD 3.8 J** **4, 4'-DDE 300 J** **4, 4'-DDT 84 J**
EL039	DCA-036	2	2/4	02/25/2008	heptachlor epoxide <0.00064 α-Chlordane <0.0006 γ-Chlordane 0.0019 J 4, 4'-DDD 0.022 4, 4'-DDE 0.280 4, 4'-DDT 0.110
TR1487	DCA-16	4	2/4	2/4/2002	heptachlor epoxide 0.0066 UJ α-Chlordane 0.0066 UJ γ-Chlordane 0.0066 UJ 4, 4'-DDD 0.058 J 4, 4'-DDE 0.75 J 4, 4'-DDT 0.27 J
			DCA-1, -1D		
TR1490	**DCA-1**	**0**	**2**	**2/4/2002**	heptachlor epoxide 0.037 NJ α-Chlordane 0.42 J γ-Chlordane 0.42 J 4, 4'-DDD 0.59 J **4, 4'-DDE 32 J** **4, 4'-DDT 17 J**
TR1491	**DCA-1D**	**0.5**	**2**	**2/4/2002**	heptachlor epoxide 0.02 J α-Chlordane 0.1 J γ-Chlordane 0.17 J 4, 4'-DDD 0.8 J **4, 4'-DDE 6.6 J** **4, 4'-DDT 3.4 J**
TR1492	DCA-1	2	2	2/4/2002	heptachlor epoxide 0.0067 UJ α-Chlordane 0.042 J γ-Chlordane 0.05 J 4, 4'-DDD 0.13 J 4, 4'-DDE 0.87 J 4, 4'-DDT 0.63 J
			DCA-18		
TR1921	DCA-18	0	0/2	4/12/2005	heptachlor epoxide 0.011 U α-Chlordane 0.046 γ-Chlordane 0.075 4, 4'-DDD 0.25 4, 4'-DDE 0.85 4, 4'-DDT 0.78
			DCA-19		
TR1922	DCA-19	0	0/2	4/12/2005	heptachlor epoxide 0.011 U α-Chlordane 0.011 U γ-Chlordane 0.011 U 4, 4'-DDD 0.022 U 4, 4'-DDE 0.028 4, 4'-DDT 0.021 J

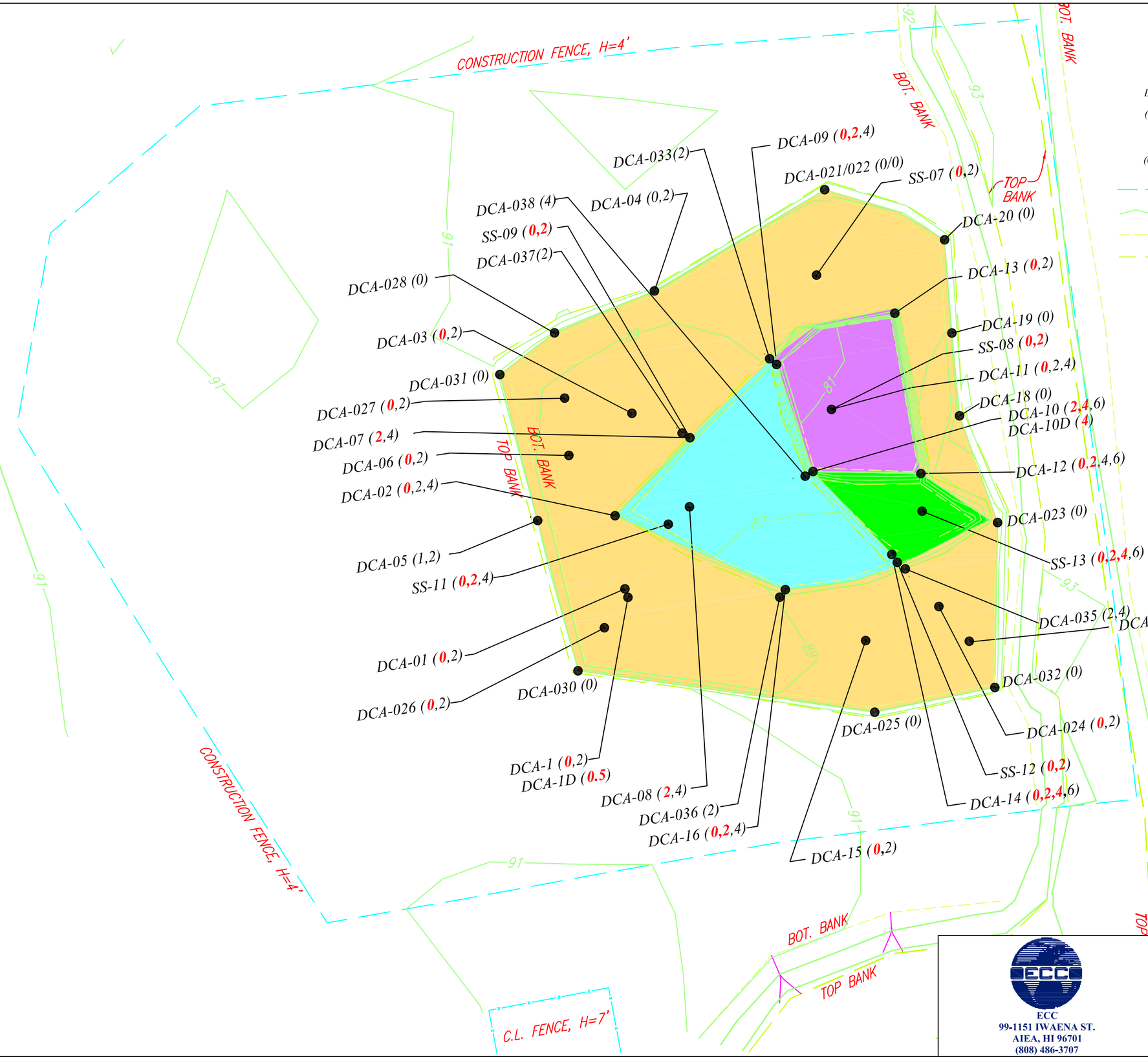
USEPA SAMPLE ID	FIELD SAMPLE ID	SAMPLE DEPTH (ft bgs)	EXCAVATION DEPTH (ft bgs)	DATE SAMPLED	Analytical Detections (mg/kg)
			DCA-20		
TR1923	DCA-20	0	0/2	4/12/2005	heptachlor epoxide 0.011 U α-Chlordane 0.011 U γ-Chlordane 0.011 U 4, 4'-DDD 0.022 U 4, 4'-DDE 0.04 4, 4'-DDT 0.043
			DCA-021		
EL001	DCA-021	0	0/2	7/2/2007	heptachlor epoxide <0.00563 α-Chlordane <0.00636 γ-Chlordane 0.0282 4, 4'-DDD <0.00569 4, 4'-DDE 0.610 4, 4'-DDT 0.0975
			DCA-022		
EL002[(a)]	DCA-022	0	0/2	7/2/2007	heptachlor epoxide <0.0112 α-Chlordane <0.0127 γ-Chlordane 0.0430 4, 4'-DDD <0.0114 4, 4'-DDE 0.941 4, 4'-DDT 0.107
			DCA-023		
EL003	DCA-023	0	0/6	7/2/2007	heptachlor epoxide <0.0113 α-Chlordane 0.0115 γ-Chlordane 0.0119 4, 4'-DDD <0.0114 4, 4'-DDE 0.0390 4, 4'-DDT 0.00883
			DCA-024		
EL004	**DCA-024**	**0**	**2**	**7/2/2007**	**heptachlor epoxide <0.0562** α-Chlordane 0.140 γ-Chlordane 0.260 4, 4'-DDD <0.0114 **4, 4'-DDE 6.180** 4, 4'-DDT 1.460
EL019	DCA-024	2	2	8/2/2007	heptachlor epoxide <0.00104 α-Chlordane NA γ-Chlordane NA 4, 4'-DDD NA 4, 4'-DDE 0.0670 4, 4'-DDT NA
			DCA-025		
EL005	DCA-025	0	0/2	7/2/2007	heptachlor epoxide <0.0113 α-Chlordane 0.325 γ-Chlordane 0.444 4, 4'-DDD 0.607 4, 4'-DDE 1.250 4, 4'-DDT 0.400

USEPA SAMPLE ID	FIELD SAMPLE ID	SAMPLE DEPTH (ft bgs)	EXCAVATION DEPTH (ft bgs)	DATE SAMPLED	Analytical Detections (mg/kg)
			DCA-026		
EL006	**DCA-026**	**0**	**2**	**7/2/2007**	**heptachlor epoxide <0.0566** α-Chlordane <0.0638 γ-Chlordane 0.243 4, 4'-DDD 0.173 **4, 4'-DDE 5.550** **4, 4'-DDT 2.650**
EL022	DCA-026	2	2	8/2/2007	heptachlor epoxide <0.00105 α-Chlordane NA γ-Chlordane NA 4, 4'-DDD NA 4, 4'-DDE <0.00210 4, 4'-DDT <0.00210
			DCA-027		
EL007	**DCA-027**	**0**	**2**	**7/2/2007**	**heptachlor epoxide <0.0562** α-Chlordane <0.0634 γ-Chlordane <0.0629 4, 4'-DDD <0.0567 **4, 4'-DDE 2.410** 4, 4'-DDT <0.0686
EL025	DCA-027	2	2	8/2/2007	heptachlor epoxide <0.0216 α-Chlordane NA γ-Chlordane NA 4, 4'-DDD NA 4, 4'-DDE 0.379 4, 4'-DDT NA
			DCA-028		
EL008	DCA-028	0		7/2/2007	heptachlor epoxide <0.00112 α-Chlordane <0.00127 γ-Chlordane 0.00303 4, 4'-DDD 0.00404 4, 4'-DDE 0.0411 4, 4'-DDT 0.0289
			DCA-029		
EL009	**DCA-029**	**0**	**2**	**7/23/2007**	heptachlor epoxide <0.0207 α-Chlordane 0.0146 γ-Chlordane 0.0142 4, 4'-DDD 0.0596 **4, 4'-DDE 1.740** 4, 4'-DDT 0.583
EL016	DCA-029	2	2	8/2/2007	heptachlor epoxide NA α-Chlordane NA γ-Chlordane NA 4, 4'-DDD NA 4, 4'-DDE 0.0564 4, 4'-DDT NA

USEPA SAMPLE ID	FIELD SAMPLE ID	SAMPLE DEPTH (ft bgs)	EXCAVATION DEPTH (ft bgs)	DATE SAMPLED	Analytical Detections (mg/kg)
			DCA-030		
EL010	DCA-030	0	0/2	7/23/2007	heptachlor epoxide <0.0210 α-Chlordane 0.0284 γ-Chlordane 0.0311 4, 4'-DDD <0.0421 4, 4'-DDE 1.210 4, 4'-DDT 0.241
			DCA-031		
EL011	DCA-031	0	0/2	7/23/2007	heptachlor epoxide <0.0203 α-Chlordane <0.0203 γ-Chlordane <0.0203 4, 4'-DDD <0.0405 4, 4'-DDE 0.200 4, 4'-DDT 0.0753
			DCA-032		
EL012	DCA-032	0	0/2	8/2/2007	heptachlor epoxide <0.0211 α-Chlordane 0.0728 γ-Chlordane 0.0763 4, 4'-DDD 0.0915 4, 4'-DDE 0.628 4, 4'-DDT 0.211
EL028[(a)]	DCA-032	0	0/2	8/2/2007	heptachlor epoxide <0.0208 α-Chlordane 0.115 γ-Chlordane 0.114 4, 4'-DDD 0.0552 4, 4'-DDE 0.978 4, 4'-DDT 0.360

Notes:
All results reported in milligrams per kilogram (mg/kg). All reported sample concentrations represent dry sample weight.
ID – Identification.
N/A – not available.
ND – not detected at or above method detection limit.
NA – not analyzed.
ft bgs – feet below ground surface.
U – The analyte of interest was not detected to the limit of detection indicated.
J – The reported value was obtained from a reading that was less than the Contract Required Detection Limit but greater than or equal to the Instrument Detection Limit. If the analyte was analyzed for but not detected, a "U" shall be entered. (Inorganic Analyses).
Results in bold indicate concentrations exceed residential cleanup criteria.

As discussed in Section 1.2, re-evaluation of some historical data resulted in a change in the reported levels of constituents at sample location DCA-12. A the 2-ft bgs sample depth, heptachlor epoxide, 4,4'-DDE, and 4,4'-DDT are present above cleanup goals. This situation is addressed in Section 4.0.



LEGEND

DCA-03	SAMPLE LOCATION AND ID
(0)	SAMPLE DEPTH WITH ONE OR MORE ANALYTES OF ORGANOCHLORINE PESTICIDES DETECTED AT A CONCENTRATION GREATER THAN ITS RESPECTIVE USEPA RESIDENTIAL PRG.
(0)	SAMPLE DEPTH WITH ALL ANALYTES OF ORGANOCHLORINE PESTICIDES AT CONCENTRATIONS BELOW THE RESPECTIVE USEPA RESIDENTIAL PRGS.
	EXCLUSION ZONE
87	POST CONSTRUCTION CONTOUR LINES
	POST CONSTRUCTION BOTTOM BANK
	POST CONSTRUCTION TOP BANK
	EXCAVATION AREA – DEPTH 2 FT.
	EXCAVATION AREA – DEPTH 4 FT.
	EXCAVATION AREA – DEPTH 6 FT.
	EXCAVATION AREA – DEPTH 10 FT.

ECC
99-1151 IWAENA ST.
AIEA, HI 96701
(808) 486-3707

DRAWN BY: JOHN BITTER
APPROVED BY: LEILI ARJOMAND
DATE: 10/8/2008
SIZE: B

DEPARTMENT OF THE NAVY — NAVAL FACILITIES ENGINEERING COMMAND

NAVFAC HAWAII
PEARL HARBOR, HI

REMOVAL ACTION AT FORMER
DRUM CRUSHING AREA
FORMER NAVAL AIR STATION BARBERS POINT
OAHU, HAWAII

FIGURE 2-3 ORGANOCHLORINE PESTICIDES DELINEATION

NAVFAC HAWAII CONTRACT #: N62742-02-D-1800

SCALE: AS NOTED | FILENAME: FIG 2-3 REV 10 08 08.DWG | SHEET: 1 OF 1

T:\Projects by Contract\Contracts\NAVFAC Pacific FRAC N62742-02-D-1800\5440.001 thermal BP\H- Reports and Submittals\Former Drum Crushing Area 4 13 07\Revised 1 30 08 Michael Hu\Revised 7 17 08\Fig 2-3 Rev 10 08 08.dwg

2.5 MOBILIZATION AND SITE PREPARATION

Upon acceptance of the final pre-construction submittals, Contractor personnel and equipment were mobilized for Site operations between December 17 and 20, 2007. A Hitachi Zaxis 75US Excavator, John Deere 544J Loader, and Caterpillar TH360B Telescopic Forklift were mobilized to the Site. Incoming equipment inspections were performed by Contractor personnel upon receipt of the heavy equipment. A tool trailer was mobilized and staged as agreed upon during the pre-mobilization site survey. The Site work zones were delineated using orange safety fencing and proper signage, and the Exclusion Zone (EZ) to the Support Zone (SZ) were established **(Photo 7)**. Stockpile and packaged soil staging areas with respect to the work area were determined and established. Lighted barricades were deemed necessary and procured because early morning access to the Site would be required by Facility and Contractor personnel.

A personnel decontamination station was also established near the south end of the EZ. The equipment storage area was established in the SZ. Health and safety equipment, including a first aid kit, fire extinguishers, an eye wash station, decontamination tubs, drinking water, a portable toilet, and other supplies, were staged at the Site in preparation for the work to follow.

2.6 VEGETATION CLEARING

On December 17, 2007, Contractor personnel began to clear the former DCA of low-lying grasses using gasoline powered line trimmers **(Photo 8)**. Small kiawe (*Prosopis pillida*) trees and haole koa (*Leucaena leucocephal*) shrubs were cut by hand at approximately six inches above the ground using machetes. This initial clearing was conducted to give the land surveyors an unobstructed view of pre-existing and new sample locations when performing their pre-excavation land survey. Impacted soil and root masses, within the limits of the Site, were not disturbed. The hand-cleared vegetation was stockpiled onsite by Contractor personnel.

On December 20, 2007, Contractor personnel using a Hitachi Zaxis 75US excavator and a Deere 544J loader completed the final portion of clearing by carefully felling the remaining larger kiawe trees **(Photo 9)**. These larger felled trees along with the other smaller trees and shrubs were stockpiled, along with green waste created by on-going Facility operations, in an area designated by Facility personnel. The remainder of the grasses, tree stumps and root masses were considered to be impacted and thus were excavated, removed and disposed of with the impacted soils as part of the RA.

2.7 PRE-EXCAVATION LAND SURVEY

On December 18 and 20, 2007, Contractor QC personnel provided oversight during a pre-excavation land survey **(Photo 10)**. The purpose of the survey was threefold:

1. Re-establish key sampling locations from the four previous site investigations and establish additional sampling locations created during the current delineation assessment to serve as the lateral limits of soil excavation for the current removal action;
2. Establish a benchmark at the Site referenced to the North American Datum of 1983 (NAD83), accurate to one-quarter meter, plus or minus; and
3. Capture the pre-excavation topographic contour of the Site.

The survey was performed by a licensed land surveyor, and the results are presented as **Figure 1-2**. The key sampling locations from the previous site investigations were re-established at the Site using wooden

stakes, so that the limits of the removal action would be clearly discernable **(Figure 1-3)**. Additional wooden stakes were used to mark the newly acquired delineation points established during the pre-excavation delineation assessment **(Figure 2-1)**.

2.8 EXCAVATION AND PACKAGING OF IMPACTED SOIL

Between December 20, 2007 and January 10, 2008, Contractor personnel excavated and packaged arsenic and OCP-impacted soil. The excavation design was broken down into four distinct excavation areas based on final excavation depth (2-foot, 4-foot, 6-foot and 10-foot) **(Figure 2-1)**. The first area (Group 1) was excavated from 0-4 ft bgs and is located in the center of the Site. Group 1 soil is depicted in Figure 2-1 by the area colored in blue, purple and green, and includes only the soil from 0-4 ft bgs. The second area was excavated from 4-6 ft bgs and the third area was excavated from 4-10 ft bgs. Theses areas are depicted in Figure 2-1 as the green and purple areas, respectively. Because of the depth from which these soils were excavated, they were stockpiled together and formed Group 2 soil. The fourth area was excavated from 0-2 ft bgs, is depicted in Figure 2-1 as the yellow area and form Group 3 soil. Group 3 soils were stockpiled separate from Group 2 soil.

Group 1 soil was characterized for disposal based on analytical data gathered during the four previous site investigations, thus was excavated and directly packaged rather than stockpiled. Group 2 and Group 3 stockpiles were sampled by subcontractor personnel for waste characterization prior to being packaged. Further discussion of the packaging of the impacted soil in discussed below in this section. Discussion of stockpile sampling for waste characterization is provided in Section 3 of this RVR.

2.8.1 Excavation and Direct Packaging of Group 1 Soils

Between December 20 and 27, 2007, Contractor personnel excavated and loaded 117 bulk packages of Group 1 soil. Waste profiling was completed for this soil prior to excavating per the analytical results gathered during the four previous site investigations. This allowed the soil to be directly packed rather than stockpiled, sampled, and characterized **(Photo 11)**. The Group 1 soil was directly packaged into one cubic yard bulk packages by scooping in-situ soil using a Hitachi Zaxis 75US excavator and loading the scooped soil into the bulk packages through a hopper. The bulk packages were held in place beneath the hopper using a Caterpillar TH360B Telescopic Forklift. The packaged soil was closed with the attached securing string, placed on wooden pallets, staged in the designated area, and covered with polyethylene sheeting. The packaged soils remained staged onsite awaiting USEPA provisional identification number and final off-island transport and disposal.

2.8.2 Excavation, Stockpiling and Packaging of Group 2 and Group 3 Soils

Between December 28, 2007 and January 10, 2008, Contractor personnel excavated and stockpiled soil from Group 2 and Group 3. A Hitachi excavator was fitted with a hydraulic hammer to break in-situ consolidated coralline sands from Group 2. The hydraulic hammer was interchanged with the bucket attachment to remove the loose material from the excavation and a John Deere 544J loader was used to stockpile the excavated soils on 10-mil polyethylene sheeting. The Group 3 soil was excavated with the Hitachi excavator and stockpiled separately on 10-mil polyethylene sheeting using the John Deere loader **(Photo 12)**. Once excavation activities were completed, the two stockpiles were covered with 10-mil polyethylene sheeting **(Photo 13)**. Subcontractor personnel collected soil samples from each of the stockpiles to characterize the soil for waste disposal options.

Upon collection of the waste characterization samples, Contractor personnel began packaging the two segregated soil stockpiles. The soil were packaged into one cubic yard bulk packages by scooping

stockpiled soils with the excavator bucket and loading the scooped soils into the bulk packages through a hopper **(Photo 14)**. The bulk packages were held in place beneath the hopper using a Caterpillar TH360B Telescopic Forklift. The packaged soils were closed with the attached securing string, placed on wooden pallets, staged in the designated area, and covered with polyethylene sheeting. A total of 63 bulk packages from Group 2 and 123 bulk packages from Group 3 were packaged and staged awaiting offsite transport and off-island disposal.

2.9 POST-EXCAVATION SURVEY

On January 7, 2008, a post-excavation survey was performed. The purpose of the post-excavation survey was to record the post-excavation topographic contour at the Site to ensure all of the impacted soil had been excavated and removed **(Photo 15)**.

2.10 SITE RESTORATION

Between January 14 and 16, 2008, Contractor personnel performed Site restoration activities. A source pile of imported fill material was identified at a nearby construction site. The backfill source material was certified clean through analytical testing of arsenic and pesticides for previous Contractor CTOs, therefore no additional testing was performed on the fill material for this CTO. Laboratory analytical results for the source material are provided in Appendix B. The clean fill material was trucked to the Site and stockpiled within close proximity to the excavation area.

Contractor personnel used the Hitachi Zaxis 75US excavator to cut an access way to the deeper excavations and began backfilling. Contractor personnel used the John Deere 544J loader to place clean fill in the excavation and used the excavator tracks to compact the fill. A Dynapac CC 142 compactor was used to compact fill to required compaction **(Photo 16)**. The fill material was placed in eight-inch lifts and compacted until the entire Site was backfilled **(Photo 17)**. Subcontractor personnel performed one density test per contract specification. Test results indicated that compaction was 100% of maximum dry density and met the requirements of the contract specifications for common fill placement of 90%.

2.11 REPACKAGING AND REWEIGHING OF PACKAGED SOILS

While awaiting USEPA approval of the packaged soil and receipt of an interim USEPA identification number, some of the bulk sacks containing the soil began deteriorating. The material of some of the bulk packages was found to be very brittle due to exposure to site conditions such as wind and sunlight. Furthermore, the rated capacity of some of the bulk sacks of soil was exceeded requiring repackaging and reweighing. Based on the weight and condition of the bulk packages of soil, repackaging and reweighing would be necessary prior to off-island transport and disposal of the waste.

Each package was inspected for weight and material integrity. If the bulk package was damaged in any way, the soil was staged in a stockpile and completely repackaged. If the bulk package was intact, but exceeded the package's rated capacity of 1,000 kilograms or 2,200 pounds, the packaged soil was placed in a larger bulk package **(Photo 18)**. These larger bulk packages measured 42 inches in length, width and height, and were rated for 1,361 kilograms or 3,000 pounds. Finally, if the bulk packages were in good condition and met the weight requirement for the one cubic yard bulk packages, these bulk packages were staged pending loading into shipping containers for off-island transportation and disposal.

Between March 24 and April 2, 2008, Contractor personnel inspected and reweighed all packaged soil at the Site. Based on the criteria listed above, the majority of the packaged soils were repackaged either in the larger bulk packages or new, one cubic yard packages. During the repackaging effort, each bulk

package was weighed as soil was loaded to assure compliance with the rated capacity of the two types of bulk packages being used. A total of 327 bulk packages of arsenic and OCP-impacted soil, equating to 383 tons of RCRA Hazardous Waste were staged onsite awaiting off-island transport and disposal.

3. WASTE MANAGEMENT

Investigation Derived Waste (IDW) generated during the RA included arsenic and OCP-impacted soil, green waste, suspect asbestos containing material, waste PPE and sampling equipment, and miscellaneous municipal wastes. All IDW was properly characterized as necessary, classified, and disposed or recycled in accordance with NAVFAC Hawaii SOPs (2007); and in accordance with state and federal regulations.

3.1 PACKAGED RCRA HAZARDOUS WASTE

The arsenic and OCP-impacted soil excavated and packaged during the removal action was characterized either by historical data gathered from previous site investigations or from soil stockpile sampling. Group 1 soil was characterized and profiled based on historical data. Group 2 and Group 3 soil was characterized and profiled by collecting and analyzing soil stockpile samples. Subcontractor personnel collected two stockpile samples and analyzed them for OCP using USEPA Method 8081, total arsenic using EPA 7000 series, and toxicity characteristic leaching procedure (TCLP) arsenic using USEPA 1311. Only COCs associated with OCP were detected at concentrations exceeding regulatory limits. Total and TCLP arsenic were not detected at or above their respective method detection limits.

Based on historical data for Group 1 soil and analytical results for the Group 2 and Group 3 stockpile samples, soil profiles were completed and submitted to a RCRA- and CERCLA-approved disposal facility, Chemical Waste Management of the Northwest located in Arlington, Oregon. The waste profiles were reviewed and the waste was accepted by the waste management company as RCRA Hazardous Waste. The acceptance letters and waste profiles are included in **Appendix D**. The disposal facility accepted the waste for bioremediation treatment and subsequent landfilling.

The RCRA Hazardous Waste was transported and disposed of in accordance with USEPA and U.S. Department of Transportation regulations. The packaged soil was loaded into UN-rated bulk sacks, each of which was placed on wooden pallets. Each bulk sack was weighed using a pallet scale, and the weight recorded on a container loading form. USEPA Hazardous Waste and Class 9 Waste Marks were placed on each individual sack **(Photo 19)**. Each Class 9 Mark displayed the waste code “NA3077”.

Bulk sacks were loaded into 40-foot shipping containers for transportation and disposal purposes. Shipping container numbers and weights were noted on the container loading forms, and the information transferred to waste manifests and bills of lading for each container. Each shipping container had a separate uniform hazardous waste manifest form, which was kept with the waste shipment during the entire transportation process. Shipping containers containing hazardous wastes were labeled with USEPA Hazardous Waste and Class 9 Waste Labels on all four sides of each container **(Photo 20)**. Each Class 9 Label displayed the waste code “NA3077”.

Shipping containers were transported to Honolulu Harbor using licensed waste transporters. The RCRA Hazardous Waste was shipped via Northland Services. The shipping containers were then transported inland using licensed waste transporters, and disposed of at a RCRA- and CERCLA-approved landfill, specifically, Chemical Waste Management of the Northwest located in Arlington, Oregon. Waste manifests, including generator, transporter and disposal facility signatures, are presented as Appendix D.

3.2 GREEN WASTE

As previously discussed, Contractor personnel performed clearing at the Site between December 17 and 20, 2007. Small kiawe trees and haole koa shrubs were cut by hand at approximately six inches above the ground using machetes. The larger trees were carefully felled using the Hitachi excavator. Impacted soil and root masses were not disturbed. The hand-cleared vegetation and felled trees were stockpiled onsite along with green waste generated at the Facility for onsite recycling. The remainder of the grasses, tree stumps and root masses were considered to be impacted and thus were excavated, removed and disposed of with the impacted soils as part of the RA.

3.3 SUSPECT ASBESTOS CONTAINING MATERIAL

During excavation and packaging of impacted soil, several large pieces of suspect ACM were unearthed **(Photo 21)**. Based on color and appearance, the suspect asbestos-cement product was assumed to be Transite® panels and was treated as ACM. Approximately 362 pounds of Transite® panels were removed from the subsurface with the bucket of the closed-cab Hitachi excavator and placed in a one cubic yard bulk package. The bulk package was wrapped with double layer 6-mil polyethylene sheeting, goose-necked, secured with spray adhesive and duct tape, manifested, labeled and disposed of on-island at PVT Land Company **(Photo 22)**. A copy of the waste manifest is provided in Appendix D.

3.4 WASTE PPE, SAMPLING EQUIPMENT AND MISCELLANEOUS MUNICIPAL WASTE

Waste PPE, sampling equipment and miscellaneous municipal waste were evaluated in accordance with NAVFAC Pacific SOP 1-A-6 (NAVFAC Pacific 2007). All waste PPE, sampling equipment and miscellaneous municipal waste was visibly clean, and therefore did not require further characterization. This waste was disposed on-island at Waimanalo Gulch Sanitary Landfill.

3.5 WASTE DISPOSAL

All IDW was disposed or recycled in accordance with NAVFAC Pacific SOPs (2007); and in accordance with state and federal regulations. CERCLA wastes were disposed at CERCLA-approved landfills on the U.S. Mainland, while non-CERCLA wastes were recycled on Site, or were disposed at a local Subtitle D landfill.

Table 3-1 presents the different waste streams on the Site, their waste classifications, quantities, and disposal or recycling locations.

Table 3-1: Summary of Waste Streams

Media	Source	CERCLA Waste?	Quantity	Location of Disposal
RCRA Hazardous Waste	Site excavation areas	Yes	383 tons	Chemical Waste Management of the Northwest 17629 Cedar Springs Lane Arlington, OR 97812 Ph. #(541) 454-2030 US EPA ID #ORD980462353
Green Waste	Site footprint	No	NA	Recycled onsite
Suspect Asbestos Containing Material (Transite® Panels)	Northwest area of 0-2' excavation	No	362 pounds	PVT Land Company, Ltd. 87-2020 Farrington Hwy. Waianae, HI. 96792 Ph.# (808) 668-4561

Media	Source	CERCLA Waste?	Quantity	Location of Disposal
Waste PPE and Sampling Equipment	Waste packaging and excavation sampling activities	No	not applicable	Waimanalo Gulch Sanitary Landfill 92-460 Farrington Hwy. Kapolei, HI. 96707 Ph.# (808) 668-4640
Misc. Municipal Waste	Site activities	No	not applicable	Waimanalo Gulch Sanitary Landfill 92-460 Farrington Hwy. Kapolei, HI. 96707 Ph.# (808) 668-4640

Notes:
RCRA– Resource Conservation Recovery Act

4. SUMMARY, CONCLUSIONS and RECOMMENDATIONS

A CERCLA removal action was performed at the former Drum Crushing Area, Former NAS Barbers Point, Oahu, Hawaii, under FRAC Contract N62742-02-D-1800, CTO 0001. The purpose of the removal action was to excavate and dispose of soil impacted with the OCPs and arsenic. The project cleanup goals for the OCPs and arsenic represent the USEPA Region IX Residential PRGs.

The removal action, including a pre-excavation delineation assessment was conducted from August 2007 through April 2008. During the delineation assessment, surface and subsurface soil samples were collected and analyzed for OCP and arsenic to delineate the Site with respect to the project cleanup goals. Analytical results from the delineation assessment along with data from four previous site investigations were used to design the final excavation limits.

Vegetation within the footprint of the excavation area was cleared to facilitate pre-excavation land survey and excavation. Larger trees and shrubs were cut at their base and recycled onsite with other green waste. The tree and shrub stumps along with their root masses were considered contaminated, thus were excavated and packaged with the impacted soil. A pre-excavation survey was performed by a licensed land surveyor, to re-establish key sampling points, to establish new delineation sampling points, and to document pre-excavation topographic contours. At the conclusion of excavation activities, a post-excavation survey was conducted to record changes in the topographic contour at the Site and to ensure all of the impacted soil had been excavated and removed.

Soil within the footprint of the site was divided into three groups for waste characterization purposes. Group 1 soils were excavated from 0-4’ bgs, were profiled using historical data, thus were packaged directly into one cubic yard bulk sacks. Group 2 soils were excavated from 4-6’ and 4-10’ bgs, were stockpiled and sampled for waste characterization prior to being packaged in bulk sacks. Group 3 soils were excavated from 0-2’ bgs, were also stockpiled and sampled for waste characterization prior to being packaged in bulk sacks. A total of 117 bulk sacks were excavated and packaged from Group 1, 63 from Group 2 and 123 from Group 3, totaling 303 bulk packages excavated and packaged. The packaged soils were staged onsite and covered with poly sheeting.

While awaiting final approval on a provisional USEPA identification number, the packaging material began to deteriorate in the sunlight, and concerns about the maximum rated capacity of each bulk sack were identified. Contractor personnel inspected all bulk packages of soil and repackaged and/or reweighed prior to loading into 40-foot shipping containers. A total of 323 bulk packages of RCRA Hazardous Waste, were manifested and loaded into 16, 40-foot shipping containers for disposal on the U.S. Mainland. Soil removed from the Site was disposed at a RCRA- and CERCLA-approved landfill. In total, 383 tons of RCRA Hazardous Waste was disposed of at the certified landfill.

In addition to the soil that was excavated and removed from the Site, other wastes generated during remediation activities, including suspect asbestos containing Transite® panels, PPE and sampling equipment, and miscellaneous municipal wastes. These were classified as non-CERCLA wastes, and were disposed at on-island Subtitle D landfills.

In preparation of this RVR, data verification was performed for previously collected data at the former DCA. During this review, a discrepancy was discovered for the 2-foot sample (004TR1469) collected at sampling location DCA-12 in 2002. The results initially reported for 004TR1469 indicated that all of the OCPs were below site specific cleanup goals; however, verification of these results using Navy archived analytical data determined that both OCP and arsenic levels in 004TR1469 actually exceeded cleanup goals. Although the cleanup of the former DCA in the immediate area of sample DCA-12 was based on the initial results reported for 004TR1469 (that did not exceed the cleanup goals), this situation is not a concern for the following reasons:

- The vertical delineation of OCP and arsenic at DCA-12 is provided by the soil samples collected at depths of 4 and 6 feet bgs at this location, in which OCPs were not detected and arsenic was reported below its cleanup goal.
- Soil located immediately adjacent to the south, west, and north of DCA-12 was excavated to a minimum of 4 feet bgs (Figure 2-3)
- The horizontal delineation of DCA-12 to the east is provided by two sample locations, DCA-23 located 10 feet southwest and DCA-18 located approximately 6 feet northeast. Although surface soil sample results at these locations did not exceed cleanup levels for OCPs and arsenic, the area from DCA-12 to immediately adjacent to these sample locations was excavated to a depth 2 feet bgs (Figure 2-3). Collection of soil samples below 2 feet at DCA-23 and DCA-18 was unnecessary due to the surficial nature of the contamination at this site.

At sample location DCA-09, arsenic was reported at 21.8 mg/kg in the surface soil sample. This result is below the site cleanup goal, but exceeds the HDOH Environmental Action Level (EAL) for sites over non-drinking aquifers, where surface water is greater than 150 meters away. However, since the result is only slightly over the EAL, and this situation only occurs at one location on the site, HDOH has concurred that the extent of site cleanup, with respect to arsenic, was appropriate (pers. comm., 2008).

With the exception of sample location DCA-12 at 2-feet bgs, field observations and laboratory analytical data indicate that all soil impacted above the project cleanup criteria for OCP and arsenic have been removed from the Site. Residual levels of COC remaining at the Site are below the project cleanup goals. No further action is recommended, and the Site may be considered for unrestricted use.

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Appendix A
Photographic Documentation

Photo No. 1: View of ESN Pacific using Power Probe drill to collect subsurface samples.

Photo No. 2: View ESN Pacific collecting one-foot step out sample.

Photo No. 3: View of change in lithology within clear PVC tube from clean fill to in-situ sand.

Photo No. 4: View of Sample EL036 showing location of sample with respect to fill material.

Photo No. 5: View of hand tools being used to collect Sample EL043.

Photo No. 6: View of change in soil assuring collection of native material for Sample EL043.

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Photo No. 8: View of ECC personnel using gas-powered line trimmer to clear grass.

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Photo No. 10: View of Control Point personnel performing land survey.

Photo No. 11: View of ECC personnel using hopper to directly load soil into bulk package.

Photo No. 12: View of ECC personnel stockpiling Group 3 soils on poly sheeting.

Photo No. 13: View of stockpile covered with poly sheeting.

Photo No. 14: View of stockpile being loaded into bulk package using hopper.

Photo No. 15: View of limits of excavation showing 2-, 4-, 6- and 10-ft boundaries.

Photo No. 16: View of ECC personnel using Dynapac compactor for site restoration.

Photo No. 17: View of clean fill material being placed and orange line to show 8-inch lift limit.

Photo No. 18: View of overweight bulk package being loaded into FlexPak.

Photo No. 19: View of labeled bulk sacks prior to loading into shipping container.

Photo No. 20: View of PCS personnel placing placards on 40-foot shipping container.

Photo No. 21: View of suspect ACM transite panels unearthed within excavation limit.

Photo No. 22: View of packaged suspect ACM transite labeled for on-island disposal.

Appendix B
Laboratory Analytical Reports

Appendix C
Laboratory Data Validation Reports

PRECISION, ACCURACY, REPRESENTATIVENESS, COMPARABILITY, COMPLETENESS SUMMARY REPORT

REMOVAL ACTION AT THE FORMER DRUM CRUSHING AREA, FORMER NAVAL AIR STATION BARBERS POINT OAHU, HAWAII CTO 001

20 May 2008

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Glossary

CLP	Contract Laboratory Program
DCA	Drum Crushing Area
DQO	Data Quality Objectives
EPA	Environmental Protection Agency
LCS/LCSD	Laboratory Control Sample / Laboratory Control Sample Duplicate
mg/Kg	Milligrams per Kilogram
MS/MSD	Matrix Spike / Matrix Spike Duplicate
NAS	Naval Air Station
PARCC	Precision,Accuracy,Representativeness,Comparability, Completeness
PCB	Polychlorinated Biphenyl
QA/QC	Quality Assurance / Quality Control
RPD	Relative Percent Difference
RRF	Relative Response Factor
SDG	Sample Delivery Group
SOW	Statement of Work
ug/Kg	Micrograms per Kilogram
USEPA	United States Environmental Protection Agency
%D	Percent Difference
%R	Percent Recovery
%RSD	Percent Relative Standard Deviation

PRECISION, ACCURACY, REPRESENTATIVENESS, COMPARABILITY, COMPLETENESS SUMMARY REPORT
FORMER NAS BARBERS POINT CTO 001

1.0 INTRODUCTION

A removal action was conducted at the former Drum Crushing Area (DCA), which is located within the former Naval Air Station (NAS) Barbers Point in Oahu, Hawaii. This part of the removal action included the collection and analyses of 31 environmental and quality control (QC) samples. The analyses were performed by the following methods:

Chlorinated Pesticides by EPA SW 846 Method 8081A
Arsenic by EPA SW 846 Method 6020

Analytical services were provided by Test America, Inc. whom performed analyses on the soil samples. The samples were grouped into sample delivery groups (SDGs) of up to 20 field samples received by each laboratory. The environmental samples are associated with QA/QC samples designed to document the data quality of the entire SDG or a sub-group of samples within an SDG. Table I in Appendix A is a cross-reference table listing each sample, analysis, SDG, collection date, laboratory sample number, and matrix. All shaded samples in Table I in Appendix A were reviewed under PACDIV Level D guidelines.

Approximately twenty percent of the analytical data were validated according to PACDIV Level D data validation procedures and eighty percent of the analytical data were validated according to PACDIV Level C data validation procedures. The analytical data were evaluated for quality assurance and quality control (QA/QC) based on the following documents: *U. S. Navy PACDIV Installation Restoration Program (IRP) Project Procedures Manual* October 1998, *Contract Laboratory Program National Functional Guidelines for Organic Data Review*, October 1999, *Contract Laboratory Program National Functional Guidelines for Inorganic Data Review*, October 2004, and the *EPA SW 846 Third Edition, Test Methods for Evaluating Solid Waste.*

This report summarizes the QA/QC evaluation of the data according to precision, accuracy, representativeness, completeness, and comparability (PARCC) relative to the project data quality objectives (DQOs). This report provides a quantitative and qualitative assessment of the data and identifies potential sources of error, uncertainty, and bias that may affect the overall usability.

The PARCC summary report evaluates and summarizes the results of QA/QC data validation for the entire sampling program. Each analytical fraction has a separate section for each of the PARCC criteria. These sections interpret specific QC deviations and their effects on both individual data points and the analyses as a whole. Section 5.0 presents a summary of the PARCC criteria by comparing quantitative parameters with acceptability criteria defined in the project DQO's. Qualitative PARCC criteria are also summarized in this section.

Precision and Accuracy of Environmental Data

Environmental data quality depends on sample collection procedures, analytical methods and instrumentation, documentation, and sample matrix properties. Both sampling procedures and laboratory analyses contain potential sources of uncertainty, error, and/or bias, which affect the overall quality of a measurement. Errors in sample data may result from incomplete equipment decontamination, inappropriate sampling techniques, sample heterogeneity, improper filtering, and improper preservation. The accuracy of analytical results is dependent on selecting appropriate analytical methods, maintaining equipment properly, and complying with QC requirements. The sample matrix also is an important factor in the ability to obtain precise and accurate results within a given media.

Environmental and laboratory QA/QC samples assess the effects of sampling procedures and evaluate laboratory contamination, laboratory performance, and matrix effects. QA/QC samples include: trip blanks, equipment rinsate blanks, field duplicates, method blanks, laboratory control samples (LCSs), surrogate spikes, matrix spike/matrix spike duplicates (MS/MSDs), and laboratory duplicates.

Before conducting the PARCC evaluation, the analytical data were validated according to the U.S. Navy PACDIV IRP project procedures manual (1998) and the Functional Guidelines for Organic Data Review (USEPA 1999) and Inorganic Data Review (USEPA 2004) and EPA SW 846 Third Edition, Test Methods for Evaluating Solid Waste. Samples not meeting the PACDIV IRP project procedures manual and the Functional Guideline acceptance criteria were qualified with a flag, an abbreviation indicating a deficiency with the data. The following are flags used in data validation.

J <u>Estimated</u> The associated numerical value is an estimated quantity. The analyte was detected but the reported value may not be accurate or precise. The "J" qualification indicates the data fell outside the QC limits, but the exceedance was not sufficient to cause rejection of the data.

R <u>Rejected</u> The data is unusable (the compound or analyte may or may not be present). Use of the "R" qualifier indicates a significant variance from functional guideline acceptance criteria. Either resampling or reanalysis is necessary to determine the presence or absence of the rejected analyte.

NJ <u>Estimated/ Presumptive</u> The analysis indicates the presence of an analyte that has been “tentatively identified” and the associated numerical value represents its approximate concentration.

U Non<u>detected</u> Analyses were performed for the compound or analyte, but it was not detected. The "U" designation is also applied to suspected blank contamination. The "U" flag is used to qualify any result detected in an environmental sample at a concentration less than 10 times the value of the concentration in any associated blank for common laboratory contaminants and less than 5 times the concentration in any associated blank for all other contaminants.

UJ <u>Estimated/Nondetected</u> Analyses were performed for the compound or analyte, but it was not detected and the sample quantitation or detection limit is an estimated quantity due to poor accuracy or precision. This qualification is also used to flag possible false negative results in the case where low bias in the analytical system is indicated by low calibration response, surrogate, internal standard, or other spike recovery.

Once the data are reviewed and qualified according to the Navy PACDIV IRP project procedures manual and the functional guidelines, the data set is then evaluated using PARCC criteria. PARCC criteria provide an evaluation of overall data usability. The following is a discussion of PARCC criteria as related to the project DQOs.

Precision is a measure of the agreement or reproducibility of analytical results under a given set of conditions. It is a quantity that cannot be measured directly but is calculated from percent recovery data. Precision is expressed as the relative percent difference (RPD):

$$RPD = (D1-D2)/\{1/2(D1+D2)\} \times 100$$

Where D1 and D2 are the reported concentrations for sample and duplicate analyses. Precision is primarily assessed by calculating an RPD from the percent recoveries of the spiked compounds for each sample in the MS/MSD pair. In the absence of an MS/MSD pair, a laboratory duplicate or LCS/LCSD pair can be analyzed as an alternative means of assessing precision. In some cases, samples from multiple SDGs were within one QC batch and therefore are associated with the same laboratory QC samples.

An additional measure of sampling precision was obtained by collecting and analyzing field duplicate samples, which were compared using the RPD result as the evaluation criteria.

MS and MSD samples are field samples spiked by the laboratory with target analytes prior to preparation and analysis. These samples measure the overall efficiency of the analytical method in recovering target analytes from an environmental matrix. A LCS is similar to an MS/MSD sample in that the LCS is spiked with the same target analytes prior to preparation and analysis. However, the LCS is prepared using a controlled interference-free matrix instead of a field sample aliquot. Laboratory reagent water is used to prepare aqueous LCS. Non-aqueous LCSs are prepared using solid media approved by the American Society for Testing and Materials (ASTM) for their homogeneity. The LCS measures laboratory efficiency in recovering target analytes from either a solid or aqueous matrix in the absence of matrix interferences.

For inorganics analysis, one primary sample is analyzed and accompanied by an unspiked laboratory duplicate. The data reviewer compares the reported results of the primary analysis and the laboratory duplicate, then calculates RPDs, which are used to assess laboratory precision.

Laboratory and field sampling precision are further evaluated by calculating RPDs for field sample duplicate pairs. The sampler collects two field samples at the same location and under identically controlled conditions. The laboratory then analyzes the samples under identical conditions.

An RPD outside the numerical QC limit in either MS/MSD samples or LCS/LCSD indicates imprecision. Imprecision is the variance in the consistency with which the laboratory arrives at a particular reported result. Thus, the actual analyte concentration may be higher or lower than the reported result.

Possible causes of poor precision include sample matrix interference, improper sample collection or handling, inconsistent sample preparation, and poor instrument stability. In some duplicate pairs, results maybe reported in either the primary or duplicate samples at levels below the reporting limit or non-detected. Since these values are considered to be estimates, RPD exceedances from these duplicate pairs do not suggest a significant impact on the data quality.

Accuracy is a measure of the agreement of an experimental determination and the true value of the parameter being measured. It is used to identify bias in a given measurement system. Recoveries outside acceptable QC limits may be caused by factors such as instrumentation, analyst error, or matrix interference. Accuracy is assessed through the analysis of MS, MSD, LCS, and samples containing surrogate spikes. In some cases, samples from multiple SDGs were within one QC batch and therefore are associated with the same laboratory QC samples. Surrogate spikes are either isotopically labeled compounds or compounds that are not typically detected in the samples. Surrogate spikes are added to every blank, environmental sample, LCS, MS/MSD, and standard for PCB. Accuracy of inorganic analyses is determined using the percent recoveries of MS and LCS analyses.

Percent recovery (%R) is calculated using the following equation:

$$\%R = (A-B)/C \times 100$$

where:
A = measured concentration in the spiked sample
B = measured concentration of the spike compound in the unspiked sample
C = concentration of the spike

The percent recovery of each analyte spiked in MS/MSD samples, LCS, and surrogate compounds added to environmental samples is evaluated with the acceptance criteria specified by the previously noted documents. Spike recoveries outside the acceptable QC accuracy limits provide an indication of bias, where the reported data may overestimate or underestimate the actual concentration of compounds detected or quantitation limits reported for environmental samples.

Representativeness is a qualitative parameter that expresses the degree to which the sample data are characteristic of a population. It is evaluated by reviewing the QC results of blanks, samples and holding times. Positive detects of compounds in the blank samples identify compounds that may have been introduced into the samples during sample collection, transport, preparation, or analysis. The QA/QC blanks collected and analyzed are method blanks, trip blanks, and field blanks.

A method blank is a laboratory grade water or solid matrix that contains the method reagents and has undergone the same preparation and analysis as the environmental samples. The method blank provides a measure of the combined contamination derived from the laboratory source water, glassware, instruments, reagents, and sample preparation steps. Method blanks are prepared for each sample of a similar matrix extracted by the same method at a similar concentration level.

Trip blanks are used to identify possible volatile organic contamination introduced into the sample during transport. A trip blank is a sample bottle filled in the laboratory with reagent-grade water and preserved to a pH less than 2 with hydrochloric acid. It is transported to the site, stored with the sample containers, and returned unopened to the laboratory for analysis.

Additionally, for inorganic analyses, initial and continuing calibration blanks consist of acidified laboratory grade water, which are injected at the beginning and at a regular frequency during each 12 - hour sample analysis run. These blanks estimate residual contaminants from the previous sample or standards analysis and measure baseline shifts that commonly occur in emission and absorption spectroscopy.

Field blanks consist of analyte-free source water stored at the sample collection site. The field blank is collected from each source water used during each sampling event.

Contaminants found in both the environmental sample and a blank sample are assumed to be laboratory artifacts if the concentration in the environmental sample is less than 5 times the blank value for laboratory contaminants.

Holding times are evaluated to assure that the sample integrity is intact for accurate sample preparation and analysis. Holding times will be specific for each method and matrix analyzed. Holding time exceedances can cause loss of sample constituents due to biodegradation, precipitation, volatization, and chemical degradation.

Comparability is a qualitative expression of the confidence with which one data set may be compared to another. It provides an assessment of the equivalence of the analytical results to data obtained from other analyses. It is important that data sets be comparable if they are used in conjunction with other data sets. The factors affecting comparability include the following: sample collection and handling techniques, matrix type, and analytical method. If these aspects of sampling and analysis are carried out according to standard analytical procedures, the data are considered comparable. Comparability is also dependent upon other PARCC criteria, because only when precision, accuracy, and representativeness are known can data sets be compared with confidence.

Completeness is defined as the percentage of acceptable sample results compared to the total number of sample results. Completeness is evaluated to determine if an acceptable amount of usable data were obtained so that a valid scientific site assessment can be completed. Completeness equals the total number of sample results for each fraction minus the total number of rejected sample results divided by the total number of sample results multiplied by 100. As specified in the project DQOs, the goal for completeness for target analytes in each analytical fraction is 90 percent.

Percent completeness is calculated using the following equation:

$$\%C = (T - R)/T \times 100$$

where:
%C = percent completeness
T = total number of sample results
R = total number of rejected sample results

Completeness is also determined by comparing the planned number of samples per method and matrix as specified in the FSP or QAPP, with the number determined above.

The following sections present a review of QC data for each analytical method.

2.0 CHLORINATED PESTICIDES

A total of 27 soil samples were analyzed for chlorinated pesticides by EPA SW 846 Method 8081A. All chlorinated pesticide data were assessed to be valid since none of the 479 total results were rejected based on QC exceedances. This section discusses the QA/QC supporting documentation as defined by the PARCC criteria and evaluated based on the DQOs.

2.1 Precision and Accuracy

2.1.1 Instrument Calibration

Initial and continuing calibration results provide a means of evaluating accuracy within a particular SDG. Percent relative standard deviation (%RSD) and percent difference (%D) are the two major parameters used to measure the effectiveness of instrument calibration. %RSD is an expression of the linearity of instrument response. %D is a comparison of a continuing calibration instrumental response with its initial response. %RSD and %D exceedances suggest more routine instrumental anomalies, which typically impact all sample results for the affected compounds.

The relative standard deviations in the initial calibrations met the acceptance criteria of 20 percent.

Ten endrin and methoxychlor results were qualified as non-detected estimated (UJ). The percent difference between the initial calibration and the continuing calibration concentrations were outside the acceptance criteria of 15 percent. The affected samples are identified in the data validation reports.

2.1.2 Surrogates

No data were qualified based on surrogate recovery non-conformances. In cases where individual recoveries exceeded criteria, the QC exceedance was judged to have no impact on the data quality and no qualifications were made.

2.1.3 MS/MSD Samples

As a result of non-compliant MS/MSD %R and RPD, the methoxychlor result for sample EL017 was qualified as non-detected estimated (UJ). The details regarding the qualification of results are provided in the data validation reports.

2.1.4 LCS Samples

No data were qualified based on LCS non-conformances. The recoveries were evaluated against the acceptance criteria.

2.1.5 Field Duplicate Samples

The field duplicate samples were evaluated for acceptable precision with RPDs for the compounds. The associated data validation narratives provided details regarding criteria exceeded. Sample data were not qualified on the basis of field duplicate precision.

2.1.6 Performance Evaluation Samples

Performance evaluation (PE) samples were not performed for this analysis.

2.1.7 Compound Quantitation and Target Identification

As a result of compound quantitation non-conformances (i.e. %D between two columns greater than 25%), ten detected results were qualified estimated (J) or presumptive estimated (NJ). The affected compounds were 4,4'-DDT, alpha-chlordane and gamma-chlordane. The details regarding the qualification of results are provided in the data validation reports.

All target identification were found to be acceptable.

2.2 Representativeness

2.2.1 Holding Times

The evaluation of holding times to verify compliance with the method was conducted. All holding times were met.

2.2.2 Blanks

Method blanks were collected and analyzed to evaluate representativeness. The concentration for an individual target compound in the blank was used for data qualification.

If contaminants were detected in a blank, corrective actions were made for the chemical analytical data during data validation. The corrective action consisted of amending the laboratory reported results for organic compounds based on the following criteria. The validation qualifier codes used in the blank summary tables are described below.

> <u>Results Below the RL</u> If a sample result for the blank contaminant was less than the RL and less than 5 times the blank value, the sample result was amended as non-detected at the RL for the target compound.

Results Above the RL If a sample result for the blank contaminant was greater than the sample RL and less than 5 times the blank value, the sample result for the blank contaminant was amended as an estimated non-detect at the concentration reported in the sample.

No Action If a sample result for the blank contaminant was greater than 5 times the blank value, the result was not amended.

2.2.2.1 Method Blanks

No contaminants were detected in the method blanks for this analysis.

2.2.2.2 Equipment Rinsate and Field Blanks

No equipment rinsate and field blank samples were collected for this analysis.

2.3 Comparability

The laboratory used standard analytical methods for all of the analyses. In all cases, the method detection limits attained were at or below the reporting limit. Target compounds detected below the reporting limits flagged (J) by the laboratory should be considered estimated. The comparability of the data is regarded as acceptable.

2.4 Completeness

The completeness level attained for chlorinated pesticides field samples was 100 percent. This percentage was calculated as the total number of accepted sample results divided by the total number of sample results multiplied by 100.

3.0 ARSENIC

A total of 13 soil samples were analyzed for arsenic by EPA SW 846 Method 6020. All metal data were assessed to be valid since none of the 13 total results were rejected based on QC exceedances. This section discusses the QA/QC supporting documentation as defined by the PARCC criteria and evaluated based on the DQOs.

3.1 Precision and Accuracy

3.1.1 Instrument Calibration

Initial and continuing calibration verification results provide a means of evaluating accuracy within a particular SDG. Correlation coefficient (r) and percent recovery (%R) are the two major parameters used to measure the effectiveness of instrument calibration. The correlation coefficient indicates the linearity of the calibration curve. %R is used to verify the on going calibration acceptability of the analytical system. The most critical of the two calibration parameters, r, has the potential to affect data accuracy across an SDG when it is outside the acceptable QC limits. %R exceedances suggest more routine instrumental anomalies, which typically impact all sample results for the affected analytes.

The correlation coefficients in the initial calibrations and/or percent recoveries in the continuing calibration verifications met the acceptance criteria of ≥ 0.995 and 90-110 percent, respectively.

3.1.2 MS/MSD Samples

As a result of a non-compliant MS/MSD %R, eight arsenic results were qualified as detected estimated (J) or non-detected estimated (UJ). The details regarding the qualification of results are provided in the data validation reports.

3.1.3 Duplicate (DUP) Samples

As a result of a non-compliant DUP RPD, two arsenic results were qualified as detected estimated (J). The details regarding the qualification of results are provided in the data validation reports.

3.1.4 LCS Samples

No data were qualified based on LCS non-conformances. The recoveries were evaluated against the acceptance criteria.

3.1.5 Internal Standards

No data were qualified based on internal standard non-conformances. The recoveries were evaluated against the acceptance criteria.

3.1.6 ICP Interference Check Sample

No data were qualified based on ICP interference check non-conformances. The recoveries were evaluated against the acceptance criteria.

3.1.7 Field Duplicate Samples

The field duplicate samples were evaluated for acceptable precision with RPDs for the analytes. All RPDs were within acceptance criteria.

3.1.8 Performance Evaluation Samples

Performance evaluation (PE) samples were not performed for this analysis.

3.1.9 Sample Result Verification

All sample results were found to be acceptable.

3.2 Representativeness

3.2.1 Holding Times

The evaluation of holding times to verify compliance with the method was conducted. All holding times were met.

3.2.2 Blanks

As previously discussed in Section 2.2.2, method blanks were analyzed to evaluate representativeness.

If contaminants were detected in a blank, corrective actions were made for the chemical analytical data during data validation. The corrective action consisted of amending the laboratory reported results for inorganic analytes based on the following criteria. The validation qualifier codes are described below.

UJ Validation Qualifier If a sample result for the blank contaminant was less than 5 times the blank value, the sample result for the blank contaminant was amended as estimated non-detected at the sample concentration reported in the sample results.

No Action If a sample result for the blank contaminant was greater than 5 times the blank value, the result was not amended.

3.2.2.1 Method Blanks

No data were qualified due to the contaminant detected in one of the method blanks for this analysis.

3.2.2.2 Equipment Rinsate and Field Blanks

No equipment rinsate and field blank samples were collected for this analysis.

3.3 Comparability

The laboratory used standard analytical methods for all of the analyses. In all cases, the method detection limits attained were at or below the reporting limit. Target analytes detected below the reporting limits flagged (J) by the laboratory should be considered estimated. The comparability of the data is regarded as acceptable.

3.4 Completeness

The completeness level attained for arsenic field samples was 100 percent. This percentage was calculated as the total number of accepted sample results divided by the total number of sample results multiplied by 100.

4.0 VARIANCES IN ANALYTICAL PERFORMANCE

The laboratory used standard analytical methods for all of the analyses throughout the project. No systematic variances in analytical performance were noted according to the laboratory SOW.

5.0 SUMMARY OF PARCC CRITERIA

The validation reports present the PARCC results for all SDGs. Each PARCC criterion is discussed in detail in the following sections.

5.1 Precision and Accuracy

Precision and accuracy were evaluated using data quality indicators such as calibration, MS/MSD, LCS, and surrogates. The precision and accuracy of the data set were considered acceptable after integration of qualification of estimated results as specifically noted in Sections 2.1.1, 2.1.3, 2.1.7, 3.1.2 and 3.1.3.

5.2 Representativeness

All samples for each method and matrix were evaluated for holding time compliance. All samples were associated with a method blank in each individual SDG. The representativeness of the project data is considered acceptable.

5.3 Comparability

Sampling frequency requirements were met in obtaining duplicates. The laboratory used standard analytical methods for their analyses. The analytical results were reported in correct standard units. Holding times, sample preservation, and sample integrity were within QC criteria. The overall comparability is considered acceptable.

5.4 Completeness

Of the 492 total analytes reported, none of the sample results were rejected. The completeness for all SDGs is as follows:

Parameter/Method	Total Analytes	No. of Rejects	% Completeness
Chlorinated Pesticides	479	0	100
Arsenic	13	0	100
Total	**492**	**0**	**100**

The completeness percentage based on rejected data met the 90 percent DQO goal.

APPENDIX A

TABLE 1

SDG#: BQG0073 VALIDATION SAMPLE TABLE **LDC#:** 17891B

Project Name: Former NAS Barbers Point, CTO001 Parameters/Analytical Method

Client ID #	Lab ID #	Matrix	QC Type	Date Collected	Pest. (8081A)	As (6020)								
EL001	BQG0073-01	soil	FD	07/02/07	X	X								
EL002	BQG0073-02	soil	FD	07/02/07	X	X								
EL003	BQG0073-03	soil		07/02/07	X	X								
EL004	BQG0073-04	soil		07/02/07	X	X								
EL005	BQG0073-05	soil		07/02/07	X	X								
EL006	BQG0073-06	soil		07/02/07	X	X								
EL007	BQG0073-07	soil		07/02/07	X	X								
EL008	BQG0073-08	soil		07/02/07	X	X								
EL003MS	BQG0073-03MS	soil	MS	07/02/07	X	X								
EL003MSD	BQG0073-03MSD	soil	MSD	07/02/07	X	X								
EL003DUP	BQG0073-03DUP	soil	DUP	07/02/07		X								

FD = Field Duplicate, MS = Matrix Spike, MSD = Matrix Spike Duplicate,
DUP = Duplicate, DL = Dilution, RE = Reanalysis/Reextraction

Shaded cells indicate Level D validation (all other cells are Level C validation)

SDG#: BQG0503 VALIDATION SAMPLE TABLE **LDC#:** 18104A

Project Name: Former NAS Barbers Point, CTO001 Parameters/Analytical Method

Client ID #	Lab ID #	Matrix	QC Type	Date Collected	Pest. (8081A)									
EL009	BQG0503-01	soil		07/23/07	X									
EL010	BQG0503-02	soil		07/23/07	X									
EL011	BQG0503-03	soil		07/23/07	X									
EL010MS	BQG0503-02MS	soil	MS	07/23/07	X									
EL010MSD	BQG0503-02MSD	soil	MSD	07/23/07	X									

FD = Field Duplicate, MS = Matrix Spike, MSD = Matrix Spike Duplicate,
DUP = Duplicate, DL = Dilution, RE = Reanalysis/Reextraction
Shaded cells indicate Level D validation (all other cells are Level C validation)

SDG#: BQH0146 VALIDATION SAMPLE TABLE **LDC#:** 17891A

Project Name: Former NAS Barbers Point, CTO001 Parameters/Analytical Method

Client ID #	Lab ID #	Matrix	QC Type	Date Collected	Pest. (8081A)	As (6020)								
EL012	BQH0146-01	soil	FD	08/02/07	X									
EL016	BQH0146-02	soil		08/02/07	X									
EL019	BQH0146-03	soil		08/02/07	X									
EL022	BQH0146-04	soil		08/02/07	X									
EL025	BQH0146-05	soil		08/02/07	X									
EL028	BQH0146-06	soil		08/02/07	X									
EL029	BQH0146-07	soil		08/02/07		X								
EL030	BQH0146-08	soil		08/02/07	X									
EL032	BQH0146-09	soil	FD	08/02/07	X									
EL017	BQH0146-16	soil		08/02/07	X									
EL033	BQH0146-21	soil		08/02/07	X									
EL025MS	BQH0146-05MS	soil	MS	08/02/07	X									
EL025MSD	BQH0146-05MSD	soil	MSD	08/02/07	X									
EL017MS	BQH0146-16MS	soil	MS	08/02/07	X									
EL017MSD	BQH0146-16MSD	soil	MSD	08/02/07	X									

FD = Field Duplicate, MS = Matrix Spike, MSD = Matrix Spike Duplicate,
DUP = Duplicate, DL = Dilution, RE = Reanalysis/Reextraction

Shaded cells indicate Level D validation (all other cells are Level C validation)

SDG#: BRA0015 VALIDATION SAMPLE TABLE **LDC#:** 18394A

Project Name: Former NAS Barbers Point, CTO001 Parameters/Analytical Method

Client ID #	Lab ID #	Matrix	QC Type	Date Collected	As (6020)									
EL034	BRA0015-01	soil		12/28/07	X									
EL035	BRA0015-02	soil		12/28/07	X									
EL034MS	BRA0015-01MS	soil	MS	12/28/07	X									
EL034DUP	BRA0015-01DUP	soil	DUP	12/28/07	X									

FD = Field Duplicate, MS = Matrix Spike, MSD = Matrix Spike Duplicate,
DUP = Duplicate, DL = Dilution, RE = Reanalysis/Reextraction

Shaded cells indicate Level D validation (all other cells are Level C validation)

SDG#: 580-9079 VALIDATION SAMPLE TABLE **LDC#:** 18731A

Project Name: Former NAS Barbers Point, CTO001 Parameters/Analytical Method

Client ID #	Lab ID #	Matrix	QC Type	Date Collected	Pest. (8081A)	As (6020)								
EL036	580-9079-1	soil		02/25/08	X									
EL037	580-9079-2	soil		02/25/08		X								
EL038	580-9079-3	soil		02/25/08	X									
EL039	580-9079-4	soil		02/25/08	X									
EL040	580-9079-5	soil		02/25/08	X	X								
EL041	580-9079-6	soil		02/25/08	X									
EL037MS	580-9079-2MS	soil	MS	02/25/08		X								
EL037MSD	580-9079-2MSD	soil	MSD	02/25/08		X								
EL037DUP	580-9079-2DUP	soil	DUP	02/25/08		X								

FD = Field Duplicate, MS = Matrix Spike, MSD = Matrix Spike Duplicate,
DUP = Duplicate, DL = Dilution, RE = Reanalysis/Reextraction

Shaded cells indicate Level D validation (all other cells are Level C validation)

SDG#: 580-9330 VALIDATION SAMPLE TABLE **LDC#:** 18731C

Project Name: Former NAS Barbers Point, CTO001 Parameters/Analytical Method

Client ID #	Lab ID #	Matrix	QC Type	Date Collected	Pest. (8081A)									
EL043	580-9330-1	soil		03/14/08	X									
EL043MS	580-9330-1MS	soil	MS	03/14/08	X									
EL043MSD	580-9330-1MSD	soil	MSD	03/14/08	X									

FD = Field Duplicate, MS = Matrix Spike, MSD = Matrix Spike Duplicate,
DUP = Duplicate, DL = Dilution, RE = Reanalysis/Reextraction
Shaded cells indicate Level D validation (all other cells are Level C validation)

LABORATORY DATA CONSULTANTS, INC.
7750 El Camino Real, Suite 2L Carlsbad, CA 92009 Phone: 760/634-0437 Fax: 760/634-0439

Environmental Chemical Corporation
99-1151 Iwaena Street
Aiea, HI 96701
ATTN: Mr. Troy Rosenbush

December 14, 2007

SUBJECT: NAS Barbers Point, CTO 001, Data Validation

Dear Mr. Rosenbush,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on November 27, 2007. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 17891:

SDG #	Fraction
BQH0146, BQG0073	Chlorinated Pesticides, Arsenic

The data validation was performed under PACDIV QC Level C and Level D guidelines. The analyses were validated using the following documents, as applicable to each method:

- Project Procedures Manual, U.S. Navy PACDIV Installation Restoration Program (IRP), October 1998
- USEPA, Contract Laboratory Program National Functional Guidelines for Organic Data Review, October 1999
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, October 2004
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998

Please feel free to contact us if you have any questions.

Sincerely,

Stella Cuenco

Stella S. Cuenco
Project Manager/Senior Chemist

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573 pages-CD

Attachment 1

LDC #17891 (Environmental Chemical Corporation-Aeia, HI / NAS Barbers Point, CTO#001)

LDC	SDG#	DATE REC'D	(3) DATE DUE	Pest. (8081A)		As (6020)																									
Matrix:	Water/Wipe/Soil			W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	BQH0146	11/27/07	12/18/07	0	10	0	1																								
B	BQG0073	11/27/07	12/18/07	0	8	0	8																								
Total	T/SC			0	18	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	27

Shaded cells indicate Level D validation (all other cells are Level C validation). These sample counts do not include MS/MSD, and DUPs

17891ST.wpd

NAS Barbers Point, CTO 001
Data Validation Reports
LDC# 17891

Pesticides

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: NAS Barbers Point, CTO 001

Collection Date: August 2, 2007

LDC Report Date: December 14, 2007

Matrix: Soil

Parameters: Chlorinated Pesticides

Validation Level: PACDIV QC Level C

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): BQH0146

Sample Identification

EL012
EL016
EL019
EL022
EL025
EL028
EL030
EL032
EL017
EL033
EL025MS
EL025MSD
EL017MS
EL017MSD

Introduction

This data review covers 14 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8081A for Chlorinated Pesticides.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) and the Project Procedures Manual, U.S. Navy PACDIV Installation Restoration Program (IRP), October 1998.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified a P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XIV.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/ECD Instrument Performance Check

Instrument performance was acceptable unless noted otherwise under initial calibration and continuing calibration sections.

III. Initial Calibration

Initial calibration of single and multicomponent compounds was performed for the primary (quantitation) column and confirmation column as required by this method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for selected compounds.

A curve fit, based on the initial calibration, was established for quantitation for selected compounds. The coefficient of determination (r^2) was greater than or equal to 0.990 .

IV. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) of calibration factors in continuing standard mixtures were within the 15.0% QC limits with the following exceptions:

Date	Standard	Column	Compound	%D	Associated Samples	Flag	A or P
8/15/07	7H15008	DB-35MS	Endrin	23	EL025 EL025MS EL025MSD 7H14015-BLK1	J (all detects) UJ (all non-detects)	A
8/15/07	7H15015	DB-35MS	Endrin	21.2	EL012 EL016 EL019 EL022 EL028 EL030 EL032	J (all detects) UJ (all non-detects)	A
8/16/07	7H16005	DB-35MS	Methoxychlor	104	EL012 EL032	J (all detects) UJ (all non-detects)	A

The individual 4,4'-DDT and Endrin breakdowns (%BD) were less than or equal to 15.0%.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No chlorinated pesticide contaminants were found in the method blanks.

No field blanks were identified in this SDG.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. Surrogate recoveries (%R) were not within QC limits for several samples in this SDG. Since these samples were diluted out, no data were qualified.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
EL017MS/MSD (EL017)	Methoxychlor	-	1180 (14-163)	170 (≤35)	J (all detects) UJ (all non-detects)	P
EL025MS/MSD (EL025)	delta-BHC Endosulfan sulfate Endrin aldehyde	- - -	- - -	42.4 (≤35) 46.4 (≤35) 53.6 (≤35)	None None None None	A

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Pesticide Cleanup Checks

a. Florisil Cartridge Check

Florisil cleanup was not required and therefore not performed in this SDG.

b. GPC Calibration

GPC cleanup was not required and therefore not performed in this SDG.

XI. Target Compound Identification

All target compound identifications were within validation criteria.

XII. Compound Quantitation and Reported CRQLs

All compound quantitation and CRQLs were within validation criteria.

The sample results for detected compounds from the two columns were within 25% difference with the following exceptions:

Sample	Compound	%D	Flag	A or P
EL012	alpha-Chlordane	111	NJ (all detects)	A
EL028	alpha-Chlordane	98	J (all detects)	A
EL032	alpha-Chlordane	62	J (all detects)	A
EL033	alpha-Chlordane	61	J (all detects)	A

XIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XIV. Field Duplicates

Samples EL012 and EL032 were identified as field duplicates. No chlorinated pesticides were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/Kg)		RPD (Limits)
	EL012	EL032	
alpha-Chlordane	72.8	58.6	22 (≤100)
gamma-Chlordane	76.3	60.5	23 (≤100)
4,4'-DDD	91.5	148	47 (≤100)
4,4'-DDE	628	662	5 (≤100)
4,4'-DDT	211	2170	164 (≤100)

NAS Barbers Point, CTO 001
Chlorinated Pesticides - Data Qualification Summary - SDG BQH0146

SDG	Sample	Compound	Flag	A or P	Reason
BQH0146	EL025 EL012 EL016 EL019 EL022 EL028 EL030 EL032	Endrin	J (all detects) UJ (all non-detects)	A	Continuing calibration (%D)
BQH0146	EL012 EL032	Methoxychlor	J (all detects) UJ (all non-detects)	A	Continuing calibration (%D)
BQH0146	EL017	Methoxychlor	J (all detects) UJ (all non-detects)	P	Matrix spike/Matrix spike duplicates (%R)(RPD)
BQH0146	EL012	alpha-Chlordane	NJ (all detects)	A	Compound quantitation and CRQLs (%D)
BQH0146	EL028 EL033 EL017	alpha-Chlordane	J (all detects)	A	Compound quantitation and CRQLs (%D)

NAS Barbers Point, CTO 001
Chlorinated Pesticides - Laboratory Blank Data Qualification Summary - SDG BQH0146

No Sample Data Qualified in this SDG

NAS Barbers Point, CTO 001
Chlorinated Pesticides - Field Blank Data Qualification Summary - SDG BQH0146

No Sample Data Qualified in this SDG

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

SEATTLE, WA 11720 NORTH CREEK PKWY N, SUITE 400
BOTHELL, WA 98011-8244
PH: (425) 420.9200 FAX: (425) 420.9210

Amended Report

Environmental Chemical Corp (ECC) 99-1151 Iwaena St. Aiea, HI 96701	Project Name: BP DCA Project Number: 5440.001 Project Manager: Troy Rosenbush	Report Created: 11/15/07 18:07

Organochlorine Pesticides by EPA Method 8081A

TestAmerica - Seattle, WA

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
BQH0146-01 (EL012)		Soil			Sampled: 08/02/07 08:45					
Aldrin	EPA 8081A	ND U	—	21.1	ug/kg dry	20x	7H14015	08/14/07 11:31	08/16/07 00:58	
alpha-BHC	"	ND	—	21.1	"	"	"	"	"	
beta-BHC [2C]	"	ND	—	42.2	"	"	"	"	"	
delta-BHC	"	ND	—	21.1	"	"	"	"	"	
gamma-BHC (Lindane)	"	ND	—	21.1	"	"	"	"	"	
alpha-Chlordane [2C]	"	72.8 NJ	— (*XII)	21.1	"	"	"	"	"	R10
gamma-Chlordane	"	76.3	—	21.1	"	"	"	"	"	
4,4'-DDD	"	91.5	—	42.2	"	"	"	"	"	
4,4'-DDE	"	628	—	42.2	"	"	"	"	"	
Dieldrin	"	ND U	—	42.2	"	"	"	"	"	
Endosulfan I	"	ND	—	21.1	"	"	"	"	"	
Endosulfan II	"	ND	—	42.2	"	"	"	"	"	
Endosulfan sulfate	"	ND	—	42.2	"	"	"	"	"	
Endrin	"	ND UJ	— (C)	42.2	"	"	"	"	"	C
Endrin aldehyde	"	ND U	—	42.2	"	"	"	"	"	
Endrin ketone	"	ND	—	42.2	"	"	"	"	"	
Heptachlor	"	ND	—	21.1	"	"	"	"	"	
Heptachlor epoxide	"	ND	—	21.1	"	"	"	"	"	
Hexachlorobenzene [2C]	"	ND	—	21.1	"	"	"	"	"	
Toxaphene	"	ND	—	1050	"	"	"	"	"	
Surrogate(s): TCX [2C]		*78.8%*		*46 - 125 %*	"				"	
Decachlorobiphenyl [2C]		*150%*		*27 - 175 %*	"				"	
BQH0146-01RE1 (EL012)		Soil			Sampled: 08/02/07 08:45					
4,4'-DDT	EPA 8081A	211	—	105	ug/kg dry	50x	7H14015	08/14/07 11:31	08/16/07 19:01	
Methoxychlor	"	ND UJ	— (C)	105	"	"	"	"	"	C
Surrogate(s): TCX			*NR*	*46 - 125 %*	"				"	Z3
Decachlorobiphenyl			*NR*	*27 - 175 %*	"				"	Z3
BQH0146-02 (EL016)		Soil			Sampled: 08/02/07 09:25					
Aldrin	EPA 8081A	ND U	—	1.06	ug/kg dry	1x	7H14015	08/14/07 11:31	08/16/07 01:18	
alpha-BHC	"	ND	—	1.06	"	"	"	"	"	
beta-BHC [2C]	"	ND	—	2.12	"	"	"	"	"	
delta-BHC	"	ND	—	1.06	"	"	"	"	"	
gamma-BHC (Lindane)	"	ND	—	1.06	"	"	"	"	"	
alpha-Chlordane [2C]	"	ND	—	1.06	"	"	"	"	"	
gamma-Chlordane	"	ND	—	1.06	"	"	"	"	"	
4,4'-DDD	"	ND	—	2.12	"	"	"	"	"	R10
Dieldrin	"	ND	—	2.12	"	"	"	"	"	
Endosulfan I	"	ND	—	1.06	"	"	"	"	"	
Endosulfan II	"	ND	—	2.12	"	"	"	"	"	

TestAmerica - Seattle, WA

Sandra Yakamavich

Sandra Yakamavich, Project Manager

Amended Report

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report shall not be reproduced except in full, without the written approval of the laboratory.

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Amended Report

Environmental Chemical Corp (ECC)
99-1151 Iwaena St.
Aiea, HI 96701

Project Name: BP DCA
Project Number: 5440.001
Project Manager: Troy Rosenbush

Report Created: 11/15/07 18:07

Organochlorine Pesticides by EPA Method 8081A

TestAmerica - Seattle, WA

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
BQH0146-02 (EL016)		Soil			Sampled: 08/02/07 09:25					
Endosulfan sulfate	EPA 8081A	ND U	—	2.12	ug/kg dry	1x	7H14015	08/14/07 11:31	08/16/07 01:18	
Endrin	"	ND UJ	— (c)	2.12	"	"	"	"	"	
Endrin aldehyde	"	ND U	—	2.12	"	"	"	"	"	C
Endrin ketone	"	ND	—	2.12	"	"	"	"	"	
Heptachlor	"	ND	—	1.06	"	"	"	"	"	
Heptachlor epoxide	"	ND	—	1.06	"	"	"	"	"	
Hexachlorobenzene [2C]	"	ND	—	1.06	"	"	"	"	"	
Methoxychlor	"	ND	—	2.12	"	"	"	"	"	
Toxaphene	"	ND	—	53.0	"	"	"	"	"	R10
Surrogate(s): TCX [2C]		*85.5%*		*46 - 125 %*	"				"	
Decachlorobiphenyl [2C]		*87.6%*		*27 - 175 %*	"				"	
BQH0146-02RE1 (EL016)		Soil			Sampled: 08/02/07 09:25					
4,4'-DDE	EPA 8081A	56.4	—	4.24	ug/kg dry	2x	7H14015	08/14/07 11:31	08/16/07 19:21	
4,4'-DDT	"	7.26	—	4.24	"	"	"	"	"	
Surrogate(s): TCX		*80.8%*		*46 - 125 %*	"				"	
Decachlorobiphenyl		*75.6%*		*27 - 175 %*	"				"	
BQH0146-03 (EL019)		Soil			Sampled: 08/02/07 09:47					
Aldrin	EPA 8081A	ND U	—	1.04	ug/kg dry	1x	7H14015	08/14/07 11:31	08/16/07 01:38	
alpha-BHC	"	ND	—	1.04	"	"	"	"	"	
beta-BHC [2C]	"	ND	—	2.08	"	"	"	"	"	
delta-BHC	"	ND	—	1.04	"	"	"	"	"	
gamma-BHC (Lindane)	"	ND	—	1.04	"	"	"	"	"	
alpha-Chlordane [2C]	"	ND	—	1.04	"	"	"	"	"	
gamma-Chlordane	"	ND	—	1.04	"	"	"	"	"	R10
4,4'-DDD	"	ND	—	2.08	"	"	"	"	"	R10
Dieldrin	"	ND	—	2.08	"	"	"	"	"	
Endosulfan I	"	ND	—	1.04	"	"	"	"	"	
Endosulfan II	"	ND	—	2.08	"	"	"	"	"	
Endosulfan sulfate	"	ND	—	2.08	"	"	"	"	"	
Endrin	"	ND UJ	— (c)	2.08	"	"	"	"	"	
Endrin aldehyde	"	ND U	—	2.08	"	"	"	"	"	C
Endrin ketone	"	ND	—	2.08	"	"	"	"	"	
Heptachlor	"	ND	—	1.04	"	"	"	"	"	
Heptachlor epoxide	"	ND	—	1.04	"	"	"	"	"	
Hexachlorobenzene [2C]	"	ND	—	1.04	"	"	"	"	"	
Methoxychlor	"	ND	—	2.08	"	"	"	"	"	
Toxaphene	"	ND	—	52.0	"	"	"	"	"	R10
Surrogate(s): TCX [2C]		*87.5%*		*46 - 125 %*	"				"	

TestAmerica - Seattle, WA

Sandra Yakamavich, Project Manager

Amended Report

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report shall not be reproduced except in full, without the written approval of the laboratory.

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Amended Report

Environmental Chemical Corp (ECC) 99-1151 Iwaena St. Aiea, HI 96701	Project Name: BP DCA Project Number: 5440.001 Project Manager: Troy Rosenbush	Report Created: 11/15/07 18:07

Organochlorine Pesticides by EPA Method 8081A

TestAmerica - Seattle, WA

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
BQH0146-03 (EL019)		Soil			Sampled: 08/02/07 09:47					
Decachlorobiphenyl [2C]			*91.2%*		*27 - 175 %*	*1x*			*08/16/07 01:38*	
BQH0146-03RE1 (EL019)		Soil			Sampled: 08/02/07 09:47					
4,4'-DDE	EPA 8081A	67.0	—	4.16	ug/kg dry	2x	7H14015	08/14/07 11:31	08/16/07 19:41	
4,4'-DDT	"	11.7	—	4.16	"	"	"	"	"	
Surrogate(s): TCX			*85.4%*		*46 - 125 %*	"			"	
Decachlorobiphenyl			*84.9%*		*27 - 175 %*	"			"	
BQH0146-04 (EL022)		Soil			Sampled: 08/02/07 10:28					
Aldrin	EPA 8081A	ND U	—	1.05	ug/kg dry	1x	7H14015	08/14/07 11:31	08/16/07 01:58	
alpha-BHC	"	ND	—	1.05	"	"	"	"	"	
beta-BHC [2C]	"	ND	—	2.10	"	"	"	"	"	R10
delta-BHC	"	ND	—	1.05	"	"	"	"	"	
gamma-BHC (Lindane)	"	ND	—	1.05	"	"	"	"	"	
alpha-Chlordane [2C]	"	ND	—	1.05	"	"	"	"	"	
gamma-Chlordane	"	ND	—	1.05	"	"	"	"	"	
4,4'-DDD	"	ND	—	2.10	"	"	"	"	"	
4,4'-DDE	"	ND	—	2.10	"	"	"	"	"	
Dieldrin	"	ND	—	2.10	"	"	"	"	"	
Endosulfan I	"	ND	—	1.05	"	"	"	"	"	
Endosulfan II	"	ND	—	2.10	"	"	"	"	"	
Endosulfan sulfate	"	ND	—	2.10	"	"	"	"	"	
Endrin	"	ND UJ	— (C)	2.10	"	"	"	"	"	C
Endrin aldehyde	"	ND U	—	2.10	"	"	"	"	"	
Endrin ketone	"	ND	—	2.10	"	"	"	"	"	
Heptachlor	"	ND	—	1.05	"	"	"	"	"	
Heptachlor epoxide	"	ND	—	1.05	"	"	"	"	"	
Hexachlorobenzene [2C]	"	ND	—	1.05	"	"	"	"	"	
Methoxychlor	"	ND	—	2.10	"	"	"	"	"	
Toxaphene	"	ND	—	52.6	"	"	"	"	"	
Surrogate(s): TCX [2C]			*91.2%*		*46 - 125 %*	"			"	
Decachlorobiphenyl [2C]			*90.9%*		*27 - 175 %*	"			"	

Sandra Yakamavich

Sandra Yakamavich, Project Manager

Amended Report

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TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

SEATTLE, WA 11720 NORTH CREEK PKWY N, SUITE 400
BOTHELL, WA 98011-8244
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Amended Report

Environmental Chemical Corp (ECC) 99-1151 Iwaena St. Aiea, HI 96701	Project Name:	BP DCA	Report Created:
	Project Number:	5440.001	11/15/07 18:07
	Project Manager:	Troy Rosenbush	

Organochlorine Pesticides by EPA Method 8081A

TestAmerica - Seattle, WA

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
BQH0146-04RE1 (EL022)		**Soil**			**Sampled: 08/02/07 10:28**					
4,4'-DDT	EPA 8081A	ND U	—	2.10	ug/kg dry	1x	7H14015	08/14/07 11:31	08/16/07 18:22	
Surrogate(s): TCX			*87.5%*		*46 - 125 %*	"			"	
Decachlorobiphenyl			*87.7%*		*27 - 175 %*	"			"	
BQH0146-05 (EL025)		**Soil**			**Sampled: 08/02/07 11:00**					
Aldrin	EPA 8081A	ND U	—	21.6	ug/kg dry	20x	7H14015	08/14/07 11:31	08/15/07 21:55	
alpha-BHC	"	ND	—	21.6	"	"	"	"	"	
beta-BHC [2C]	"	ND	—	43.3	"	"	"	"	"	
delta-BHC	"	ND	—	21.6	"	"	"	"	"	
gamma-BHC (Lindane)	"	ND	—	21.6	"	"	"	"	"	
alpha-Chlordane [2C]	"	ND	—	21.6	"	"	"	"	"	
gamma-Chlordane	"	ND	—	21.6	"	"	"	"	"	
4,4'-DDD	"	ND	—	43.3	"	"	"	"	"	
4,4'-DDE	"	379	—	43.3	"	"	"	"	"	
4,4'-DDT [2C]	"	ND U	—	43.3	"	"	"	"	"	
Dieldrin	"	ND	—	43.3	"	"	"	"	"	
Endosulfan I	"	ND	—	21.6	"	"	"	"	"	
Endosulfan II	"	ND	—	43.3	"	"	"	"	"	
Endosulfan sulfate	"	ND	—	43.3	"	"	"	"	"	
Endrin	"	ND UJ	— (C)	43.3	"	"	"	"	"	
Endrin aldehyde	"	ND U	—	43.3	"	"	"	"	"	c
Endrin ketone	"	ND	—	43.3	"	"	"	"	"	
Heptachlor	"	ND	—	21.6	"	"	"	"	"	
Heptachlor epoxide	"	ND	—	21.6	"	"	"	"	"	
Hexachlorobenzene [2C]	"	ND	—	21.6	"	"	"	"	"	
Methoxychlor	"	ND	—	43.3	"	"	"	"	"	
Toxaphene	"	ND	—	1080	"	"	"	"	"	
Surrogate(s): TCX [2C]			*88.9%*		*46 - 125 %*	"			"	
Decachlorobiphenyl [2C]			*106%*		*27 - 175 %*	"			"	

Sandra Yakamavich

Sandra Yakamavich, Project Manager

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Amended Report

Environmental Chemical Corp (ECC) 99-1151 Iwaena St. Aiea, HI 96701	Project Name: BP DCA Project Number: 5440.001 Project Manager: Troy Rosenbush	Report Created: 11/15/07 18:07

Organochlorine Pesticides by EPA Method 8081A

TestAmerica - Seattle, WA

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
BQH0146-06 (EL028)		Soil			Sampled: 08/02/07 11:15					
Aldrin	EPA 8081A	ND U	—	20.8	ug/kg dry	20x	7H14015	08/14/07 11:31	08/16/07 02:18	
alpha-BHC	"	ND	—	20.8	"	"	"	"	"	
beta-BHC [2C]	"	ND	—	41.6	"	"	"	"	"	
delta-BHC	"	ND	—	20.8	"	"	"	"	"	
gamma-BHC (Lindane)	"	ND	—	20.8	"	"	"	"	"	
alpha-Chlordane [2C]	"	115 J	— (*XII)	20.8	"	"	"	"	"	R10
gamma-Chlordane	"	114	—	20.8	"	"	"	"	"	
4,4'-DDD	"	55.2	—	41.6	"	"	"	"	"	
4,4'-DDE	"	978	—	41.6	"	"	"	"	"	
Dieldrin [2C]	"	ND U	—	41.6	"	"	"	"	"	R10
Endosulfan I	"	ND	—	20.8	"	"	"	"	"	
Endosulfan II	"	ND	—	41.6	"	"	"	"	"	
Endosulfan sulfate	"	ND	—	41.6	"	"	"	"	"	
Endrin	"	ND UJ	— (c)	41.6	"	"	"	"	"	C
Endrin aldehyde	"	ND U	—	41.6	"	"	"	"	"	
Endrin ketone	"	ND	—	41.6	"	"	"	"	"	
Heptachlor	"	ND	—	20.8	"	"	"	"	"	
Heptachlor epoxide	"	ND	—	20.8	"	"	"	"	"	
Hexachlorobenzene [2C]	"	ND	—	20.8	"	"	"	"	"	
Methoxychlor	"	ND	—	41.6	"	"	"	"	"	
Toxaphene	"	ND	—	1040	"	"	"	"	"	R10
Surrogate(s): TCX [2C]		*81.6%*		*46 - 125 %*	"				"	
Decachlorobiphenyl [2C]		*139%*		*27 - 175 %*	"				"	
BQH0146-06RE1 (EL028)		Soil			Sampled: 08/02/07 11:15					
4,4'-DDT	EPA 8081A	360	—	104	ug/kg dry	50x	7H14015	08/14/07 11:31	08/16/07 20:01	
Surrogate(s): TCX			*NR*		*46 - 125 %*	"			"	*Z3*
Decachlorobiphenyl			*NR*		*27 - 175 %*	"			"	*Z3*
BQH0146-08 (EL030)		Soil			Sampled: 08/02/07 11:40					
Aldrin	EPA 8081A	ND U	—	1.07	ug/kg dry	1x	7H14015	08/14/07 11:31	08/16/07 02:38	
alpha-BHC	"	ND	—	1.07	"	"	"	"	"	
beta-BHC [2C]	"	ND	—	2.14	"	"	"	"	"	
delta-BHC	"	ND	—	1.07	"	"	"	"	"	
gamma-BHC (Lindane)	"	ND	—	1.07	"	"	"	"	"	
alpha-Chlordane [2C]	"	ND	—	1.07	"	"	"	"	"	
gamma-Chlordane	"	ND	—	1.07	"	"	"	"	"	
4,4'-DDD	"	ND	—	2.14	"	"	"	"	"	
4,4'-DDE	"	ND	—	2.14	"	"	"	"	"	
Dieldrin	"	ND	—	2.14	"	"	"	"	"	
Endosulfan I	"	ND	—	1.07	"	"	"	"	"	

TestAmerica - Seattle, WA

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Amended Report

Sandra Yakamavich, Project Manager

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THE LEADER IN ENVIRONMENTAL TESTING

SEATTLE, WA 11720 NORTH CREEK PKWY N, SUITE 400
BOTHELL, WA 98011-8244
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Amended Report

Environmental Chemical Corp (ECC) 99-1151 Iwaena St. Aiea, HI 96701	Project Name: BP DCA Project Number: 5440.001 Project Manager: Troy Rosenbush	Report Created: 11/15/07 18:07

Organochlorine Pesticides by EPA Method 8081A

TestAmerica - Seattle, WA

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
BQH0146-08 (EL030)		Soil			Sampled: 08/02/07 11:40					
Endosulfan II	EPA 8081A	ND U	—	2.14	ug/kg dry	1x	7H14015	08/14/07 11:31	08/16/07 02:38	
Endosulfan sulfate	"	ND	—	2.14	"	"	"	"	"	
Endrin	"	ND UJ	— (c)	2.14	"	"	"	"	"	C
Endrin aldehyde	"	ND U	—	2.14	"	"	"	"	"	
Endrin ketone	"	ND	—	2.14	"	"	"	"	"	
Heptachlor	"	ND	—	1.07	"	"	"	"	"	
Heptachlor epoxide	"	ND	—	1.07	"	"	"	"	"	
Hexachlorobenzene [2C]	"	ND	—	1.07	"	"	"	"	"	
Methoxychlor	"	ND	—	2.14	"	"	"	"	"	
Toxaphene	"	ND	—	53.4	"	"	"	"	"	R10
Surrogate(s): TCX [2C]		*78.1%*			*46 - 125 %*	"			"	
Decachlorobiphenyl [2C]		*81.0%*			*27 - 175 %*	"			"	
BQH0146-08RE1 (EL030)		Soil			Sampled: 08/02/07 11:40					
4,4'-DDT	EPA 8081A	17.2	—	4.28	ug/kg dry	2x	7H14015	08/14/07 11:31	08/16/07 20:21	
Surrogate(s): TCX		*72.2%*			*46 - 125 %*	"			"	
Decachlorobiphenyl		*72.2%*			*27 - 175 %*	"			"	
BQH0146-09 (EL032)		Soil			Sampled: 08/02/07 12:11					
Aldrin	EPA 8081A	ND U	—	1.07	ug/kg dry	1x	7H14015	08/14/07 11:31	08/16/07 02:58	
alpha-BHC	"	ND	—	1.07	"	"	"	"	"	
beta-BHC [2C]	"	ND	—	2.14	"	"	"	"	"	
delta-BHC	"	ND	—	1.07	"	"	"	"	"	
gamma-BHC (Lindane)	"	ND	—	1.07	"	"	"	"	"	
Dieldrin	"	ND	—	2.14	"	"	"	"	"	
Endosulfan I	"	ND	—	1.07	"	"	"	"	"	
Endosulfan II	"	ND	—	2.14	"	"	"	"	"	
Endosulfan sulfate	"	ND	—	2.14	"	"	"	"	"	
Endrin	"	ND UJ	— (c)	2.14	"	"	"	"	"	C
Endrin aldehyde	"	ND U	—	2.14	"	"	"	"	"	
Endrin ketone	"	ND	—	2.14	"	"	"	"	"	
Heptachlor	"	ND	—	1.07	"	"	"	"	"	
Heptachlor epoxide	"	ND	—	1.07	"	"	"	"	"	
Hexachlorobenzene [2C]	"	ND	—	1.07	"	"	"	"	"	
Toxaphene	"	ND	—	53.6	"	"	"	"	"	
Surrogate(s): TCX [2C]		*85.0%*			*46 - 125 %*	"			"	
Decachlorobiphenyl [2C]		*99.8%*			*27 - 175 %*	"			"	

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Amended Report

Environmental Chemical Corp (ECC)	Project Name:	BP DCA	
99-1151 Iwaena St.	Project Number:	5440.001	Report Created:
Aiea, HI 96701	Project Manager:	Troy Rosenbush	11/15/07 18:07

Organochlorine Pesticides by EPA Method 8081A

TestAmerica - Seattle, WA

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
BQH0146-09RE1 (EL032)		Soil			Sampled: 08/02/07 12:11					
alpha-Chlordane [2C]	EPA 8081A	58.6 J	— (K XII)	53.6	ug/kg dry	50x	7H14015	08/14/07 11:31	08/16/07 20:41	R10
gamma-Chlordane	"	60.5	—	53.6	"	"	"	"	"	
4,4'-DDD	"	148	—	107	"	"	"	"	"	
4,4'-DDE	"	662	—	107	"	"	"	"	"	
4,4'-DDT	"	2170	—	107	"	"	"	"	"	
Methoxychlor	"	ND UJ	— (C)	107	"	"	"	"	"	C
Surrogate(s): TCX			*NR*		*46 - 125 %*	"			"	*Z3*
Decachlorobiphenyl			*NR*		*27 - 175 %*	"			"	*Z3*
BQH0146-16 (EL017)		Soil			Sampled: 08/02/07 09:28					
Aldrin	EPA 8081A	ND U	—	1.08	ug/kg dry	1x	7H07075	08/16/07 20:32	08/23/07 16:30	
alpha-BHC	"	ND	—	1.08	"	"	"	"	"	
beta-BHC	"	ND	—	2.16	"	"	"	"	"	
delta-BHC	"	ND	—	1.08	"	"	"	"	"	
gamma-BHC (Lindane)	"	ND	—	1.08	"	"	"	"	"	
alpha-Chlordane [2C]	"	ND	—	1.08	"	"	"	"	"	
gamma-Chlordane	"	ND	—	1.08	"	"	"	"	"	
4,4'-DDD	"	ND	—	2.16	"	"	"	"	"	
4,4'-DDE	"	2.46	—	2.16	"	"	"	"	"	
4,4'-DDT	"	ND U	—	2.16	"	"	"	"	"	R10
Dieldrin [2C]	"	ND	—	2.16	"	"	"	"	"	
Endosulfan I	"	ND	—	1.08	"	"	"	"	"	
Endosulfan II	"	ND	—	2.16	"	"	"	"	"	
Endosulfan sulfate	"	ND	—	2.16	"	"	"	"	"	
Endrin	"	ND	—	2.16	"	"	"	"	"	
Endrin aldehyde	"	ND	—	2.16	"	"	"	"	"	
Endrin ketone	"	ND	—	2.16	"	"	"	"	"	
Heptachlor	"	ND	—	1.08	"	"	"	"	"	
Heptachlor epoxide	"	ND	—	1.08	"	"	"	"	"	
Hexachlorobenzene [2C]	"	ND	—	1.08	"	"	"	"	"	
Methoxychlor	"	ND UJ	— (Q)	2.16	"	"	"	"	"	R10
Toxaphene	"	ND U	—	54.0	"	"	"	"	"	
Surrogate(s): TCX [2C]		*91.4%*			*46 - 125 %*	"			"	
Decachlorobiphenyl [2C]		*90.5%*			*27 - 175 %*	"			"	

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Amended Report

Sandra Yakamavich, Project Manager

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Amended Report

Environmental Chemical Corp (ECC)	Project Name:	BP DCA	
99-1151 Iwaena St.	Project Number:	5440.001	Report Created:
Aiea, HI 96701	Project Manager:	Troy Rosenbush	11/15/07 18:07

Organochlorine Pesticides by EPA Method 8081A

TestAmerica - Seattle, WA

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
BQH0146-21 (EL033)		**Soil**			**Sampled: 08/02/07 12:15**					
Aldrin	EPA 8081A	ND U	—	1.09	ug/kg dry	1x	7H07075	08/16/07 20:32	08/23/07 16:47	
alpha-BHC	"	ND	—	1.09	"	"	"	"	"	
beta-BHC	"	ND	—	2.18	"	"	"	"	"	
delta-BHC	"	ND	—	1.09	"	"	"	"	"	
gamma-BHC (Lindane)	"	ND	—	1.09	"	"	"	"	"	
alpha-Chlordane [2C]	"	6.29 J	—(*XII)	1.09	"	"	"	"	"	R10
gamma-Chlordane	"	6.72	—	1.09	"	"	"	"	"	
4,4'-DDD	"	ND U	—	2.18	"	"	"	"	"	
4,4'-DDE	"	27.6	—	2.18	"	"	"	"	"	
4,4'-DDT	"	26.3	—	2.18	"	"	"	"	"	
Dieldrin [2C]	"	ND U	—	2.18	"	"	"	"	"	
Endosulfan I	"	ND	—	1.09	"	"	"	"	"	
Endosulfan II	"	ND	—	2.18	"	"	"	"	"	
Endosulfan sulfate	"	ND	—	2.18	"	"	"	"	"	
Endrin	"	ND	—	2.18	"	"	"	"	"	
Endrin aldehyde	"	ND	—	2.18	"	"	"	"	"	
Endrin ketone	"	ND	—	2.18	"	"	"	"	"	
Heptachlor	"	ND	—	1.09	"	"	"	"	"	
Heptachlor epoxide	"	ND	—	1.09	"	"	"	"	"	
Hexachlorobenzene [2C]	"	ND	—	1.09	"	"	"	"	"	
Methoxychlor	"	ND	—	2.18	"	"	"	"	"	R10
Toxaphene	"	ND	—	54.5	"	"	"	"	"	
Surrogate(s): TCX [2C]		*86.2%*			*46 - 125 %*	"			"	
Decachlorobiphenyl [2C]		*87.3%*			*27 - 175 %*	"			"	

Sandra Yakamavich

Sandra Yakamavich, Project Manager

Amended Report

"U.S. NAVY PACDIV IRP VALIDATED"

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LDC #: 17891A3a
SDG #: BQH0146
Laboratory: Test America

VALIDATION COMPLETENESS WORKSHEET
Level III

Date: 12/10/07
Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC Chlorinated Pesticides (EPA SW 846 Method 8081A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/2/07
II.	GC/ECD Instrument Performance Check	A	
III.	Initial calibration	A	% RSD, $r^2 \geq 0.990$
IV.	Continuing calibration/ICV	SW	
V.	Blanks	A	
VI.	Surrogate spikes	SW	
VII.	Matrix spike/Matrix spike duplicates	SW	
VIII.	Laboratory control samples	A	LCS
IX.	Regional quality assurance and quality control	N	
Xa.	Florisil cartridge check	N	
Xb.	GPC Calibration	N	
XI.	Target compound identification	N	
XII.	Compound quantitation and reported CRQLs	SW	
XIII.	Overall assessment of data	A	
XIV.	Field duplicates	SW	D = 1+8
XV.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

	1 ✓	EL012 D ✓ (5012)	11	EL025MS	21	7H07075-BLK1	31	
	2	EL016 ✓	12	EL025MSD	22	7H14015-BLK1	32	
	3	EL019 ✓	13	EL017MS	23		33	
	4	EL022 ✓	14	EL017MSD	24		34	
	5 ✓	EL025	15		25		35	
	6	EL028 ✓	16		26		36	
8	7	EL030	17		27		37	
9	8	EL032 D ✓	18		28		38	
16	9	EL017 ✓	19		29		39	
21	10	EL033 ✓	20		30		40	

VALIDATION FINDINGS WORKSHEET

METHOD: Pesticide/PCBs (EPASW 846 Method 8081/8082)

A. alpha-BHC	I. Dieldrin	Q. Endrin ketone	Y. Aroclor-1242	GG.
B. beta-BHC	J. 4,4'-DDE	R. Endrin aldehyde	Z. Aroclor-1248	HH.
C. delta-BHC	K. Endrin	S. alpha-Chlordane	AA. Aroclor-1254	II.
D. gamma-BHC	L. Endosulfan II	T. gamma-Chlordane	BB. Aroclor-1260	JJ.
E. Heptachlor	M. 4,4'-DDD	U. Toxaphene	CC. DB 608	KK.
F. Aldrin	N. Endosulfan sulfate	V. Aroclor-1016	DD. DB 1701	LL.
G. Heptachlor epoxide	O. 4,4'-DDT	W. Aroclor-1221	EE.	MM.
H. Endosulfan I	P. Methoxychlor	X. Aroclor-1232	FF.	NN.

lotes:

LDC #: 17891A3
SDG #: per cover

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: ✓ GC __ HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
What type of continuing calibration calculation was performed? ___%D or ___RPD
Y N N/A Were continuing calibration standards analyzed at the required frequencies?
Y N N/A Did the continuing calibration standards meet the %D / RPD validation criteria of ≤15.0%?
Level IV Only
Y N N/A Were the retention times for all calibrated compounds within their respective acceptance windows?

#	Date	Standard ID	Detector/ Column	Compound	%D / RPD (Limit ≤ 15.0)	RT (limit)	Associated Samples	Qualifications
	8/15/07	7H15008	DB-35MS	K	23	( )	7H14015 - BLK1,	J/UJ/A
						( )	5, 11, 12	
						( )		
						( )		
	8/15/07	7H15015	DB-35MS	K	21.2	( )	1 → 4, 6 → 8	J/UJ/A
						( )		
						( )		
						( )		
	8/16/07	7H16005	DB-35MS	P	10.4	( )	1, 8	J/UJ/A
						( )		
						( )		
						( )		
						( )		
						( )		
						( )		
						( )		
						( )		
						( )		
						( )		
						( )		
						( )		
						( )		
						( )		

LDC #: 17891A3a
SDG #: see cover

VALIDATION FINDINDS WORKSHEET
Surrogate Recovery

Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: ✓ GC __ HPLC
Are surrogates required by the method? Yes____ or No____.
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
(Y) N N/A Were surrogates spiked into all samples and blanks?
Y (N) N/A Did all surrogate recoveries (%R) meet the QC limits?

#	Sample ID	Detector/ Column	Surrogate Compound	%R (Limits)	Qualifications
	1, 6, 9	surrogates outsid limit		( )	no qual 72x DIL
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	

	Surrogate Compound		Surrogate Compound		Surrogate Compound		Surrogate Compound
A	Chlorobenzene (CBZ)	G	Octacosane	M	Benzo(e)Pyrene	S	1-Chloro-3-Nitrobenzene
B	4-Bromofluorobenzene (BFB)	H	Ortho-Terphenyl	N	Terphenyl-D14	T	3,4-Dinitrotoluene
C	a,a,a-Trifluorotoluene	I	Fluorobenzene (FBZ)	O	Decafluorobiphenyl (DCB)	U	Tripentyltin
D	Bromochlorobenene	J	n-Triacontane	P	1-methylnaphthalene	V	Tri-n-propyltin
E	1,4-Dichlorobutane	K	Hexacosane	Q	Dichlorophenyl Acetic Acid (DCAA)	W	Tributyl Phosphate
F	1,4-Difluorobenzene (DFB)	L	Bromobenzene	R	4-Nitrophenol	X	Triphenyl Phosphate

LDC #: 17891A3a
SDG #: per cover

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC/~~MS BNA~~ (EPA SW 846 Method ~~8270~~) 8081A

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.

Y N N/A Was a MS/MSD analyzed every 20 samples of each matrix?

Y N N/A Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?

#	Date	MS/MSD ID	Compound	MS %R (Limits)	MSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
		13 + 14	P	( )	1180 (14-163)	170 (35)	9	J/UJ/A- (LCS in)
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )	— — —	—
				( )	( )	( )		
				( )	( )	( )		
		11 & 12	several compounds	% Recovery were outside limit			5	no QUA 7 ex PIL
			C	( )	( )	43.4 (35)		none /A
			N	( )	( )	46.4 ( )		
			R	( )	( )	53.6 ( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		

	Compound	QC Limits (Soil)	RPD (Soil)	QC Limits (Water)	RPD (Water)		Compound	QC Limits (Soil)	RPD (Soil)	QC Limits (Water)	RPD (Water)
A.	Phenol	26-90%	≤ 35%	12-110%	≤ 42%	GG.	Acenaphthene	31-137%	≤ 19%	46-118%	≤ 31%
C.	2-Chlorophenol	25-102%	≤ 50%	27-123%	≤ 40%	II.	4-Nitrophenol	11-114%	≤ 50%	10-80%	≤ 50%
E.	1,4-Dichlorobenzene	28-104%	≤ 27%	36-97%	≤ 28%	KK.	2,4-Dinitrotoluene	28-89%	≤ 47%	24-96%	≤ 38%
J.	N-Nitroso-di-n-propylamine	41-126%	≤ 38%	41-116%	≤ 38%	TT.	Pentachlorophenol	17-109%	≤ 47%	9-103%	≤ 50%
R.	1,2,4-Trichlorobenzene	38-107%	≤ 23%	39-98%	≤ 28%	ZZ.	Pyrene	35-142%	≤ 36%	26-127%	≤ 31%
V.	4-Chloro-3-methylphenol	26-103%	≤ 33%	23-97%	≤ 42%						

LDC #: 17891A3a
SDG #: per cover

VALIDATION FINDINGS WORKSHEET
Compound Quantitation and Reported CRQLs

Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: ___ GC ___ HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
Level IV/D Only
Y N N/A Were CRQLs adjusted for sample dilutions, dry weight factors, etc.?
Y N N/A Did the reported results for detected target compounds agree within 10.0% of the recalculated results?

#	Compound Name	% ~~RPD~~ D Between 2 column ±25 Finding	Associated Samples	Qualifications
	S	~~72~~ 111	1	NJ/A dit
	S	98	6	J/A dit
	S	62	8	J/A dit
	~~M~~	~~31~~		
	S	61	10	J/A dit

Comments: See sample calculation verification worksheet for recalculations

LDC #: 17891A3a
SDG #: see cover

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 1 of 1
Reviewer: B
2nd reviewer: K

METHOD: ___ GC ___ HPLC

Y N N/A Were field duplicate pairs identified in this SDG?
Y N N/A Were target compounds detected in the field duplicate pairs?

Compound	Concentration (ug/kg)		%RPD Limit 100	Qualification Parent only / All Samples
	1	8		
S	72.8	58.6	22	
T	76.3	60.5	23	
M	91.5	148	47	
J	678	662	5	
O	211	2170	164	

Compound	Concentration ( )		%RPD Limit _____	Qualification Parent only / All Samples

LDC Report# 17891B3a

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: NAS Barbers Point, CTO 001

Collection Date: July 2, 2007

LDC Report Date: December 12, 2007

Matrix: Soil

Parameters: Chlorinated Pesticides

Validation Level: PACDIV QC Level D

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): BQG0073

Sample Identification

EL001
EL002
EL003
EL004
EL005
EL006
EL007
EL008
EL003MS
EL003MSD

Introduction

This data review covers 10 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8081A for Chlorinated Pesticides.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) and the Project Procedures Manual, U.S. Navy PACDIV Installation Restoration Program (IRP), October 1998.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified a P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XIV.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/ECD Instrument Performance Check

Instrument performance was acceptable unless noted otherwise under initial calibration and continuing calibration sections.

III. Initial Calibration

Initial calibration of single and multicomponent compounds was performed for the primary (quantitation) column and confirmation column as required by this method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for selected compounds.

A curve fit, based on the initial calibration, was established for quantitation for selected compounds. The coefficient of determination (r^2) was greater than or equal to 0.990 .

Retention time windows were evaluated and considered technically acceptable.

IV. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) of calibration factors in continuing standard mixtures were within the 15.0% QC limits with the following exceptions:

Date	Standard	Column	Compound	%D	Associated Samples	Flag	A or P
7/14/07	7G14021	DB-35MS	Endrin	18.0	7G12009-BLK1	J (all detects) UJ (all non-detects)	A

Retention times (RT) of all compounds in the calibration standards were within QC limits

The individual 4,4'-DDT and Endrin breakdowns (%BD) were less than or equal to 15.0%.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No chlorinated pesticide contaminants were found in the method blanks.

No field blanks were identified in this SDG.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. Surrogate recoveries (%R) were not within QC limits for several samples in this SDG. Since these samples were diluted out, no data were qualified.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
EL003MS/MSD (EL003)	4,4'-DDD	-	-	61.8 (≤35)	None	A
	4,4'-DDE	-	-	130 (≤35)	None	
	4,4'-DDT	-	-	149 (≤35)	None	
	Endosulfan I	-	-	53.1 (≤35)	None	

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Pesticide Cleanup Checks

a. Florisil Cartridge Check

Florisil cleanup was not required and therefore not performed in this SDG.

b. GPC Calibration

GPC cleanup was not required and therefore not performed in this SDG.

XI. Target Compound Identification

All target compound identifications were within validation criteria.

XII. Compound Quantitation and Reported CRQLs

All compound quantitation and CRQLs were within validation criteria.

The sample results for detected compounds from the two columns were within 25% difference with the following exceptions:

Sample	Compound	%D	Flag	A or P
EL003	alpha-Chlordane	122	NJ (all detects)	A
EL005	alpha-Chlordane	151	NJ (all detects)	A
EL008	4,4'-DDT	36	J (all detects)	A

XIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XIV. Field Duplicates

Samples EL001 and EL002 were identified as field duplicates. No chlorinated pesticides were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/Kg)		RPD (Limits)
	EL001	EL002	
4,4'-DDE	610	941	43 (≤100)

NAS Barbers Point, CTO 001
Chlorinated Pesticides - Data Qualification Summary - SDG BQG0073

SDG	Sample	Compound	Flag	A or P	Reason
BQG0073	EL003 EL005	alpha-Chlordane	NJ (all detects)	A	Compound quantitation and CRQLs (%D)
BQG0073	EL008	4,4'-DDT	J (all detects)	A	Compound quantitation and CRQLs (%D)

NAS Barbers Point, CTO 001
Chlorinated Pesticides - Laboratory Blank Data Qualification Summary - SDG BQG0073

No Sample Data Qualified in this SDG

NAS Barbers Point, CTO 001
Chlorinated Pesticides - Field Blank Data Qualification Summary - SDG BQG0073

No Sample Data Qualified in this SDG

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Amended Report

Environmental Chemical Corp (ECC) 99-1151 Iwaena St. Aiea, HI 96701	Project Name: **BP DCA** Project Number: 5440.001 Project Manager: Troy Rosenbush	Report Created: 08/27/07 14:25

Organochlorine Pesticides by EPA Method 8081A

TestAmerica - Seattle, WA

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
BQG0073-01 (EL001)		Soil			Sampled: 07/02/07 10:30					
Aldrin [2C]	EPA 8081A	ND U	—	51.7	ug/kg dry	50x	7G12009	07/12/07 09:02	07/17/07 22:19	
alpha-BHC [2C]	"	ND	—	51.7	"	"	"	"	"	
beta-BHC [2C]	"	ND	—	103	"	"	"	"	"	
delta-BHC [2C]	"	ND	—	51.7	"	"	"	"	"	
gamma-BHC (Lindane) [2C]	"	ND	—	51.7	"	"	"	"	"	
alpha-Chlordane [2C]	"	ND	—	51.7	"	"	"	"	"	
gamma-Chlordane [2C]	"	ND	—	51.7	"	"	"	"	"	
4,4'-DDD [2C]	"	ND	—	103	"	"	"	"	"	
4,4'-DDE [2C]	"	**610**	—	103	"	"	"	"	"	
4,4'-DDT [2C]	"	ND U	—	103	"	"	"	"	"	
Dieldrin [2C]	"	ND	—	103	"	"	"	"	"	
Endosulfan I [2C]	"	ND	—	51.7	"	"	"	"	"	
Endosulfan II [2C]	"	ND	—	103	"	"	"	"	"	
Endosulfan sulfate [2C]	"	ND	—	103	"	"	"	"	"	
Endrin [2C]	"	ND	—	103	"	"	"	"	"	
Endrin aldehyde [2C]	"	ND	—	103	"	"	"	"	"	
Endrin ketone [2C]	"	ND	—	103	"	"	"	"	"	
Heptachlor [2C]	"	ND	—	51.7	"	"	"	"	"	
Heptachlor epoxide [2C]	"	ND	—	51.7	"	"	"	"	"	
Hexachlorobenzene [2C]	"	ND	—	51.7	"	"	"	"	"	
Methoxychlor [2C]	"	ND	—	103	"	"	"	"	"	
Toxaphene [2C]	"	ND	—	2580	"	"	"	"	"	
Surrogate(s): TCX [2C]			*NR*		*46 - 125 %*	"			"	*Z3*
Decachlorobiphenyl [2C]			*NR*		*27 - 175 %*	"			"	*Z3*
BQG0073-02 (EL002)		Soil			Sampled: 07/02/07 10:40					
Aldrin [2C]	EPA 8081A	ND U	—	103	ug/kg dry	100x	7G12009	07/12/07 09:02	07/17/07 22:39	
alpha-BHC [2C]	"	ND	—	103	"	"	"	"	"	
beta-BHC [2C]	"	ND	—	206	"	"	"	"	"	
delta-BHC [2C]	"	ND	—	103	"	"	"	"	"	
gamma-BHC (Lindane) [2C]	"	ND	—	103	"	"	"	"	"	
alpha-Chlordane [2C]	"	ND	—	103	"	"	"	"	"	
gamma-Chlordane [2C]	"	ND	—	103	"	"	"	"	"	
4,4'-DDD [2C]	"	ND	—	206	"	"	"	"	"	
4,4'-DDE [2C]	"	**941**	—	206	"	"	"	"	"	
4,4'-DDT [2C]	"	ND U	—	206	"	"	"	"	"	
Dieldrin [2C]	"	ND	—	206	"	"	"	"	"	
Endosulfan I [2C]	"	ND	—	103	"	"	"	"	"	
Endosulfan II [2C]	"	ND	—	206	"	"	"	"	"	
Endosulfan sulfate [2C]	"	ND	—	206	"	"	"	"	"	
Endrin [2C]	"	ND	—	206	"	"	"	"	"	
Endrin aldehyde [2C]	"	ND	—	206	"	"	"	"	"	

TestAmerica - Seattle, WA

Kate Haney

Kate Haney For Sandra Yakamavich, Project Manager

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Amended Report

Environmental Chemical Corp (ECC) 99-1151 Iwaena St. Aiea, HI 96701	Project Name: **BP DCA** Project Number: 5440.001 Project Manager: Troy Rosenbush	Report Created: 08/27/07 14:25

Organochlorine Pesticides by EPA Method 8081A

TestAmerica - Seattle, WA

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
BQG0073-02 (EL002)		**Soil**			**Sampled: 07/02/07 10:40**					
Endrin ketone [2C]	EPA 8081A	ND U	—	206	ug/kg dry	100x	7G12009	07/12/07 09:02	07/17/07 22:39	
Heptachlor [2C]	"	ND	—	103	"	"	"	"	"	
Heptachlor epoxide [2C]	"	ND	—	103	"	"	"	"	"	
Hexachlorobenzene [2C]	"	ND	—	103	"	"	"	"	"	
Methoxychlor [2C]	"	ND	—	206	"	"	"	"	"	
Toxaphene [2C]	"	ND	—	5160	"	"	"	"	"	
Surrogate(s): TCX [2C]			*NR*		*46 - 125 %*	"			"	*Z3*
Decachlorobiphenyl [2C]			*NR*		*27 - 175 %*	"			"	*Z3*
BQG0073-03 (EL003)		**Soil**			**Sampled: 07/02/07 10:50**					
Aldrin [2C]	EPA 8081A	ND U	—	10.4	ug/kg dry	10x	7G12009	07/12/07 09:02	07/17/07 21:58	
alpha-BHC [2C]	"	ND	—	10.4	"	"	"	"	"	
beta-BHC [2C]	"	ND	—	20.8	"	"	"	"	"	
delta-BHC [2C]	"	ND	—	10.4	"	"	"	"	"	
gamma-BHC (Lindane) [2C]	"	ND	—	10.4	"	"	"	"	"	
alpha-Chlordane [2C]	"	**11.5**	(*XII)	10.4	"	"	"	"	"	R10
gamma-Chlordane [2C]	"	**11.9**	—	10.4	"	"	"	"	"	
4,4'-DDD [2C]	"	ND U	—	20.8	"	"	"	"	"	
4,4'-DDE [2C]	"	**39.0**	—	20.8	"	"	"	"	"	
4,4'-DDT [2C]	"	ND U	—	20.8	"	"	"	"	"	
Dieldrin [2C]	"	ND	—	20.8	"	"	"	"	"	
Endosulfan I [2C]	"	ND	—	10.4	"	"	"	"	"	
Endosulfan II [2C]	"	ND	—	20.8	"	"	"	"	"	
Endosulfan sulfate [2C]	"	ND	—	20.8	"	"	"	"	"	
Endrin [2C]	"	ND	—	20.8	"	"	"	"	"	
Endrin aldehyde [2C]	"	ND	—	20.8	"	"	"	"	"	
Endrin ketone [2C]	"	ND	—	20.8	"	"	"	"	"	
Heptachlor [2C]	"	ND	—	10.4	"	"	"	"	"	
Heptachlor epoxide [2C]	"	ND	—	10.4	"	"	"	"	"	
Hexachlorobenzene [2C]	"	ND	—	10.4	"	"	"	"	"	
Methoxychlor [2C]	"	ND	—	20.8	"	"	"	"	"	
Toxaphene [2C]	"	ND	—	520	"	"	"	"	"	
Surrogate(s): TCX [2C]			*74.8%*		*46 - 125 %*	"			"	
Decachlorobiphenyl [2C]			*177%*		*27 - 175 %*	"			"	*ZX*

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report shall not be reproduced except in full, without the written approval of the laboratory.

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Amended Report

Environmental Chemical Corp (ECC) 99-1151 Iwaena St. Aiea, HI 96701	Project Name: **BP DCA** Project Number: 5440.001 Project Manager: Troy Rosenbush	Report Created: 08/27/07 14:25

Organochlorine Pesticides by EPA Method 8081A

TestAmerica - Seattle, WA

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
BQG0073-04 (EL004)		**Soil**			**Sampled: 07/02/07 10:55**					
Aldrin [2C]	EPA 8081A	ND U	—	516	ug/kg dry	500x	7G12009	07/12/07 09:02	07/17/07 22:59	
alpha-BHC [2C]	"	ND	—	516	"	"	"	"	"	
beta-BHC [2C]	"	ND	—	1030	"	"	"	"	"	
delta-BHC [2C]	"	ND	—	516	"	"	"	"	"	
gamma-BHC (Lindane) [2C]	"	ND	—	516	"	"	"	"	"	
alpha-Chlordane [2C]	"	ND	—	516	"	"	"	"	"	
gamma-Chlordane [2C]	"	ND	—	516	"	"	"	"	"	
4,4'-DDD [2C]	"	ND	—	1030	"	"	"	"	"	
4,4'-DDE [2C]	"	**6180**	—	1030	"	"	"	"	"	
4,4'-DDT [2C]	"	**1460**	—	1030	"	"	"	"	"	
Dieldrin [2C]	"	ND U	—	1030	"	"	"	"	"	
Endosulfan I [2C]	"	ND	—	516	"	"	"	"	"	
Endosulfan II [2C]	"	ND	—	1030	"	"	"	"	"	
Endosulfan sulfate [2C]	"	ND	—	1030	"	"	"	"	"	
Endrin [2C]	"	ND	—	1030	"	"	"	"	"	
Endrin aldehyde [2C]	"	ND	—	1030	"	"	"	"	"	
Endrin ketone [2C]	"	ND	—	1030	"	"	"	"	"	
Heptachlor [2C]	"	ND	—	516	"	"	"	"	"	
Heptachlor epoxide [2C]	"	ND	—	516	"	"	"	"	"	
Hexachlorobenzene [2C]	"	ND	—	516	"	"	"	"	"	
Methoxychlor [2C]	"	ND	—	1030	"	"	"	"	"	
Toxaphene [2C]	"	ND	—	25800	"	"	"	"	"	
Surrogate(s): TCX [2C]			*NR*		*46 - 125 %*	"			"	*Z3*
Decachlorobiphenyl [2C]			*NR*		*27 - 175 %*	"			"	*Z3*
BQG0073-05 (EL005)		**Soil**			**Sampled: 07/02/07 11:00**					
Aldrin [2C]	EPA 8081A	ND U	—	104	ug/kg dry	100x	7G12009	07/12/07 09:02	07/17/07 23:20	
alpha-BHC [2C]	"	ND	—	104	"	"	"	"	"	
beta-BHC [2C]	"	ND	—	207	"	"	"	"	"	
delta-BHC [2C]	"	ND	—	104	"	"	"	"	"	
gamma-BHC (Lindane) [2C]	"	ND	—	104	"	"	"	"	"	
alpha-Chlordane [2C]	"	**325** NJ	(*XI)	104	"	"	"	"	"	R10
gamma-Chlordane [2C]	"	**444**	—	104	"	"	"	"	"	
4,4'-DDD [2C]	"	**607**	—	207	"	"	"	"	"	
4,4'-DDE [2C]	"	**1250**	—	207	"	"	"	"	"	
4,4'-DDT [2C]	"	**400**	—	207	"	"	"	"	"	
Dieldrin [2C]	"	ND U	—	207	"	"	"	"	"	
Endosulfan I [2C]	"	ND	—	104	"	"	"	"	"	
Endosulfan II [2C]	"	ND	—	207	"	"	"	"	"	
Endosulfan sulfate [2C]	"	ND	—	207	"	"	"	"	"	
Endrin [2C]	"	ND	—	207	"	"	"	"	"	

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Amended Report

Kate Haney For Sandra Yakamavich, Project Manager

"U.S. NAVY PACDIV IRP VALIDATED"
LEVEL D

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

SEATTLE, WA 11720 NORTH CREEK PKWY N, SUITE 400
BOTHELL, WA 98011-8244
PH: (425) 420.9200 FAX: (425) 420.9210

Amended Report

Environmental Chemical Corp (ECC) 99-1151 Iwaena St. Aiea, HI 96701	Project Name: **BP DCA** Project Number: 5440.001 Project Manager: Troy Rosenbush	Report Created: 08/27/07 14:25

Organochlorine Pesticides by EPA Method 8081A

TestAmerica - Seattle, WA

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
BQG0073-05 (EL005)		**Soil**			**Sampled: 07/02/07 11:00**					
Endrin aldehyde [2C]	EPA 8081A	ND U	—	207	ug/kg dry	100x	7G12009	07/12/07 09:02	07/17/07 23:20	
Endrin ketone [2C]	"	ND	—	207	"	"	"	"	"	
Heptachlor [2C]	"	ND	—	104	"	"	"	"	"	
Heptachlor epoxide [2C]	"	ND	—	104	"	"	"	"	"	
Hexachlorobenzene [2C]	"	ND	—	104	"	"	"	"	"	
Methoxychlor [2C]	"	ND	—	207	"	"	"	"	"	
Toxaphene [2C]	"	ND	—	5180	"	"	"	"	"	
Surrogate(s): TCX [2C]			*NR*		*46 - 125 %*	"			"	*Z3*
Decachlorobiphenyl [2C]			*NR*		*27 - 175 %*	"			"	*Z3*
BQG0073-06 (EL006)		**Soil**			**Sampled: 07/02/07 11:05**					
Aldrin [2C]	EPA 8081A	ND U	—	519	ug/kg dry	500x	7G12009	07/12/07 09:02	07/17/07 23:40	
alpha-BHC [2C]	"	ND	—	519	"	"	"	"	"	
beta-BHC [2C]	"	ND	—	1040	"	"	"	"	"	
delta-BHC [2C]	"	ND	—	519	"	"	"	"	"	
gamma-BHC (Lindane) [2C]	"	ND	—	519	"	"	"	"	"	
alpha-Chlordane [2C]	"	ND	—	519	"	"	"	"	"	
gamma-Chlordane [2C]	"	ND	—	519	"	"	"	"	"	
4,4'-DDD [2C]	"	ND	—	1040	"	"	"	"	"	
4,4'-DDE [2C]	"	**5550**	—	1040	"	"	"	"	"	
4,4'-DDT [2C]	"	**2650**	—	1040	"	"	"	"	"	
Dieldrin [2C]	"	ND U	—	1040	"	"	"	"	"	
Endosulfan I [2C]	"	ND	—	519	"	"	"	"	"	
Endosulfan II [2C]	"	ND	—	1040	"	"	"	"	"	
Endosulfan sulfate [2C]	"	ND	—	1040	"	"	"	"	"	
Endrin [2C]	"	ND	—	1040	"	"	"	"	"	
Endrin aldehyde [2C]	"	ND	—	1040	"	"	"	"	"	
Endrin ketone [2C]	"	ND	—	1040	"	"	"	"	"	
Heptachlor [2C]	"	ND	—	519	"	"	"	"	"	
Heptachlor epoxide [2C]	"	ND	—	519	"	"	"	"	"	
Hexachlorobenzene [2C]	"	ND	—	519	"	"	"	"	"	
Methoxychlor [2C]	"	ND	—	1040	"	"	"	"	"	
Toxaphene [2C]	"	ND	—	25900	"	"	"	"	"	
Surrogate(s): TCX [2C]			*NR*		*46 - 125 %*	"			"	*Z3*
Decachlorobiphenyl [2C]			*NR*		*27 - 175 %*	"			"	*Z3*

Kate Haney

Kate Haney For Sandra Yakamavich, Project Manager

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"U.S. NAVY PACDIV IRP VALIDATED"
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TestAmerica
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PH: (425) 420.9200 FAX: (425) 420.9210

Amended Report

Environmental Chemical Corp (ECC) 99-1151 Iwaena St. Aiea, HI 96701	Project Name: BP DCA Project Number: 5440.001 Project Manager: Troy Rosenbush	Report Created: 08/27/07 14:25

Organochlorine Pesticides by EPA Method 8081A

TestAmerica - Seattle, WA

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
BQG0073-07 (EL007)		Soil			Sampled: 07/02/07 11:10					
Aldrin [2C]	EPA 8081A	ND U	—	516	ug/kg dry	500x	7G12009	07/12/07 09:02	07/18/07 00:00	
alpha-BHC [2C]	"	ND	—	516	"	"	"	"	"	
beta-BHC [2C]	"	ND	—	1030	"	"	"	"	"	
delta-BHC [2C]	"	ND	—	516	"	"	"	"	"	
gamma-BHC (Lindane) [2C]	"	ND	—	516	"	"	"	"	"	
alpha-Chlordane [2C]	"	ND	—	516	"	"	"	"	"	
gamma-Chlordane [2C]	"	ND	—	516	"	"	"	"	"	
4,4'-DDD [2C]	"	ND	—	1030	"	"	"	"	"	
4,4'-DDE [2C]	"	**2410**	—	1030	"	"	"	"	"	
4,4'-DDT [2C]	"	ND U	—	1030	"	"	"	"	"	
Dieldrin [2C]	"	ND	—	1030	"	"	"	"	"	
Endosulfan I [2C]	"	ND	—	516	"	"	"	"	"	
Endosulfan II [2C]	"	ND	—	1030	"	"	"	"	"	
Endosulfan sulfate [2C]	"	ND	—	1030	"	"	"	"	"	
Endrin [2C]	"	ND	—	1030	"	"	"	"	"	
Endrin aldehyde [2C]	"	ND	—	1030	"	"	"	"	"	
Endrin ketone [2C]	"	ND	—	1030	"	"	"	"	"	
Heptachlor [2C]	"	ND	—	516	"	"	"	"	"	
Heptachlor epoxide [2C]	"	ND	—	516	"	"	"	"	"	
Hexachlorobenzene [2C]	"	ND	—	516	"	"	"	"	"	
Methoxychlor [2C]	"	ND	—	1030	"	"	"	"	"	
Toxaphene [2C]	"	ND	—	25800	"	"	"	"	"	
Surrogate(s): TCX [2C]			*NR*		*46 - 125 %*	"			"	*Z3*
Decachlorobiphenyl [2C]			*NR*		*27 - 175 %*	"			"	*Z3*
BQG0073-08 (EL008)		Soil			Sampled: 07/02/07 11:15					
Aldrin [2C]	EPA 8081A	ND U	—	10.3	ug/kg dry	10x	7G12009	07/12/07 09:02	07/17/07 21:39	
alpha-BHC [2C]	"	ND	—	10.3	"	"	"	"	"	
beta-BHC [2C]	"	ND	—	20.6	"	"	"	"	"	
delta-BHC [2C]	"	ND	—	10.3	"	"	"	"	"	
gamma-BHC (Lindane) [2C]	"	ND	—	10.3	"	"	"	"	"	
alpha-Chlordane [2C]	"	ND	—	10.3	"	"	"	"	"	
gamma-Chlordane [2C]	"	ND	—	10.3	"	"	"	"	"	
4,4'-DDD [2C]	"	ND	—	20.6	"	"	"	"	"	
4,4'-DDE [2C]	"	**41.1**	—	20.6	"	"	"	"	"	
4,4'-DDT [2C]	"	**28.9** J	(*XII)	20.6	"	"	"	"	"	
Dieldrin [2C]	"	ND U	—	20.6	"	"	"	"	"	
Endosulfan I [2C]	"	ND	—	10.3	"	"	"	"	"	
Endosulfan II [2C]	"	ND	—	20.6	"	"	"	"	"	
Endosulfan sulfate [2C]	"	ND	—	20.6	"	"	"	"	"	
Endrin [2C]	"	ND	—	20.6	"	"	"	"	"	
Endrin aldehyde [2C]	"	ND	—	20.6	"	"	"	"	"	

TestAmerica - Seattle, WA

Kate Haney

Kate Haney For Sandra Yakamavich, Project Manager

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Amended Report

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Amended Report

Environmental Chemical Corp (ECC) 99-1151 Iwaena St. Aiea, HI 96701	Project Name: **BP DCA** Project Number: 5440.001 Project Manager: Troy Rosenbush	Report Created: 08/27/07 14:25

Organochlorine Pesticides by EPA Method 8081A

TestAmerica - Seattle, WA

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
BQG0073-08 (EL008)		**Soil**			**Sampled: 07/02/07 11:15**					
Endrin ketone [2C]	EPA 8081A	ND U	----	20.6	ug/kg dry	10x	7G12009	07/12/07 09:02	07/17/07 21:39	
Heptachlor [2C]	"	ND	----	10.3	"	"	"	"	"	
Heptachlor epoxide [2C]	"	ND	----	10.3	"	"	"	"	"	
Hexachlorobenzene [2C]	"	ND	----	10.3	"	"	"	"	"	
Methoxychlor [2C]	"	ND	----	20.6	"	"	"	"	"	
Toxaphene [2C]	"	ND	----	515	"	"	"	"	"	
Surrogate(s): TCX [2C]			*87.5%*		*46 - 125 %*	"			"	
Decachlorobiphenyl [2C]			*102%*		*27 - 175 %*	"			"	

Kate Haney

Kate Haney For Sandra Yakamavich, Project Manager

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Amended Report

"U.S. NAVY PACDIV IRP VALIDATED"
LEVEL D

LDC #: 17891B3a
SDG #: BQG0073
Laboratory: Test America

VALIDATION COMPLETENESS WORKSHEET

Level ~~III~~ IV

Date: 12/10/07
Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC Chlorinated Pesticides (EPA SW 846 Method 8081A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/2/07
II.	GC/ECD Instrument Performance Check	A	
III.	Initial calibration A	~~SW~~	% RSD, r² ≥0.990
IV.	Continuing calibration/ICV	SW	
V.	Blanks	A	
VI.	Surrogate spikes	SW	
VII.	Matrix spike/Matrix spike duplicates	SW	
VIII.	Laboratory control samples	A	LCS
IX.	Regional quality assurance and quality control	N	
Xa.	Florisil cartridge check	N	
Xb.	GPC Calibration	N	
XI.	Target compound identification	N	
XII.	Compound quantitation and reported CRQLs	SW	
XIII.	Overall assessment of data	A	
XIV.	Field duplicates	SW	D = 1 + 2
XV.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

soil

1	EL001 D ✓	11	7G/2009-BLK1	21		31	
2	EL002 D ✓	12		22		32	
3	EL003 ✓	13		23		33	
4	EL004 ✓	14		24		34	
5	EL005 ✓	15		25		35	
6	EL006	16		26		36	
7	EL007	17		27		37	
8	EL008	18		28		38	
9	EL003MS	19		29		39	
10	EL003MSD	20		30		40	

LDC #: 17891B3s
SDG #: see cover

VALIDATION FINDINGS CHECKLIST

Page: 1 of 2
Reviewer:
2nd Reviewer:

Method: Pesticides/PCBs (EPA SW 846 Method 8081/8082)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. GC/ECD instrument performance check				
Was the instrument performance found to be acceptable?	✓			
III. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Was a linear fit used for evaluation? If yes, were all percent relative standard deviations (%RSD) ≤ 20%?	✓			
Was a curve fit used for evaluation? If Yes, what was the acceptance criteria used?	✓			
Did the initial calibration meet the curve fit acceptance criteria?	✓			
Were the RT windows properly established?	✓			
Were the required standard concentrations analyzed in the initial calibration?	✓			
IV. Continuing calibration				
What type of continuing calibration calculation was performed? ____%D or ____%R	✓			
Were Evaluation mix standards analyzed prior to the initial calibration and sample analysis?	✓			
Were endrin and 4,4'-DDT breakdowns ≤ 15%.0 for individual breakdown in the Evaluation mix standards?	✓			
Was a continuing calibration analyzed daily?	✓			
Were all percent differences (%D) ≤ 15%.0 or percent recovieries 85-115%?		✓		
Were all the retention times within the acceptance windows?	✓			
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed for each matrix and concentration?	✓			
Were extract cleanup blanks analyzed with every batch requiring clean-up?			✓	
Was there contamination in the method blanks or clean-up blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
VI. Surrogate spikes				
Were all surrogate %R within the QC limits?		✓		
If the percent recovery (%R) of one or more surrogates was outside QC limits, was a reanalysis performed to confirm %R?		✓		
If any %R was less than 10 percent, was a reanalysis performed to confirm %R?			✓	

LDC #: 17891B3c
SDG #: see cover

VALIDATION FINDINGS CHECKLIST

Reviewer: B
2nd Reviewer: d

Validation Area	Yes	No	NA	Findings/Comments
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.	✓			
Was a MS/MSD analyzed every 20 samples of each matrix?	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?		✓		
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?			✓	
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
X. Target compound identification				
Were the retention times of reported detects within the RT windows?	✓			
XI. Compound quantitation/CRQLs				
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions, dry weight factors, and clean-up activities applicable to level IV validation?	✓			
XII. System performance				
System performance was found to be acceptable.	✓			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XIV. Field duplicates				
Field duplicate pairs were identified in this SDG.	✓			
Target compounds were detected in the field duplicates.	✓			
XV. Field blanks				
Field blanks were identified in this SDG.		✓		
Target compounds were detected in the field blanks.			✓	

VALIDATION FINDINGS WORKSHEET

METHOD: Pesticide/PCBs (EPASW 846 Method 8081/8082)

A. alpha-BHC	I. Dieldrin	Q. Endrin ketone	Y. Aroclor-1242	GG.
B. beta-BHC	J. 4,4'-DDE	R. Endrin aldehyde	Z. Aroclor-1248	HH.
C. delta-BHC	K. Endrin	S. alpha-Chlordane	AA. Aroclor-1254	II.
D. gamma-BHC	L. Endosulfan II	T. gamma-Chlordane	BB. Aroclor-1260	JJ.
E. Heptachlor	M. 4,4'-DDD	U. Toxaphene	CC. DB 608	KK.
F. Aldrin	N. Endosulfan sulfate	V. Aroclor-1016	DD. DB 1701	LL.
G. Heptachlor epoxide	O. 4,4'-DDT	W. Aroclor-1221	EE.	MM.
H. Endosulfan I	P. Methoxychlor	X. Aroclor-1232	FF.	NN.

Notes:_____

LDC #: 1789IB3a
SDG #: pre cover

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Page: 1 of 1
Reviewer: B
2nd Reviewer: U

METHOD: ✓ GC ___ HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
What type of continuing calibration calculation was performed? ___%D or ___RPD

Y N N/A Were continuing calibration standards analyzed at the required frequencies?
Y N N/A Did the continuing calibration standards meet the %D / RPD validation criteria of ≤15.0%?

Level IV Only

Y N N/A Were the retention times for all calibrated compounds within their respective acceptance windows?

#	Date	Standard ID	Detector/ Column	Compound	%D / RPD (Limit ≤ 15.0)	RT (limit)	Associated Samples	Qualifications
	7/14/07	791402 1	DB-35MS	K	18.0	( )	7912009-BK1	J/UJ/A
						( )		
						( )		
						( )		
						( )		
						( )		
						( )		
						( )		
						( )		
						( )		
						( )		
						( )		
						( )		
						( )		
						( )		
						( )		
						( )		
						( )		
						( )		
						( )		
						( )		
						( )		

LDC #: 17891B3a
SDG #: see cover

VALIDATION FINDINDS WORKSHEET
Surrogate Recovery

Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: __ GC __ HPLC

Are surrogates required by the method? Yes____ or No____.

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

(Y) N N/A Were surrogates spiked into all samples and blanks?

Y (N) N/A Did all surrogate recoveries (%R) meet the QC limits?

#	Sample ID	Detector/ Column	Surrogate Compound	%R (Limits)	Qualifications
	~~1, 2, 4~~			( )	
				( )	
	1→7	surrogate	outside limit	( )	no qual 72X D/L
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	

	Surrogate Compound		Surrogate Compound		Surrogate Compound		Surrogate Compound
A	Chlorobenzene (CBZ)	G	Octacosane	M	Benzo(e)Pyrene	S	1-Chloro-3-Nitrobenzene
B	4-Bromofluorobenzene (BFB)	H	Ortho-Terphenyl	N	Terphenyl-D14	T	3,4-Dinitrotoluene
C	a,a,a-Trifluorotoluene	I	Fluorobenzene (FBZ)	O	Decafluorobiphenyl (DCB)	U	Tripentyltin
D	Bromochlorobenene	J	n-Triacontane	P	1-methylnaphthalene	V	Tri-n-propyltin
E	1,4-Dichlorobutane	K	Hexacosane	Q	Dichlorophenyl Acetic Acid (DCAA)	W	Tributyl Phosphate
F	1,4-Difluorobenzene (DFB)	L	Bromobenzene	R	4-Nitrophenol	X	Triphenyl Phosphate

LDC #: 17891B3a
SDG #: see cover

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC Pesticides/PCBs (EPA SW 846 Method 8081/8082)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG?
Y N N/A Was a MS/MSD analyzed every 20 samples for each matrix or whenever a sample extraction was performed?
Y N N/A Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?

#	Date	MS/MSD ID	Compound	MS %R (Limits)	MSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
		9+10	pesticide	compound's %	Recovery outside	limit)	3	no QUAL 72x DIL
			M	( )	( )	61.8 (35)		none /A
			J	( )	( )	130 ( )		
			O	( )	( )	149 ( )		
			H	( )	( )	53.1 ( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
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				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		

LDC #: 17891B3a
SDG #: per cover

VALIDATION FINDINGS WORKSHEET
Compound Quantitation and Reported CRQLs

Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: ___ GC ___ HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
Level IV/D Only
Y N N/A Were CRQLs adjusted for sample dilutions, dry weight factors, etc.?
Y N N/A Did the reported results for detected target compounds agree within 10.0% of the recalculated results?

#	Compound Name	Finding (%D Bet 2 column ≤25)	Associated Samples	Qualifications
	S	122	3	NJ/A det
	S	151	5	NJ/A
	θ	36	8	J/A det

Comments: See sample calculation verification worksheet for recalculations

LDC #: 17891B3a
SDG #: pre cones

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 1 of 1
Reviewer: [illegible]
2nd reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Y N N/A Were field duplicate pairs identified in this SDG?
Y N N/A Were target compounds detected in the field duplicate pairs?

Compound	Concentration (ug/kg)		≤ 100 RPD
	1	2	
J	610	941	43

Compound	Concentration ( )		RPD

Compound	Concentration ( )		RPD

Compound	Concentration ( )		RPD

LDC #: 17891B3a
SDG #: see cover

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC ✓ HPLC ____

The calibration Factor (CF), average CF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

CF = A/C
average CF = sum of the CF/number of standards
%RSD = 100 * (S/X)

A = Area of compound,
C = Concentration of compound,
S = Standard deviation of the CF
X = Mean of the CFs

#	Standard ID	Calibration Date	Compound	Reported CF (10 std)	Recalculated CF (10 std)	Reported Average CF (initial)	Recalculated Average CF (initial)	Reported %RSD	Recalculated %RSD
1	ICAL	6/30/07	endosulfan I DB-35MS	4.236×10^5	4.236×10^5	4.229×10^5	4.229×10^5	5.59	5.59
			methoxychlor DB-35MS	2.155×10^5	2.155×10^5	2.089×10^5	2.089×10^5	5.03	5.03
			DB-XLB	4.231×10^5	4.231×10^5	4.260×10^5	4.260×10^5	4.44	4.44
2			↓ ↓	1.672×10^5	1.672×10^5	1.737×10^5	1.739×10^5	19.54	19.54
3									
4									

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 17891B3<
SDG #: see cover

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Page: 1 of 1
Reviewer:
2nd Reviewer:

METHOD: GC ✓ HPLC ____

The percent difference (%D) of the initial calibration average Calibration Factors (CF) and the continuing calibration CF were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. CF - CF)/ave. CF
CF = A/C

Where: ave. CF = initial calibration average CF
CF = continuing calibration CF
A = Area of compound
C = Concentration of compound

#	Standard ID	Calibration Date	Compound	Average CF(Ical)/ CCV Conc.	Reported CF/Conc. CCV	Recalculated CF/Conc. CCV	Reported %D	Recalculated %D
1	7G1402I	7/14/07	endosulfan I / DB-35MS	50.0	55.470	55.470	10.9	10.9
			methoxychlor ↓	↓	50.169	50.169	0.3	0.3
			↓ DB-XLB		52.747	52.747	5.5	5.5
2			↓	↓	47.549	47.549	4.9	4.9
3	7G17005	7/17/07			54.084	54.084	8.2	8.2
					49.103	49.103	1.8	1.8
					50.759	50.759	1.5	1.5
4					45.399	45.399	9.2	9.2

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

CONCLC.1S

LDC #: 17891B3a
SDG #: per cover

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: [illegible]
2nd reviewer: [illegible]

METHOD: ✓ GC ___ HPLC

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: 8 10X

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	
TCMX	DB-XLB	40	3.499	87	85	0
DCB	↓	40	4.062	102	102	0

Sample ID: ___

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	

Sample ID: ___

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	

LDC #: 17891B3a
SDG #: see cover

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates Results Verification

Reviewer: B
2nd Reviewer: K

METHOD: GC Pesticides/PCBs (EPA SW 846 Method 8081/8082)

The percent recoveries (%R) and Relative Percent difference (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100* (SSC-SC)/SA

Where: SSC = Spiked sample concentration
SA = Spike added
SC = Concentration

RPD = I MS - MSD I * 2/(MS + MSD)

MS = Matrix spike percent recovery
MSD = Matrix spike duplicate percent recovery

MS/MSD samples: 9 & 10

Compound	Spike Added (ug/kg)		Sample Concentration (ug/kg)	Spiked Sample Concentration (ug/kg)		Matrix Spike Percent Recovery		Matrix Spike Duplicate Percent Recovery		MS/MSD RPD	
	MS	MSD	-	MS	MSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalculated
gamma-BHC	2.17	2.17		NR				not reported 10x		DIL	
4,4'-DDT	4.33	4.33	8.83	9.95	68.4	25.8	25.8	1370	1376	149	149

Comments: Refer ot Matrix Spike/Matrix Spike Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 17891B3a
SDG #: pre cover

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample/Laboratory Control Sample Duplicate Results Verification

Reviewer: M
2nd Reviewer: M

METHOD: GC Pesticides/PCBs (EPA SW 846 Method 8081/8082)

The percent recoveries (%R) and Relative Percent difference (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100* (SSC-SC)/SA

Where: SSC = Spiked sample concentration; SA = Spike added; SC = Concentration

RPD = I LCS - LCSD I * 2/(LCS + LCSD)

LCS = Laboratory control sample percent recovery; LCSD = Laboratory control sample duplicate percent recovery

LCS/LCSD samples: 7612009-135/

Compound	Spike Added (ug/kg)		Spiked Sample Concentration (ug/kg)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
gamma-BHC	4.17	NA	4.15	NA	99.5	99.5				
4,4'-DDT	8.33	NA	8.43	NA	101	101				

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicate findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 17891B3a
SDG #: see cover

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: ✓ GC ___ HPLC

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds agree within 10% of the reported results?

Concentration= (A)(Fv)(Df) / (RF)(Vs or Ws)(%S/100)

A= Area or height of the compound to be measured
Fv= Final Volume of extract
Df= Dilution Factor
RF= Average response factor of the compound In the initial calibration
Vs= Initial volume of the sample
Ws= Initial weight of the sample
%S= Percent Solid

Example:

Sample ID. #8 Compound Name 4,4'-PDE

Concentration = $\frac{10755279 \quad (5)(10)}{4.492 \times 10^5 \quad (30.2)(0.965)}$

= 41 ug/kg

#	Sample ID	Compound	Reported Concentrations ( )	Recalculated Results Concentrations ( )	Qualifications

Comments: _____

SAMPCALew.wpd

NAS Barbers Point, CTO 001
Data Validation Reports
LDC# 17891

Arsenic

LDC

LDC Report# 17891A4

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: NAS Barbers Point, CTO 001

Collection Date: August 2, 2007

LDC Report Date: December 4, 2007

Matrix: Soil

Parameters: Arsenic

Validation Level: PACDIV QC Level C

Laboratory: Test America, Inc.

Sample Delivery Group (SDG): BQH0146

Sample Identification

EL029

Introduction

This data review covers one soil sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 6020 for Arsenic.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (February 1994) and the Project Procedures Manual, U.S. Navy PACDIV Installation Restoration Program (IRP), October 1998.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified a P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blanks are summarized in Section III.

Field duplicates are summarized in Section XIII.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

An initial calibration was performed.

The frequency and analysis criteria of the initial calibration verification (ICV) and continuing calibration verification (CCV) were met.

III. Blanks

Method blanks were reviewed for each matrix as applicable.

Data qualification by the initial, continuing and preparation blanks (ICB/CCB/PBs) was based on the maximum contaminant concentration in the ICB/CCB/PBs in the analysis of each analyte. No contaminant concentrations were found in the initial, continuing and preparation blanks.

No field blanks were identified in this SDG.

IV. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

V. Matrix Spike Analysis

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VI. Duplicate Sample Analysis

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

VII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Internal Standard (ICP-MS)

ICP-MS was not reviewed for this SDG.

IX. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

X. ICP Serial Dilution

ICP serial dilution was not performed in this SDG.

XI. Sample Result Verification

Raw data were not reviewed for this SDG.

XII. Overall Assessment of Data

Data flags have been summarized at the end of this report.

XIII. Field Duplicates

No field duplicates were identified in this SDG.

NAS Barbers Point, CTO 001
Arsenic - Data Qualification Summary - SDG BQH0146

No Sample Data Qualified in this SDG

NAS Barbers Point, CTO 001
Arsenic - Laboratory Blank Data Qualification Summary - SDG BQH0146

No Sample Data Qualified in this SDG

NAS Barbers Point, CTO 001
Arsenic - Field Blank Data Qualification Summary - SDG BQH0146

No Sample Data Qualified in this SDG

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

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Amended Report

Environmental Chemical Corp (ECC) 99-1151 Iwaena St. Aiea, HI 96701	Project Name: Project Number: Project Manager:	BP DCA 5440.001 Troy Rosenbush	Report Created: 11/15/07 18:07

Total Metals by EPA 6000/7000 Series Methods

TestAmerica - Seattle, WA

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
BQH0146-07 (EL029)		**Soil**			**Sampled: 08/02/07 11:29**					
Arsenic	EPA 6020	46.5	—	0.499	mg/kg dry	1x	7H13060	08/13/07 17:38	08/15/07 12:02	

Sandra Yakamavich

Sandra Yakamavich, Project Manager

Amended Report

"U.S. NAVY PACDIV IRP VALIDATED"

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report shall not be reproduced except in full, without the written approval of the laboratory.

LDC #: 17891A4
SDG #: BQH0146
Laboratory: Test America

VALIDATION COMPLETENESS WORKSHEET
Level III

Date: 11/28/07
Page: 1 of 1
Reviewer:
2nd Reviewer:

METHOD: Arsenic (EPA SW 846 Method 6020)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/2/07
II.	Calibration	A	
III.	Blanks	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Matrix Spike Analysis	N	client specified
VI.	Duplicate Sample Analysis	N	
VII.	Laboratory Control Samples (LCS)	A	LCS
VIII.	Internal Standard (ICP-MS)	N	Not reviewed
IX.	Furnace Atomic Absorption QC	N	Not utilized
X.	ICP Serial Dilution	N	Not performed.
XI.	Sample Result Verification	N	
XII.	Overall Assessment of Data	A	
XIII.	Field Duplicates	N	
XIV.	Field Blanks	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples: soil

1	EL029	11		21		31	
2	PB	12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

Revision 1

LDC Report# 17891B4

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: NAS Barbers Point, CTO 001

Collection Date: July 2, 2007

LDC Report Date: May 13, 2008

Matrix: Soil

Parameters: Arsenic

***Validation Level:** PACDIV QC Level D

Laboratory: Test America, Inc.

Sample Delivery Group (SDG): BQG0073

Sample Identification

EL001
EL002
EL003
EL004
EL005
EL006
EL007
EL008
EL003MS
EL003MSD
EL003DUP
EL003MS (10x)
EL003MSD (10x)
EL003DUP (10x)

*Changed Validation Level to "D"

An asterisk (*) will be placed in the margin
to the left of any revised section in the text.

Introduction

This data review covers 14 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 6020 for Arsenic.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (February 1994) and the Project Procedures Manual, U.S. Navy PACDIV Installation Restoration Program (IRP), October 1998.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified a P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blanks are summarized in Section III.

Field duplicates are summarized in Section XIII.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

*Indicates change as the result of report review.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

An initial calibration was performed.

The frequency and analysis criteria of the initial calibration verification (ICV) and continuing calibration verification (CCV) were met.

III. Blanks

Method blanks were reviewed for each matrix as applicable.

Data qualification by the initial, continuing and preparation blanks (ICB/CCB/PBs) was based on the maximum contaminant concentration in the ICB/CCB/PBs in the analysis of each analyte. No contaminant concentrations were found in the initial, continuing and preparation blanks.

No field blanks were identified in this SDG.

IV. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

V. Matrix Spike Analysis

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Analyte	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
EL003MS/MSD (EL003)	Arsenic	54.9 (75-125)	57.8 (75-125)	-	J (all detects) UJ (all non-detects)	A

*Indicates change as the result of report review.

Spike ID (Associated Samples)	Analyte	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
EL003MS/MSD (10x) (EL001 EL002 EL004 EL005 EL006 EL007 EL008)	Arsenic	63.9 (75-125)	66.5 (75-125)	-	J (all detects) UJ (all non-detects)	A

VI. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Internal Standard (ICP-MS)

All internal standard percent recoveries (%R) were within QC limits.

IX. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

X. ICP Serial Dilution

ICP serial dilution was not performed in this SDG.

XI. Sample Result Verification

All sample result verifications were acceptable.

XII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XIII. Field Duplicates

Samples EL001 and EL002 were identified as field duplicates. No arsenic was detected in any of the samples.

*Indicates change as the result of report review.

NAS Barbers Point, CTO 001
Arsenic - Data Qualification Summary - SDG BQG0073

SDG	Sample	Analyte	Flag	A or P	Reason
BQG0073	EL003 EL001 EL002 EL004 EL005 EL006 EL007 EL008	Arsenic	J (all detects) UJ (all non-detects)	A	Matrix spike/Matrix spike duplicates (%R)

NAS Barbers Point, CTO 001
Arsenic - Laboratory Blank Data Qualification Summary - SDG BQG0073

No Sample Data Qualified in this SDG

NAS Barbers Point, CTO 001
Arsenic - Field Blank Data Qualification Summary - SDG BQG0073

No Sample Data Qualified in this SDG

*Indicates change as the result of report review.

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Amended Report

Environmental Chemical Corp (ECC) 99-1151 Iwaena St. Aiea, HI 96701	Project Name: BP DCA Project Number: 5440.001 Project Manager: Troy Rosenbush	Report Created: 08/27/07 14:25

Total Metals by EPA 6000/7000 Series Methods

TestAmerica - Seattle, WA

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
BQG0073-01 (EL001)			**Soil**		**Sampled: 07/02/07 10:30**					
Arsenic	EPA 6020	ND UJ — (Q)		5.60	mg/kg dry	10x	7G09046	07/09/07 12:29	07/10/07 19:40	
BQG0073-02 (EL002)			**Soil**		**Sampled: 07/02/07 10:40**					
Arsenic	EPA 6020	ND UJ — (Q)		5.39	mg/kg dry	10x	7G09046	07/09/07 12:29	07/10/07 19:57	
BQG0073-03RE1 (EL003)			**Soil**		**Sampled: 07/02/07 10:50**					
Arsenic	EPA 6020	2.24 J — (Q)		0.522	mg/kg dry	1x	7G09046	07/09/07 12:29	07/10/07 20:03	M2
BQG0073-04 (EL004)			**Soil**		**Sampled: 07/02/07 10:55**					
Arsenic	EPA 6020	ND UJ — (Q)		4.97	mg/kg dry	10x	7G09046	07/09/07 12:29	07/10/07 20:15	
BQG0073-05 (EL005)			**Soil**		**Sampled: 07/02/07 11:00**					
Arsenic	EPA 6020	ND UJ — (Q)		5.43	mg/kg dry	10x	7G09046	07/09/07 12:29	07/10/07 20:21	
BQG0073-06 (EL006)			**Soil**		**Sampled: 07/02/07 11:05**					
Arsenic	EPA 6020	ND UJ — (Q)		5.17	mg/kg dry	10x	7G09046	07/09/07 12:29	07/10/07 20:27	
BQG0073-07 (EL007)			**Soil**		**Sampled: 07/02/07 11:10**					
Arsenic	EPA 6020	ND UJ — (Q)		5.50	mg/kg dry	10x	7G09046	07/09/07 12:29	07/10/07 20:33	
BQG0073-08 (EL008)			**Soil**		**Sampled: 07/02/07 11:15**					
Arsenic	EPA 6020	ND UJ — (Q)		4.67	mg/kg dry	10x	7G09046	07/09/07 12:29	07/10/07 20:39	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report shall not be reproduced except in full, without the written approval of the laboratory.

Amended Report

"U.S. NAVY PACDIV IRP VALIDATED"
LEVEL D

LDC #: 17891B4
SDG #: BQG0073
Laboratory: Test America

VALIDATION COMPLETENESS WORKSHEET
Level ~~III~~ IV

Date: 12/10/09
Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: Arsenic (EPA SW 846 Method 6020)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/2/09
II.	Calibration	A	
III.	Blanks	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Matrix Spike Analysis	SW	
VI.	Duplicate Sample Analysis	A	
VII.	Laboratory Control Samples (LCS)	A	[illegible]
VIII.	Internal Standard (ICP-MS)	A	
IX.	Furnace Atomic Absorption QC	N	Not utilized
X.	ICP Serial Dilution	N	Not performed
XI.	Sample Result Verification	A	
XII.	Overall Assessment of Data	A	
XIII.	Field Duplicates	ND	(1, 2)
XIV.	Field Blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: Soil

1	EL001	11	EL003DUP (1X)	21		31	
2	EL002	12	MS (10X)	22		32	
3	EL003	13	MSD	23		33	
4	EL004	14	Dup	24		34	
5	EL005	15	PB	25		35	
6	EL006	16		26		36	
7	EL007	17		27		37	
8	EL008	18		28		38	
9	EL003MS (1X)	19		29		39	
10	EL003MSD	20		30		40	

Notes:

LDC #: 17891B4
SDG #: See cover

VALIDATION FINDINGS CHECKLIST

Reviewer: MH
2nd Reviewer: M

Method: Metals (EPA SW 846 Method 6010/7000/6020)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. Calibration				
Were all instruments calibrated daily, each set-up time?	✓			
Were the proper number of standards used?	✓			
Were all initial and continuing calibration verification %Rs within the 90-110% (80-120% for mercury and 85-115% for cyanide) QC limits?	✓			
Were all initial calibration correlation coefficients > 0.995? (Level IV only)	✓			
III. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
IV. ICP interference check sample				
Were ICP interference check samples performed daily?	✓			
Were the AB solution percent recoveries (%R) with the 80-120% QC limits?	✓			
V. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and duplicate (DUP) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD or MS/DUP. Soil / Water.	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the 75-125 QC limits? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.		✓		
Were the MS/MSD or duplicate relative percent differences (RPD) ≤ 20% for waters and ≤ 35% for soil samples? A control limit of +/- RL(+/-2X RL for soil) was used for samples that were ≤ 5X the RL, including when only one of the duplicate sample values were < 5X the RL.	✓			
VI. Laboratory control samples				
Was an LCS anaylzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the 80-120% QC limits for water samples and laboratory established QC limits for soils?	✓			
VI. Furnace Atomic Absorption QC				
If MSA was performed, was the correlation coefficients > 0.995?			✓	
Do all applicable analysies have duplicate injections? (Level IV only)			✓	
For sample concentrations > RL, are applicable duplicate injection RSD values < 20%? (Level IV only)			✓	
Were analytical spike recoveries within the 85-115% QC limits?			✓	

LDC #: 19891B4
SDG #: see www

VALIDATION FINDINGS CHECKLIST

Reviewer: WM
2nd Reviewer: [illegible]

Validation Area	Yes	No	NA	Findings/Comments
VI. ICP Serial Dilution				
Was an ICP serial dilution analyzed if analyte concentrations were > ~~50X~~ 10X the IDL?		✓		
Were all percent differences (%Ds) < 10%?			✓	
Was there evidence of negative interference? If yes, professional judgement will be used to qualify the data.			✓	
VII. Internal Standards (EPA SW-846 Method 6020)				
Were all the percent recoveries (%R) within the 30-120% of the intensity of the internal standard in the associated initial calibration?	✓			
If the %Rs were outside the criteria, was a reanalysis performed?			✓	
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?			✓	
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
X. Sample Result Verification				
Were RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XI. Overall Assessment of Data				
Overall assessment of data was found to be acceptable.	✓			
XII. Field Duplicates				
Field duplicate pairs were identified in this SDG.	✓			
Target analytes were detected in the field duplicates.		✓		
XIII. Field Blanks				
Field blanks were identified in this SDG.		✓		
Target analytes were detected in the field blanks.			✓	

LDC #: 1789B4
SDG #: See cover

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Page: 1 of 1
Reviewer: MY
2nd Reviewer: [illegible]

METHOD: Trace metals (EPA SW 846 Method 6010/7000)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a matrix spike analyzed for each matrix in this SDG?

Y N N/A Were matrix spike percent recoveries (%R) within the control limits of 75-125? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.

Y N N/A Were all duplicate sample relative percent differences (RPD) ≤ 20% for water samples and ≤35% for soil samples?

LEVEL IV ONLY:

Y N N/A Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

#	MS/MSD ID	Matrix	Analyte	MS %Recovery	MSD %Recovery	RPD (Limits)	Associated Samples	Qualifications
1	9/10	Soil	As	54.9	57.8		3	J/UJ/A
2	12/13	Soil	As	63.9	66.5		1,2,4-8	J/UJ/A

Comments:

MSD.4S2

LDC #: 1989|01
SDG #: See cover

VALIDATION FINDINGS WORKSHEET
Initial and Continuing Calibration Calculation Verification

Page: 1 of 1
Reviewer: MY
2nd Reviewer:

METHOD: Trace Metals (EPA SW 846 Method 6010/6020/7000)

An initial and continuing calibration verification percent recovery (%R) was recalculated for each type of analysis using the following formula:

$$\%R = \frac{Found}{True} \times 100$$

Where, Found = concentration (in ug/L) of each analyte measured in the analysis of the ICV or CCV solution
True = concentration (in ug/L) of each analyte in the ICV or CCV source

Standard ID	Type of Analysis	Element	Found (ug/L)	True (ug/L)	Recalculated %R	Reported %R	Acceptable (Y/N)
	ICP (Initial calibration)						
	GFAA (Initial calibration)						
	CVAA (Initial calibration)						
	ICP (Continuing calibration)						
	GFAA (Continuing calibration)						
	CVAA (Continuing calibration)						
ICV	ICP/MS (Initial calibration)	Ag	105.6	100	105.6	105.6	Y
CCV	ICP/MS (Continuing calibation)	Ag	102.6	100	102.6	102.6	Y

Comments: Refer to Calibration Verification findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

CALCLC.4SW

LDC #: 1789B4
SDG #: see cover

VALIDATION FINDINGS WORKSHEET
Level IV Recalculation Worksheet

Page: 1 of 1
Reviewer: MY
2nd Reviewer:

METHOD: Trace Metals (EPA SW 846 Method 6010/7000)

Percent recoveries (%R) for an ICP interference check sample, a laboratory control sample and a matrix spike sample were recalculated using the following formula:

$\%R = \frac{Found}{True} \times 100$ Where, Found = Concentration of each analyte measured in the analysis of the sample. For the matrix spike calculation, Found = SSR (spiked sample result) - SR (sample result).
True = Concentration of each analyte in the source.

A sample and duplicate relative percent difference (RPD) was recalculated using the following formula:

$RPD = \frac{|S-D|}{(S+D)/2} \times 100$ Where, S = Original sample concentration
D = Duplicate sample concentration

An ICP serial dilution percent difference (%D) was recalculated using the following formula:

$\%D = \frac{|I-SDR|}{I} \times 100$ Where, I = Initial Sample Result (mg/L)
SDR = Serial Dilution Result (mg/L) (Instrument Reading x 5)

Sample ID	Type of Analysis	Element	Found / S / I (units)	True / D / SDR (units)	Recalculated %R / RPD / %D	Reported %R / RPD / %D	Acceptable (Y/N)
ICSAB	ICP interference check	Ag	21.69	19.9	109	109	N
LCS	Laboratory control sample		40.7	40	102	102	
9 (MS)	Matrix spike		(SSR-SR) 22.9	41.7	54.9	54.9	
11 (DUP)	Duplicate		2.18	2.24	2.59	2.59	
NA	ICP serial dilution						

Comments: Refer to appropriate worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

TOTCLC.4SW

LDC #: 17891B4
SDG #: selenium

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: MH
2nd reviewer:

METHOD: Trace Metals (EPA SW 846 Method 6010/7000)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Have results been reported and calculated correctly?
Y N N/A Are results within the calibrated range of the instruments and within the linear range of the ICP?
Y N N/A Are all detection limits below the CRDL?

Detected analyte results for 3 were recalculated and verified using the following equation:

Concentration = (RD)(FV)(Dil) / (In. Vol.)(%S)

RD = Raw data concentration
FV = Final volume (ml)
In. Vol. = Initial volume (ml) or weight (G)
Dil = Dilution factor
%S = Decimal percent solids

Recalculation:

As = 4.3 ug/L x 0.5 L / 0.959 x 1 g = 2.24 mg/kg

Sample ID	Analyte	Reported Concentration (mg/kg)	Calculated Concentration (mg/kg)	Acceptable (Y/N)
3	As	2.24	2.24	Y

RECALC.4S2

LABORATORY DATA CONSULTANTS, INC.
7750 El Camino Real, Suite 2L Carlsbad, CA 92009 Phone: 760/634-0437 Fax: 760/634-0439

Environmental Chemical Corporation
99-1151 Iwaena Street
Aiea, HI 96701
ATTN: Mr. Troy Rosenbush

January 25, 2008

SUBJECT: NAS Barbers Point, CTO 001, Data Validation

Dear Mr. Rosenbush,

Enclosed is the final validation report for the fraction listed below. This SDG was received on January 11, 2008. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 18104:

SDG #	**Fraction**
BQG0503	Chlorinated Pesticides

The data validation was performed under PACDIV QC Level C and Level D guidelines. The analyses were validated using the following documents, as applicable to each method:

- Project Procedures Manual, U.S. Navy PACDIV Installation Restoration Program (IRP), October 1998
- USEPA, Contract Laboratory Program National Functional Guidelines for Organic Data Review, October 1999
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Stella S. Cuenco
Project Manager/Senior Chemist

V:\LOGIN\ECC\Barbers\18104COV.wpd

Attachment II-A-6
QUALIFICATION CODE REFERENCE TABLE

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence of number of standards used for the calibration was incorrect.
C	Calibration %RSD or %D were noncompliant.	Correlation coefficient is <0.995.
R	Calibrating RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination from preparation (method) blank.	Presumed contamination from preparation (method) or calibration blank.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
T	Presumed contamination from trip blank.	Not applicable.
+	False positive - reported compound was not present. Not applicable,	
–	False negative - compound was present but not reported.	Not applicable.
F	Presumed contamination from FB, or ER.	Presumed contamination from FB, or ER.
$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
¿	TIC identity or reported retention time has been changed.	Not applicable.
D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
p	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.

Attachment II-A-6
QUALIFICATION CODE REFERENCE TABLE

Qualifier	*Organics*	*Inorganics*
*#	*Unusual problems found with the data that have been described in Section 2, "Data Validation Findings." The number following the asterisk (*) will indicate the subsection where a description of the problem can be found.*	*Unusual problems found with the data that have been described in Section 2, "Data Validation Findings." The number following the asterisk (*) will indicate the subsection where a description of the problem can be found.*

Attachment 1

LDC #18104 (Environmental Chemical Corporation-Aiea, HI / NAS Barbers Point, CTO#001)

LDC	SDG#	DATE REC'D	(3) DATE DUE	Pest. (8081A)																											
Matrix:	Water/Wipe/Soil			W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	BQG0503	01/11/08	02/01/08	0	3																										
Total	T/SC			0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3

Shaded cells indicate Level D validation (all other cells are Level C validation). These sample counts do not include MS/MSD, and DUPs

18104ST.wpd

NAS Barbers Point, CTO 001
Data Validation Reports
LDC# 18104

Chlorinated Pesticides

LDC Report# 18104A3a

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: NAS Barbers Point, CTO 001

Collection Date: July 23, 2007

LDC Report Date: January 24, 2008

Matrix: Soil

Parameters: Chlorinated Pesticides

Validation Level: PACDIV QC Level C

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): BQG0503

Sample Identification

EL009
EL010
EL011
EL010MS
EL010MSD

Introduction

This data review covers 5 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8081A for Chlorinated Pesticides.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) and the Project Procedures Manual, U.S. Navy PACDIV Installation Restoration Program (IRP), October 1998.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified a P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XIV.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/ECD Instrument Performance Check

Instrument performance was acceptable unless noted otherwise under initial calibration and continuing calibration sections.

III. Initial Calibration

Initial calibration of single and multicomponent compounds was performed for the primary (quantitation) column and confirmation column as required by this method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

IV. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) of calibration factors in continuing standard mixtures were within the 15.0% QC limits.

The individual 4,4'-DDT and Endrin breakdowns (%BD) were less than or equal to 15.0%.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No chlorinated pesticide contaminants were found in the method blanks.

No field blanks were identified in this SDG.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. Surrogate recoveries (%R) were not within QC limits for several samples in this SDG. Since these samples were diluted out, no data were qualified.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were not within the QC limits. Since the samples were diluted out, no data were qualified.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Pesticide Cleanup Checks

a. Florisil Cartridge Check

Florisil cleanup was not required and therefore not performed in this SDG.

b. GPC Calibration

GPC cleanup was not required and therefore not performed in this SDG.

XI. Target Compound Identification

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and Reported CRQLs

The sample results for detected compounds from the two columns were within 40.0% relative percent differences (RPD) with the following exceptions:

Sample	Compound	RPD	Flag	A or P
EL009	alpha-Chlordane	65	J (all detects)	A
EL010	gamma-Chlordane alpha-Chlordane	65 83	J (all detects) J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XIV. Field Duplicates

No field duplicates were identified in this SDG.

NAS Barbers Point, CTO 001
Chlorinated Pesticides - Data Qualification Summary - SDG BQG0503

SDG	Sample	Compound	Flag	A or P	Reason
BQG0503	EL009	alpha-Chlordane	J (all detects)	A	Compound quantitation and CRQLs (%D)
BQG0503	EL010	gamma-Chlordane alpha-Chlordane	J (all detects) J (all detects)	A	Compound quantitation and CRQLs (%D)

NAS Barbers Point, CTO 001
Chlorinated Pesticides - Laboratory Blank Data Qualification Summary - SDG BQG0503

No Sample Data Qualified in this SDG

NAS Barbers Point, CTO 001
Chlorinated Pesticides - Field Blank Data Qualification Summary - SDG BQG0503

No Sample Data Qualified in this SDG

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

SEATTLE, WA 11720 NORTH CREEK PKWY N, SUITE 400
BOTHELL, WA 98011-8244
PH: (425) 420.9200 FAX: (425) 420.9210

Amended Report

Environmental Chemical Corp (ECC)
99-1151 Iwaena St.
Aiea, HI 96701

Project Name: BP DCA
Project Number: 5440.001
Project Manager: Troy Rosenbush

Report Created: 01/10/08 10:25

Organochlorine Pesticides by EPA Method 8081A

TestAmerica Seattle

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
BQG0503-01 (EL009)		Soil			Sampled: 07/23/07 11:15					
Aldrin	EPA 8081A	ND U	—	20.7	ug/kg dry	20x	7G26032	07/26/07 14:11	07/26/07 22:21	
alpha-BHC	"	ND	—	20.7	"	"	"	"	"	
beta-BHC	"	ND	—	41.4	"	"	"	"	"	
delta-BHC	"	ND	—	20.7	"	"	"	"	"	
gamma-BHC (Lindane)	"	ND	—	20.7	"	"	"	"	"	
alpha-Chlordane [2C]	"	146 J	— (*XII)	20.7	"	"	"	"	"	R10
gamma-Chlordane	"	142	—	20.7	"	"	"	"	"	
4,4'-DDD	"	59.6	—	41.4	"	"	"	"	"	
4,4'-DDT	"	583	—	41.4	"	"	"	"	"	
Dieldrin	"	ND U	—	41.4	"	"	"	"	"	
Endosulfan I	"	ND	—	20.7	"	"	"	"	"	
Endosulfan II	"	ND	—	41.4	"	"	"	"	"	
Endosulfan sulfate	"	ND	—	41.4	"	"	"	"	"	
Endrin	"	ND	—	41.4	"	"	"	"	"	
Endrin aldehyde	"	ND	—	41.4	"	"	"	"	"	
Endrin ketone	"	ND	—	41.4	"	"	"	"	"	
Heptachlor	"	ND	—	20.7	"	"	"	"	"	
Heptachlor epoxide [2C]	"	ND	—	20.7	"	"	"	"	"	R10
Hexachlorobenzene	"	ND	—	20.7	"	"	"	"	"	
Methoxychlor [2C]	"	ND	—	41.4	"	"	"	"	"	
Toxaphene	"	ND	—	1040	"	"	"	"	"	
Surrogate(s): TCX		*84.3%*		*46 - 125 %*		"			"	
Decachlorobiphenyl [2C]		*140%*		*27 - 175 %*		"			"	Z3
BQG0503-01RE1 (EL009)		Soil			Sampled: 07/23/07 11:15					
4,4'-DDE	EPA 8081A	1740	—	207	ug/kg dry	100x	7G26032	07/26/07 14:11	07/28/07 19:07	
Surrogate(s): TCX		*NR*		*46 - 125 %*		"			"	Z3
Decachlorobiphenyl		*NR*		*27 - 175 %*		"			"	Z3
BQG0503-02 (EL010)		Soil			Sampled: 07/23/07 11:20					
Aldrin	EPA 8081A	ND U	—	21.0	ug/kg dry	20x	7G26032	07/26/07 14:11	07/26/07 22:39	
alpha-BHC	"	ND	—	21.0	"	"	"	"	"	
beta-BHC	"	ND	—	42.1	"	"	"	"	"	
delta-BHC	"	ND	—	21.0	"	"	"	"	"	
gamma-BHC (Lindane)	"	ND	—	21.0	"	"	"	"	"	
alpha-Chlordane [2C]	"	28.4 J	— (*XII)	21.0	"	"	"	"	"	R10
gamma-Chlordane	"	31.1	—	21.0	"	"	"	"	"	R10
4,4'-DDD	"	ND U	—	42.1	"	"	"	"	"	
4,4'-DDT	"	241	—	42.1	"	"	"	"	"	
Dieldrin	"	ND U	—	42.1	"	"	"	"	"	

TestAmerica Seattle

Sandra Yakamavich

Sandra Yakamavich, Project Manager

Amended Report

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report shall not be reproduced except in full, without the written approval of the laboratory.

"U.S. NAVY PACDIV IRP VALIDATED"

4/12508

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

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Amended Report

Environmental Chemical Corp (ECC) 99-1151 Iwaena St. Aiea, HI 96701	Project Name: BP DCA Project Number: 5440.001 Project Manager: Troy Rosenbush	Report Created: 01/10/08 10:25

Organochlorine Pesticides by EPA Method 8081A

TestAmerica Seattle

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
BQG0503-02 (EL010)		Soil			Sampled: 07/23/07 11:20					
Endosulfan I	EPA 8081A	ND U	—	21.0	ug/kg dry	20x	7G26032	07/26/07 14:11	07/26/07 22:39	
Endosulfan II	"	ND	—	42.1	"	"	"	"	"	
Endosulfan sulfate	"	ND	—	42.1	"	"	"	"	"	
Endrin	"	ND	—	42.1	"	"	"	"	"	
Endrin aldehyde	"	ND	—	42.1	"	"	"	"	"	
Endrin ketone	"	ND	—	42.1	"	"	"	"	"	
Heptachlor	"	ND	—	21.0	"	"	"	"	"	
Heptachlor epoxide [2C]	"	ND	—	21.0	"	"	"	"	"	
Hexachlorobenzene	"	ND	—	21.0	"	"	"	"	"	R10
Methoxychlor [2C]	"	ND	—	42.1	"	"	"	"	"	
Toxaphene	"	ND	—	1050	"	"	"	"	"	
Surrogate(s): TCX			*77.1%*		*46 - 125 %*	"			"	
Decachlorobiphenyl [2C]			*130%*		*27 - 175 %*	"			"	*Z3*
BQG0503-02RE1 (EL010)		Soil			Sampled: 07/23/07 11:20					
4,4'-DDE	EPA 8081A	1210	—	210	ug/kg dry	100x	7G26032	07/26/07 14:11	07/28/07 19:26	
Surrogate(s): TCX			*NR*		*46 - 125 %*	"			"	*Z3*
Decachlorobiphenyl			*NR*		*27 - 175 %*	"			"	*Z3*
BQG0503-03 (EL011)		Soil			Sampled: 07/23/07 11:25					
Aldrin	EPA 8081A	ND U	—	20.3	ug/kg dry	20x	7G26032	07/26/07 14:11	07/26/07 22:57	
alpha-BHC	"	ND	—	20.3	"	"	"	"	"	
beta-BHC	"	ND	—	40.5	"	"	"	"	"	
delta-BHC	"	ND	—	20.3	"	"	"	"	"	
gamma-BHC (Lindane)	"	ND	—	20.3	"	"	"	"	"	
alpha-Chlordane [2C]	"	ND	—	20.3	"	"	"	"	"	
gamma-Chlordane	"	ND	—	20.3	"	"	"	"	"	
4,4'-DDD	"	ND	—	40.5	"	"	"	"	"	
4,4'-DDE	"	200	—	40.5	"	"	"	"	"	
4,4'-DDT	"	75.3	—	40.5	"	"	"	"	"	
Dieldrin	"	ND U	—	40.5	"	"	"	"	"	
Endosulfan I	"	ND	—	20.3	"	"	"	"	"	
Endosulfan II	"	ND	—	40.5	"	"	"	"	"	
Endosulfan sulfate	"	ND	—	40.5	"	"	"	"	"	
Endrin	"	ND	—	40.5	"	"	"	"	"	
Endrin aldehyde	"	ND	—	40.5	"	"	"	"	"	
Endrin ketone	"	ND	—	40.5	"	"	"	"	"	
Heptachlor	"	ND	—	20.3	"	"	"	"	"	
Heptachlor epoxide [2C]	"	ND	—	20.3	"	"	"	"	"	
Hexachlorobenzene	"	ND	—	20.3	"	"	"	"	"	
Methoxychlor [2C]	"	ND	—	40.5	"	"	"	"	"	

TestAmerica Seattle

Sandra Yakamavich

Sandra Yakamavich, Project Manager

Amended Report

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report shall not be reproduced except in full, without the written approval of the laboratory.

"U.S. NAVY PACDIV IRP VALIDATED"

U/2018

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

SEATTLE, WA 11720 NORTH CREEK PKWY N, SUITE 400
BOTHELL, WA 98011-8244
PH: (425) 420.9200 FAX: (425) 420.9210

Amended Report

Environmental Chemical Corp (ECC) 99-1151 Iwaena St. Aiea, HI 96701	Project Name: BP DCA Project Number: 5440.001 Project Manager: Troy Rosenbush	Report Created: 01/10/08 10:25

Organochlorine Pesticides by EPA Method 8081A

TestAmerica Seattle

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
BQG0503-03 (EL011)			**Soil**			**Sampled: 07/23/07 11:25**				
Toxaphene	EPA 8081A	ND U	—	1010	ug/kg dry	20x	7G26032	07/26/07 14:11	07/26/07 22:57	
Surrogate(s): TCX			*122%*		*46 - 125 %*	"			"	
Decachlorobiphenyl [2C]			*141%*		*27 - 175 %*	"			"	*Z3*

LDC #: 18104A3a
SDG #: BQG0503
Laboratory: Test America

VALIDATION COMPLETENESS WORKSHEET
Level III

Date: 1/17/08
Page: 1 of 1
Reviewer: F
2nd Reviewer: L

METHOD: GC Chlorinated Pesticides (EPA SW 846 Method 8081A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/23/07
II.	GC/ECD Instrument Performance Check	A	
III.	Initial calibration	A	
IV.	Continuing calibration/~~DFW~~	A	
V.	Blanks	ND	
VI.	Surrogate spikes	SW	
VII.	Matrix spike/Matrix spike duplicates	SW	
VIII.	Laboratory control samples	A	LCS
IX.	Regional quality assurance and quality control	N	
Xa.	Florisil cartridge check	N	
Xb.	GPC Calibration	N	
XI.	Target compound identification	N	
XII.	Compound quantitation and reported CRQLs	SW	
XIII.	Overall assessment of data	A	
XIV.	Field duplicates	N	
XV.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:
SOIL

1	EL009	11	7G26032-BLK1	21		31	
2	EL010	12		22		32	
3	EL011	13		23		33	
4	EL010MS	14		24		34	
5	EL010MSD	15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

VALIDATION FINDINGS WORKSHEET

METHOD: Pesticide/PCBs (EPASW 846 Method 8081/8082)

A. alpha-BHC	I. Dieldrin	Q. Endrin ketone	Y. Aroclor-1242	GG.
B. beta-BHC	J. 4,4'-DDE	R. Endrin aldehyde	Z. Aroclor-1248	HH.
C. delta-BHC	K. Endrin	S. alpha-Chlordane	AA. Aroclor-1254	II.
D. gamma-BHC	L. Endosulfan II	T. gamma-Chlordane	BB. Aroclor-1260	JJ.
E. Heptachlor	M. 4,4'-DDD	U. Toxaphene	CC. DB 608	KK.
F. Aldrin	N. Endosulfan sulfate	V. Aroclor-1016	DD. DB 1701	LL.
G. Heptachlor epoxide	O. 4,4'-DDT	W. Aroclor-1221	EE.	MM.
H. Endosulfan I	P. Methoxychlor	X. Aroclor-1232	FF.	NN.

Notes:

LDC #: 18104A3a
SDG #: see cover

VALIDATION FINDINDS WORKSHEET
Surrogate Recovery

Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: ___ GC ___ HPLC

Are surrogates required by the method? Yes____ or No____.

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were surrogates spiked into all samples and blanks?

Y N N/A Did all surrogate recoveries (%R) meet the QC limits?

#	Sample ID	Detector/ Column	Surrogate Compound	%R (Limits)	Qualifications
	1-3	not specified	surrogates	outside limit ( )	no qual 20 + 100x DIL
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
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				( )	
				( )	

	Surrogate Compound		Surrogate Compound		Surrogate Compound		Surrogate Compound
A	Chlorobenzene (CBZ)	G	Octacosane	M	Benzo(e)Pyrene	S	1-Chloro-3-Nitrobenzene
B	4-Bromofluorobenzene (BFB)	H	Ortho-Terphenyl	N	Terphenyl-D14	T	3,4-Dinitrotoluene
C	a,a,a-Trifluorotoluene	I	Fluorobenzene (FBZ)	O	Decafluorobiphenyl (DCB)	U	Tripentyltin
D	Bromochlorobenene	J	n-Triacontane	P	1-methylnaphthalene	V	Tri-n-propyltin
E	1,4-Dichlorobutane	K	Hexacosane	Q	Dichlorophenyl Acetic Acid (DCAA)	W	Tributyl Phosphate
F	1,4-Difluorobenzene (DFB)	L	Bromobenzene	R	4-Nitrophenol	X	Triphenyl Phosphate

LDC #: 18104A3a
SDG #: see cover

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Page: 1 of 1
Reviewer:
2nd Reviewer:

METHOD: ✓ GC __ HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG?
Y N N/A Was an MS/MSD analyzed every 20 samples for each matrix or whenever a sample extraction was performed?
Y N N/A Were the MS/MSD percent recoveries (%R) and relative percent differences (RPD) within QC limits?

#	MS/MSD ID	Compound	MS %R (Limits)	MSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
	4 + 5	several	compounds outside limits		( )		no QUAL 20% D/L
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
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			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		

LDC #: 18104A3a
SDG #: see cover

VALIDATION FINDINGS WORKSHEET
Compound Quantitation and Reported CRQLs

Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: ___ GC ___ HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
Level IV/D Only
Y N N/A Were CRQLs adjusted for sample dilutions, dry weight factors, etc.?
Y N N/A Did the reported results for detected target compounds agree within 10.0% of the recalculated results?

#	Compound Name	% RPD Bet 2 column Finding ≤40	Associated Samples	Qualifications
	S	65	#1	J/A
	T	65	#2	J/A
	S	83	↓	↓

Comments: See sample calculation verification worksheet for recalculations

LABORATORY DATA CONSULTANTS, INC.
7750 El Camino Real, Suite 2L Carlsbad, CA 92009 Phone: 760/634-0437 Fax: 760/634-0439

Environmental Chemical Corporation
99-1151 Iwaena Street
Aiea, HI 96701
ATTN: Mr. Troy Rosenbush

March 12, 2008

SUBJECT: NAS Barbers Point, CTO 001, Data Validation

Dear Mr. Rosenbush,

Enclosed is the final validation report for the fraction listed below. This SDG was received on March 4, 2008. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 18394:

SDG #	**Fraction**
BRA0015	Arsenic

The data validation was performed under PACDIV QC Level C guidelines. The analyses were validated using the following documents, as applicable to each method:

- Project Procedures Manual, U.S. Navy PACDIV Installation Restoration Program (IRP), October 1998
- USEPA, Contract Laboratory Program National Functional Guidelines for Organic Data Review, October 1999
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Stella Cuenco

Stella S. Cuenco
Project Manager/Senior Chemist

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35 pages-CD

Attachment 1

LDC #18394 (Environmental Chemical Corporation-Marlborough, MA / NAS Barbers Point, CTO#001)

LDC	SDG#	DATE REC'D	(3) DATE DUE	As (6020)																											
Matrix:	Water/Soil			W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	BRA0015	03/04/08	03/25/08	0	2																										
Total	T/SC			0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2

Shaded cells indicate Level D validation (all other cells are Level C validation). These sample counts do not include MS/MSD, and DUPs

18394ST.wpd

NAS Barbers Point, CTO 001
Data Validation Reports
LDC# 18394

Arsenic

LDC

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: NAS Barbers Point, CTO 001

Collection Date: December 28, 2007

LDC Report Date: March 7, 2008

Matrix: Soil

Parameters: Arsenic

Validation Level: PACDIV QC Level C

Laboratory: Test America, Inc.

Sample Delivery Group (SDG): BRA0015

Sample Identification

EL034
EL035
EL034MS
EL034DUP

Introduction

This data review covers 4 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 6020 for Arsenic.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (February 1994) and the Project Procedures Manual, U.S. Navy PACDIV Installation Restoration Program (IRP), October 1998.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified a P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blanks are summarized in Section III.

Field duplicates are summarized in Section XIII.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

An initial calibration was performed.

The frequency and analysis criteria of the initial calibration verification (ICV) and continuing calibration verification (CCV) were met.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

No field blanks were identified in this SDG.

IV. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

V. Matrix Spike Analysis

Matrix spike (MS) samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VI. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits with the following exceptions:

DUP ID (Associated Samples)	Analyte	RPD (Limits)	Difference (Limits)	Flag	A or P
EL034DUP (All samples in SDG BRA0015)	Arsenic	76.2 (≤40)	-	J (all detects)	A

VII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Internal Standard (ICP-MS)

Raw data were not reviewed for this SDG.

IX. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

X. ICP Serial Dilution

ICP serial dilution was not performed in this SDG.

XI. Sample Result Verification

Raw data were not reviewed for this SDG.

XII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XIII. Field Duplicates

Samples EL034 and EL035 were identified as field duplicates. No arsenic was detected in any of the samples with the following exceptions:

Analyte	Concentration (mg/Kg)		RPD (Limits)
	EL034	EL035	
Arsenic	3.17	2.22	35 (≤100)

NAS Barbers Point, CTO 001
Arsenic - Data Qualification Summary - SDG BRA0015

SDG	Sample	Analyte	Flag	A or P	Reason
BRA0015	EL034 EL035	Arsenic	J (all detects)	A	Duplicate analysis (RPD)

NAS Barbers Point, CTO 001
Arsenic - Laboratory Blank Data Qualification Summary - SDG BRA0015

No Sample Data Qualified in this SDG

NAS Barbers Point, CTO 001
Arsenic - Field Blank Data Qualification Summary - SDG BRA0015

No Sample Data Qualified in this SDG

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

SEATTLE, WA 11720 NORTH CREEK PKWY N, SUITE 400
BOTHELL, WA 98011-8244
PH: (425) 420 9200 FAX (425) 420.9210

Environmental Chemical Corp (ECC)	Project Name	**BP DCA**	
99-1151 Iwaena St.	Project Number:	5440.001	Report Created
Aiea, HI 96701	Project Manager:	Troy Rosenbush	01/04/08 16:06

Total Metals by EPA 6000/7000 Series Methods

TestAmerica Seattle

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
BRA0015-01 (EL034)			**Other dry**		**Sampled: 12/28/07 14:10**					
Arsenic	EPA 6020	3.17	J (E)	0.515	mg/kg dry	1x	8A03048	01/03/08 15:06	01/04/08 10:10	R9
BRA0015-02 (EL035)			**Other dry**		**Sampled: 12/28/07 14:15**					
Arsenic	EPA 6020	2.22	J (E)	0.493	mg/kg dry	1x	8A03048	01/03/08 15:06	01/04/08 10:16	

"U.S. NAVY PACDIV IRP VALIDATED"

1/23/08

TestAmerica Seattle

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report shall not be reproduced except in full, without the written approval of the laboratory.

Sandra Yakamavich

Sandra Yakamavich, Project Manager

NAS Barbers Point, CTO 001
Arsenic - Data Qualification Summary - SDG BRA0015

SDG	Sample	Analyte	Flag	A or P	Reason
BRA0015	EL034 EL035	Arsenic	J (all detects)	A	Duplicate analysis (RPD)

NAS Barbers Point, CTO 001
Arsenic - Laboratory Blank Data Qualification Summary - SDG BRA0015

No Sample Data Qualified in this SDG

NAS Barbers Point, CTO 001
Arsenic - Field Blank Data Qualification Summary - SDG BRA0015

No Sample Data Qualified in this SDG

LDC #: 18394A4
SDG #: BRA0015
Laboratory: Test America

VALIDATION COMPLETENESS WORKSHEET
Level III

Date: 3-5-08
Page: 1 of 1
Reviewer: MG
2nd Reviewer: [illegible]

METHOD: Arsenic (EPA SW 846 Method 6020)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 12-28-07
II.	Calibration	A	
III.	Blanks	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Matrix Spike Analysis	A	MS
VI.	Duplicate Sample Analysis	SW	DUP
VII.	Laboratory Control Samples (LCS)	A	LCS
VIII.	Internal Standard (ICP-MS)	N	Not reviewed
IX.	Furnace Atomic Absorption QC	N	Not utilized
X.	ICP Serial Dilution	N	Not performed
XI.	Sample Result Verification	N	
XII.	Overall Assessment of Data	A	
XIII.	Field Duplicates	SW	D = 1+2
XIV.	Field Blanks	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:
all soil

1	EL034	11		21		31	
2	EL035	12		22		32	
3	EL034MS	13		23		33	
4	EL034DUP	14		24		34	
5	PBS	15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 18394A4
SDG #: BRA0015

VALIDATION FINDINGS WORKSHEET
Duplicate Analysis

Page: 1 of 1
Reviewer: MG
2nd Reviewer: [illegible]

METHOD: Trace Metals (EPA SW 846 Method 6010/7000)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a duplicate sample analyzed for each matrix in this SDG?

Y N N/A Were all duplicate sample relative percent differences (RPD) ≤ 20% for water samples and ≤ 35% for soil samples? If no, see qualifications below. A control limit of ±R.L. (±2X R.L. for soil) was used for sample values that were <5X the R.L., including the case when only one of the duplicate sample values was <5X R.L.. If field blanks were used for laboratory duplicates, note in the Overall Assessment.

LEVEL IV ONLY:

Y N N/A Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

#	Duplicate ID	Matrix	Analyte	RPD (Limits)	Difference (Limits)	Associated Samples	Qualifications
1	4	Soil	As	76.2 (≤40)		all	J dets /A

Comments:

DUP.4S2

LDC#: 18394A4
SDG#: BRA0015

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Reviewer: MG
2nd Reviewer: [illegible]

METHOD: Metals (EPA Method 6010B/7000)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Compound	Concentration (mg/kg)		(≤100) RPD	
	1	2		
Arsenic	3.17	2.22	35	

V:\FIELD DUPLICATES\FD_inorganic\18394A4.WPD

LABORATORY DATA CONSULTANTS, INC.
7750 El Camino Real, Suite 2L Carlsbad, CA 92009 Phone: 760/634-0437 Fax: 760/634-0439

Environmental Chemical Corporation
99-1151 Iwaena Street
Aiea, HI 96701
ATTN: Mr. Troy Rosenbush

May 16, 2008

SUBJECT: NAS Barbers Point, CTO 001, Data Validation

Dear Mr. Rosenbush,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on May 9, 2008. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 18731:

SDG #	**Fraction**
580-9079, 580-9330	Chlorinated Pesticides, Arsenic

The data validation was performed under PACDIV QC Level C guidelines. The analyses were validated using the following documents, as applicable to each method:

- Project Procedures Manual, U.S. Navy PACDIV Installation Restoration Program (IRP), October 1998
- USEPA, Contract Laboratory Program National Functional Guidelines for Organic Data Review, October 1999
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, October 2004
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Stella Cuenco

Stella S. Cuenco
Project Manager/Senior Chemist

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517 pages-CD

Attachment 1

LDC #18731 (Environmental Chemical Corporation-Aeia, HI / NAS Barbers Point, CTO#001)

LDC	SDG#	DATE REC'D	(3) DATE DUE	Pest. (8081A)		As (6020)																									
Matrix:	Water/Soil			W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	580-9079	05/09/08	06/02/08	0	5	0	2																								
C	580-9330	05/09/08	06/02/08	0	1	-	-																								
Total	T/SC			0	6	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8

Shaded cells indicate Level D validation (all other cells are Level C validation). These sample counts do not include MS/MSD, and DUPs

18731ST.wpd

NAS Barbers Point, CTO 001
Data Validation Reports
LDC# 18731

Chlorinated Pesticides

LDC

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: NAS Barbers Point, CTO 001

Collection Date: February 25, 2008

LDC Report Date: May 13, 2008

Matrix: Soil

Parameters: Chlorinated Pesticides

Validation Level: PACDIV QC Level C

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 580-9079

Sample Identification

EL036
EL038
EL039
EL040
EL041

Introduction

This data review covers 5 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8081A for Chlorinated Pesticides (4,4'-DDD and 4,4'-DDE only).

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) and the Project Procedures Manual, U.S. Navy PACDIV Installation Restoration Program (IRP), October 1998.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XIV.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. Cooler temperatures for all samples were reported at 7.7°C upon receipt by the laboratory.

II. GC/ECD Instrument Performance Check

Instrument performance was acceptable unless noted otherwise under initial calibration and continuing calibration sections.

III. Initial Calibration

Initial calibration of compounds was performed for the primary (quantitation) column and confirmation column as required by this method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

IV. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) of calibration factors in continuing standard mixtures were within the 15.0% QC limits with the following exceptions:

Date	Standard	Column	Compound	%D	Associated Samples	Flag	A or P
3/5/08	ECD31202	Channel B	4,4'-DDD	15.7	MB580-27849/1-A	J (all detects) UJ (all non-detects)	A

The individual 4,4'-DDT breakdown (%BD) was less than or equal to 15.0%.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No chlorinated pesticide contaminants were found in the method blanks.

No field blanks were identified in this SDG.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Pesticide Cleanup Checks

a. Florisil Cartridge Check

Florisil cleanup was not required and therefore not performed in this SDG.

b. GPC Calibration

GPC cleanup was not required and therefore not performed in this SDG.

XI. Target Compound Identification

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and Reported CRQLs

Raw data were not reviewed for this SDG.

XIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XIV. Field Duplicates

No field duplicates were identified in this SDG.

NAS Barbers Point, CTO 001
Chlorinated Pesticides - Data Qualification Summary - SDG 580-9079

No Sample Data Qualified in this SDG

NAS Barbers Point, CTO 001
Chlorinated Pesticides - Laboratory Blank Data Qualification Summary - SDG 580-9079

No Sample Data Qualified in this SDG

NAS Barbers Point, CTO 001
Chlorinated Pesticides - Field Blank Data Qualification Summary - SDG 580-9079

No Sample Data Qualified in this SDG

Client: Environmental Chemical Corp. Job Number: 580-9079-1

Client Sample ID: **EL036**

Lab Sample ID:	580-9079-1			Date Sampled:	02/25/2008 0840
Client Matrix:	Solid	% Moisture:	7.9	Date Received:	02/26/2008 0930

8081A Organochlorine Pesticides by Gas Chromatography

Method:	8081A	Analysis Batch: 580-28998		Instrument ID:	SEA035
Preparation:	3550B	Prep Batch: 580-28749		Lab File ID:	ECD31189.D
Dilution:	1.0			Initial Weight/Volume:	10.8157 g
Date Analyzed:	03/04/2008 2347			Final Weight/Volume:	10 mL
Date Prepared:	02/28/2008 1242			Injection Volume:	
				Column ID:	PRIMARY

Analyte	DryWt Corrected: Y Result (ug/Kg)	Qualifier	MDL	RL
4,4'-DDD	ND U ~~X~~ (~~X~~)		0.27	2.0
4,4'-DDE	3.2		0.23	2.0

Surrogate	%Rec	Acceptance Limits
Tetrachloro-m-xylene	83	49 - 123
DCB Decachlorobiphenyl	82	40 - 158

"U.S. NAVY PACDIV IRP VALIDATED"

6/25/08

Client: Environmental Chemical Corp. Job Number: 580-9079-1

Client Sample ID: EL038

Lab Sample ID:	580-9079-3			Date Sampled:	02/25/2008 0925
Client Matrix:	Solid	% Moisture:	9.4	Date Received:	02/26/2008 0930

8081A Organochlorine Pesticides by Gas Chromatography

Method:	8081A	Analysis Batch: 580-28998		Instrument ID:	SEA035
Preparation:	3550B	Prep Batch: 580-28749		Lab File ID:	ECD31223.D
Dilution:	5.0			Initial Weight/Volume:	10.3968 g
Date Analyzed:	03/05/2008 1835			Final Weight/Volume:	10 mL
Date Prepared:	02/28/2008 1242			Injection Volume:	
				Column ID:	PRIMARY

Analyte	DryWt Corrected: Y Result (ug/Kg)	Qualifier	MDL	RL
4,4'-DDE	340		1.2	11
4,4'-DDT	360		1.4	11

Surrogate	%Rec	Acceptance Limits
Tetrachloro-m-xylene	85	49 - 123
DCB Decachlorobiphenyl	93	40 - 158

"U.S. NAVY PACDIV IRP VALIDATED"

Ok 7/4/08

Client: Environmental Chemical Corp. Job Number: 580-9079-1

Client Sample ID: EL039

Lab Sample ID:	580-9079-4			Date Sampled:	02/25/2008 0940
Client Matrix:	Solid	% Moisture:	5.4	Date Received:	02/26/2008 0930

8081A Organochlorine Pesticides by Gas Chromatography

Method:	8081A	Analysis Batch: 580-28998		Instrument ID:	SEA035
Preparation:	3550B	Prep Batch: 580-28749		Lab File ID:	ECD31224.D
Dilution:	5.0			Initial Weight/Volume:	10.5541 g
Date Analyzed:	03/05/2008 1855			Final Weight/Volume:	10 mL
Date Prepared:	02/28/2008 1242			Injection Volume:	
				Column ID:	PRIMARY

Analyte	DryWt Corrected: Y Result (ug/Kg)	Qualifier	MDL	RL
4,4'-DDE	280		1.1	10
4,4'-DDT	110		1.3	10

Surrogate	%Rec	Acceptance Limits
Tetrachloro-m-xylene	81	49 - 123
DCB Decachlorobiphenyl	96	40 - 158

"U.S. NAVY PACDIV IRP VALIDATED"

Ts 51408

Client: Environmental Chemical Corp. Job Number: 580-9079-1

Client Sample ID: **EL040**

Lab Sample ID:	580-9079-5			Date Sampled:	02/25/2008 0955
Client Matrix:	Solid	% Moisture:	8.5	Date Received:	02/26/2008 0930

8081A Organochlorine Pesticides by Gas Chromatography

Method:	8081A	Analysis Batch: 580-28998		Instrument ID:	SEA035
Preparation:	3550B	Prep Batch: 580-28749		Lab File ID:	ECD31192.D
Dilution:	1.0			Initial Weight/Volume:	10.2859 g
Date Analyzed:	03/05/2008 0045			Final Weight/Volume:	10 mL
Date Prepared:	02/28/2008 1242			Injection Volume:	
				Column ID:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)		Qualifier	MDL	RL
4,4'-DDD		0.62	J	J	0.28	2.1
4,4'-DDE		3.0			0.24	2.1
alpha-Chlordane		ND	U		0.13	1.1
gamma-Chlordane		ND	↓		0.13	1.1
4,4'-DDT		2.0	J	J	0.28	2.1

Surrogate	%Rec	Acceptance Limits
Tetrachloro-m-xylene	54	49 - 123
DCB Decachlorobiphenyl	67	40 - 158

"U.S. NAVY PACDIV IRP VALIDATED"

TC 1408

Client: Environmental Chemical Corp. Job Number: 580-9079-1

Client Sample ID: EL041

Lab Sample ID:	580-9079-6			Date Sampled:	02/25/2008 1015
Client Matrix:	Solid	% Moisture:	6.7	Date Received:	02/26/2008 0930

8081A Organochlorine Pesticides by Gas Chromatography

Method:	8081A	Analysis Batch: 580-28998		Instrument ID:	SEA035
Preparation:	3550B	Prep Batch: 580-28749		Lab File ID:	ECD31225.D
Dilution:	10			Initial Weight/Volume:	10.1721 g
Date Analyzed:	03/05/2008 1914			Final Weight/Volume:	10 mL
Date Prepared:	02/28/2008 1242			Injection Volume:	
				Column ID:	PRIMARY

Analyte	DryWt Corrected: Y Result (ug/Kg)	Qualifier	MDL	RL
4,4'-DDE	950		2.4	21

Surrogate	%Rec	Acceptance Limits
Tetrachloro-m-xylene	106	49 - 123
DCB Decachlorobiphenyl	107	40 - 158

"U.S. NAVY PACDIV IRP VALIDATED"

Ex1408

LDC #: 18731A3a
SDG #: 580-9079
Laboratory: Test America

VALIDATION COMPLETENESS WORKSHEET
Level III

Date: 5/13/08
Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC Chlorinated Pesticides (EPA SW 846 Method 8081A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

cooler temp = 7.7°C text

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 2/25/08
II.	GC/ECD Instrument Performance Check	A	
III.	Initial calibration	A	
IV.	Continuing calibration/~~RT~~	SW	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	
VIII.	Laboratory control samples	A	LCS/P
IX.	Regional quality assurance and quality control	N	
Xa.	Florisil cartridge check	N	
Xb.	GPC Calibration	N	
XI.	Target compound identification	N	
XII.	Compound quantitation and reported CRQLs	N	
XIII.	Overall assessment of data	A	
XIV.	Field duplicates	N	
XV.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: SOIL

1	1+	EL036	11	MB 580-27849/1-A	21		31	
3	2	EL038	12		22		32	
4	3	EL039	13		23		33	
5	4	EL040	14		24		34	
6	5+	EL041	15		25		35	
	6		16		26		36	
	7		17		27		37	
	8		18		28		38	
	9		19		29		39	
	10		20		30		40	

LDC #: 1873/A3a
SDG #: see cover

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Page: 1 of 1
Reviewer: FT
2nd Reviewer: [illegible]

METHOD: ✓ GC ___ HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
What type of continuing calibration calculation was performed? ___%D or ___RPD
Y N N/A Were continuing calibration standards analyzed at the required frequencies?
Y N N/A Did the continuing calibration standards meet the %D / RPD validation criteria of ≤15.0%?
Level IV Only
Y N N/A Were the retention times for all calibrated compounds within their respective acceptance windows?

#	Date	Standard ID	Detector/ Column	Compound	%D / RPD (Limit ≤ 15.0)	RT (limit)	Associated Samples	Qualifications
	3/5/08	ECD 31202	ch B	M	15.7	( )	MB 580-27849/1-A	J/UJ/A
						( )		
						( )		
						( )		
						( )		
	~~3/5/08~~	~~ECD 31222~~	~~ch B~~	~~M~~	~~18.4~~	( )	~~2, 3, 5~~	~~J~~
						( )		
						( )		
						( )		
						( )		
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						( )		
						( )		
						( )		
						( )		
						( )		

VALIDATION FINDINGS WORKSHEET

METHOD: Pesticide/PCBs (EPASW 846 Method 8081/8082)

A. alpha-BHC	I. Dieldrin	Q. Endrin ketone	Y. Aroclor-1242	GG.
B. beta-BHC	J. 4,4'-DDE	R. Endrin aldehyde	Z. Aroclor-1248	HH.
C. delta-BHC	K. Endrin	S. alpha-Chlordane	AA. Aroclor-1254	II.
D. gamma-BHC	L. Endosulfan II	T. gamma-Chlordane	BB. Aroclor-1260	JJ.
E. Heptachlor	M. 4,4'-DDD	U. Toxaphene	CC. DB 608	KK.
F. Aldrin	N. Endosulfan sulfate	V. Aroclor-1016	DD. DB 1701	LL.
G. Heptachlor epoxide	O. 4,4'-DDT	W. Aroclor-1221	EE.	MM.
H. Endosulfan I	P. Methoxychlor	X. Aroclor-1232	FF.	NN.

Notes:

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: NAS Barbers Point, CTO 001

Collection Date: March 14, 2008

LDC Report Date: May 13, 2008

Matrix: Soil

Parameters: Chlorinated Pesticides

Validation Level: PACDIV QC Level C

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 580-9330

Sample Identification

EL043
EL043MS
EL043MSD

Introduction

This data review covers 3 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8081A for Chlorinated Pesticides (4,4'-DDD, 4,4'-DDT, and 4,4'-DDE only).

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) and the Project Procedures Manual, U.S. Navy PACDIV Installation Restoration Program (IRP), October 1998.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XIV.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. Cooler temperatures for all samples were reported at 7.7°C upon receipt by the laboratory.

II. GC/ECD Instrument Performance Check

Instrument performance was acceptable unless noted otherwise under initial calibration and continuing calibration sections.

III. Initial Calibration

Initial calibration of compounds was performed for the primary (quantitation) column and confirmation column as required by this method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

IV. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) of calibration factors in continuing standard mixtures were within the 15.0% QC limits.

The individual 4,4'-DDT breakdown (%BD) was less than or equal to 15.0%.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No chlorinated pesticide contaminants were found in the method blanks.

No field blanks were identified in this SDG.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were not within the QC limits. Since the samples were diluted out, no data were qualified.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Pesticide Cleanup Checks

a. Florisil Cartridge Check

Florisil cleanup was not required and therefore not performed in this SDG.

b. GPC Calibration

GPC cleanup was not required and therefore not performed in this SDG.

XI. Target Compound Identification

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and Reported CRQLs

Raw data were not reviewed for this SDG.

XIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XIV. Field Duplicates

No field duplicates were identified in this SDG.

NAS Barbers Point, CTO 001
Chlorinated Pesticides - Data Qualification Summary - SDG 580-9330

No Sample Data Qualified in this SDG

NAS Barbers Point, CTO 001
Chlorinated Pesticides - Laboratory Blank Data Qualification Summary - SDG 580-9330

No Sample Data Qualified in this SDG

NAS Barbers Point, CTO 001
Chlorinated Pesticides - Field Blank Data Qualification Summary - SDG 580-9330

No Sample Data Qualified in this SDG

Client: Environmental Chemical Corp.

Job Number: 580-9330-1

Client Sample ID: **EL043**

Lab Sample ID: 580-9330-1
Client Matrix: Solid

% Moisture: 12.6

Date Sampled: 03/14/2008 1045
Date Received: 03/18/2008 1151

8081A Organochlorine Pesticides by Gas Chromatography

Method: 8081A
Preparation: 3550B
Dilution: 10
Date Analyzed: 03/19/2008 1209
Date Prepared: 03/18/2008 1435

Analysis Batch: 580-29421
Prep Batch: 580-29390

Instrument ID: SEA035
Lab File ID: ECD31569.D
Initial Weight/Volume: 10.1651 g
Final Weight/Volume: 10 mL
Injection Volume:
Column ID: PRIMARY

Analyte	DryWt Corrected: Y Result (ug/Kg)		Qualifier	MDL	RL
4,4'-DDE	560			2.6	23
4,4'-DDT	340			3.0	23
4,4'-DDD	22	J	J	3.0	23

Surrogate	%Rec	Acceptance Limits
Tetrachloro-m-xylene	91	49 - 123
DCB Decachlorobiphenyl	95	40 - 158

"U.S. NAVY PACDIV IRP VALIDATED"

Rev 1408

LDC #: 18731C3a
SDG #: 580-9330
Laboratory: Test America

VALIDATION COMPLETENESS WORKSHEET
Level III

Date: 5/13/08
Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC Chlorinated Pesticides (EPA SW 846 Method 8081A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

cooler temp = 7.7°C except

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 3/14/08
II.	GC/ECD Instrument Performance Check	A	
III.	Initial calibration	A	
IV.	Continuing calibration/~~ICV~~	A	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	SW	client specified
VIII.	Laboratory control samples	A	LCS ID
IX.	Regional quality assurance and quality control	N	
Xa.	Florisil cartridge check	N	
Xb.	GPC Calibration	N	
XI.	Target compound identification	N	
XII.	Compound quantitation and reported CRQLs	N	
XIII.	Overall assessment of data	A	
XIV.	Field duplicates	N	
XV.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

SOIL

1	EL043	11	MB: 580-29390/1-A			31	
2	EL043MS	12		22		32	
3	EL043MSD	13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

VALIDATION FINDINGS WORKSHEET

METHOD: Pesticide/PCBs (EPASW 846 Method 8081/8082)

A. alpha-BHC	I. Dieldrin	Q. Endrin ketone	Y. Aroclor-1242	GG.
B. beta-BHC	J. 4,4'-DDE	R. Endrin aldehyde	Z. Aroclor-1248	HH.
C. delta-BHC	K. Endrin	S. alpha-Chlordane	AA. Aroclor-1254	II.
D. gamma-BHC	L. Endosulfan II	T. gamma-Chlordane	BB. Aroclor-1260	JJ.
E. Heptachlor	M. 4,4'-DDD	U. Toxaphene	CC. DB 608	KK.
F. Aldrin	N. Endosulfan sulfate	V. Aroclor-1016	DD. DB 1701	LL.
G. Heptachlor epoxide	O. 4,4'-DDT	W. Aroclor-1221	EE.	MM.
H. Endosulfan I	P. Methoxychlor	X. Aroclor-1232	FF.	NN.

Notes:

LDC #: 1873/C3a
SDG #: per cover

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: ✓ GC __ HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG?
Y N N/A Was an MS/MSD analyzed every 20 samples for each matrix or whenever a sample extraction was performed?
Y N N/A Were the MS/MSD percent recoveries (%R) and relative percent differences (RPD) within QC limits?

#	MS/MSD ID	Compound	MS %R (Limits)	MSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
	2+3	J	853 (47-140)	441 (47-140)	( )	1	NO QUAL 10X DL
		O	541 (34-159)	191 (34-159)	( )	↓	↓
		M	143 (44-141)	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
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NAS Barbers Point, CTO 001
Data Validation Reports
LDC# 18731

Arsenic

LDC

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: NAS Barbers Point, CTO 001

Collection Date: February 25, 2008

LDC Report Date: May 14, 2008

Matrix: Soil

Parameters: Arsenic

Validation Level: PACDIV QC Level C

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 580-9079

Sample Identification

EL037
EL040
EL037MS
EL037MSD
EL037DUP

Introduction

This data review covers 5 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 6020 for Arsenic.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (February 1994) and the Project Procedures Manual, U.S. Navy PACDIV Installation Restoration Program (IRP), October 1998.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blanks are summarized in Section III.

Field duplicates are summarized in Section XIII.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

An initial calibration was performed.

The frequency and analysis criteria of the initial calibration verification (ICV) and continuing calibration verification (CCV) were met.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Maximum Concentration	Associated Samples
ICB/CCB	Arsenic	0.036 ug/L	All samples in SDG 580-9079

Data qualification by the initial, continuing and preparation blanks (ICB/CCB/PBs) was based on the maximum contaminant concentration in the ICB/CCB/PBs in the analysis of each analyte. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks.

No field blanks were identified in this SDG.

IV. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

V. Matrix Spike Analysis

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VI. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Internal Standard (ICP-MS)

Raw data were not reviewed for this SDG.

IX. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

X. ICP Serial Dilution

ICP serial dilution was not performed in this SDG.

XI. Sample Result Verification

Raw data were not reviewed for this SDG.

XII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XIII. Field Duplicates

No field duplicates were identified in this SDG.

NAS Barbers Point, CTO 001
Arsenic - Data Qualification Summary - SDG 580-9079

No Sample Data Qualified in this SDG

NAS Barbers Point, CTO 001
Arsenic - Laboratory Blank Data Qualification Summary - SDG 580-9079

No Sample Data Qualified in this SDG

NAS Barbers Point, CTO 001
Arsenic - Field Blank Data Qualification Summary - SDG 580-9079

No Sample Data Qualified in this SDG

Client: Environmental Chemical Corp. Job Number: 580-9079-1

Client Sample ID: EL037

Lab Sample ID:	580-9079-2		Date Sampled:	02/25/2008 0900
Client Matrix:	Solid	% Moisture: 3.4	Date Received:	02/26/2008 0930

6020 Inductively Coupled Plasma - Mass Spectrometry

Method:	6020	Analysis Batch: 580-28869	Instrument ID:	SEA044
Preparation:	3050B	Prep Batch: 580-28840	Lab File ID:	N/A
Dilution:	10		Initial Weight/Volume:	1.1284 g
Date Analyzed:	03/03/2008 2241		Final Weight/Volume:	50 mL
Date Prepared:	03/03/2008 1049			

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Arsenic		1.2		0.0079	0.18

"U.S. NAVY PACDIV IRP VALIDATED"

8/25/08

Client: Environmental Chemical Corp.

Job Number: 580-9079-1

Client Sample ID: EL040

Lab Sample ID:	580-9079-5		Date Sampled:	02/25/2008 0955
Client Matrix:	Solid	% Moisture: 8.5	Date Received:	02/26/2008 0930

6020 Inductively Coupled Plasma - Mass Spectrometry

Method:	6020	Analysis Batch: 580-28869	Instrument ID:	SEA044
Preparation:	3050B	Prep Batch: 580-28840	Lab File ID:	N/A
Dilution:	10		Initial Weight/Volume:	1.3414 g
Date Analyzed:	03/03/2008 2333		Final Weight/Volume:	50 mL
Date Prepared:	03/03/2008 1049			

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Arsenic		0.74		0.0070	0.16

"U.S. NAVY PACDIV IRP VALIDATED"

T 03/14/08

LDC #: 18731A4
SDG #: 580-9079
Laboratory: Test America

VALIDATION COMPLETENESS WORKSHEET
Level III

Date: 5-14-08
Page: 1 of 1
Reviewer: MG
2nd Reviewer: [illegible]

METHOD: Arsenic (EPA SW 846 Method 6020)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 2-25-08
II.	Calibration	A	
III.	Blanks	SW	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Matrix Spike Analysis	A	MS/MSD
VI.	Duplicate Sample Analysis	A	DUP
VII.	Laboratory Control Samples (LCS)	A	LCS/LCSD
VIII.	Internal Standard (ICP-MS)	N	Not reviewed
IX.	Furnace Atomic Absorption QC	N	Not utilized
X.	ICP Serial Dilution	N	Not performed
XI.	Sample Result Verification	N	
XII.	Overall Assessment of Data	A	
XIII.	Field Duplicates	N	
XIV.	Field Blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: all soil

1	EL037	11		21		31	
2	EL040	12		22		32	
3	EL037MS	13		23		33	
4	EL037MSD	14		24		34	
5	EL037DUP	15		25		35	
6	PBS	16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 18731A4
SDG #: 580-9079

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

Page: 1 of 1
Reviewer: MG
2nd Reviewer: [illegible]

METHOD: Trace Metals (EPA SW 846 Method 6010/7000) Soil preparation factor applied: 50x ; 10x dil
Sample Concentration units, unless otherwise noted: mg/kg Associated Samples: all

Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Blank Action Limit	Sample Identification									
							No samples were qualified							
Al														
Sb														
As			0.036	0.09										
Ba														
Be														
Cd														
Ca														
Cr														
Co														
Cu														
Fe														
Pb														
Mg														
Mn														
Hg														
Mo														
Ni														
K														
Se														
Ag														
Na														
Tl														
V														
Zn														
Sn														
B														

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".
Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

BLNKSMP.4SW

Appendix D
Waste Manifests

WASTE MANAGEMENT

CHEMICAL WASTE MANAGEMENT OF THE NORTHWEST
A WASTE MANAGEMENT COMPANY

17629 Cedar Springs Lane
Arlington, OR 97812
(541) 454-2643

February 29, 2008

FORMER NAVAL AIR STATION
BON HOMME RICHARD ST
KAPOLEI, HI 96707

RE: Approval Letter

ATTENTION: Jingbo Chang

We are pleased to confirm Waste Management's approval of your waste material as described in the attached profile. Waste Management prepared a profile for the waste material based upon the information provided by you. It is important that no changes be made to the profile without Waste Management's consent. If the profile meets with your approval, then you are ready to schedule shipment of your waste.

Profile Number: OR100456
Approved Management Facility: CHEMICAL WASTE MANAGEMENT
Waste Name: PESTICIDE CONTAMINATED SOIL
Disposal Method: BIOREMEMDATION-LANDFILL
Expiration Date: 02/26/09

All waste coming to Chemical Waste Management must be scheduled, twenty-four hours in advance, with Greg Marrett. If you are unable to reach Greg you can contact our Customer Service Representative, Michelle Brandt. Unscheduled loads could be delayed several hours or even rejected.

As required by 40 CFR 264.12(b), Waste Management is notifying you that this facility has the appropriate permit(s) for, and will accept, the waste you the generator is shipping.

Listed below are people you may contact in addition to your Sales Representative if you have any questions.

Greg Marrett: Scheduling & Transportation 541-454-3220
Michelle Brandt: Customer Service 541-454-3248
Mindy McClure: Approvals 541-454-3237
Jeff Bufton: Lab Manager 541-454-3251
Gary Fisher: Operational Assistance 541-454-3234

Thank you,

Mindy McClure
Chemical Waste Management

Date Printed: 03/05/08 Chemical Waste Management, Inc. Profile #

GENERATOR'S WASTE PROFILE SHEET

ARL OR100456

(_) Check here if this is a Recertification LOCATION OF ORIGINAL CWM OF THE NORTHWEST-ARLINGTON

A/B WASTE GENERATOR AND CUSTOMER INFORMATION

1. Generator Name: FORMER NAVAL AIR STATION
2. Generator Address: BON HOMME RICHARD ST

KAPOLEI HI 96707

3. Technical Contact/Phone: JINGBO CHANG 808/545-4599
4. Alternate Contact/Phone:

Generator USEPA ID: HIP000138552

Billing Address: PACIFIC COMMERCIAL SVCS LLC
(_) Same

PO BOX 235117

HONOLULU HI 96823-3501

Billing Contact/Phone: JINGBO CHANG 808/545-4599

C. WASTE STREAM INFORMATION

1a Process Generating Waste: CLEANUP OF SITE CNTMD W/ PESTICIDES BY RINSING EMPTY CONTAINERS FORMERLY CONTAINING PESTICIDES
1b Waste Name: PESTICIDE CONTAMINATED SOIL
1c Color : VARIES
1d Strong Odor:(_);describe:
1e Physical State @ 70F: Solid(X) Liquid(_) Both(_) Gas(_) 1f Single Layer (X) Multilayer (_)
1g Free liq. range: ___ to ___% Gravity: _____ to _____ Viscosity: ___ BTU/lb: _____ to _____
1h pH: Range .0 or Not applicable (X)
1i Liquid Flash Point: < 73F (_) 73-99F (_) 100-139F (_) 140-199F (_) >= 200F (_) N.A. (X) Closed Cup (X) Open Cup (_)

2a Is this a USEPA hazardous waste (40 CFR Part 261)? Yes (X) No (_)
2a Identify ALL USEPA listed and characteristic waste code numbers (D,F,K,P,U): D004 D031 P059 U036 U060 U061 U247
State Waste Codes:
2b Do underlying hazardous constituents (UHCs) apply (40CFR268.48)?(N)
2d Is the waste predominantly debris subject to the Alternate Debris Standards(40 CFR268.45)? (N)
2e Is the waste predominantly soil subject to the Alternate Soil Treatment Standards(40 CFR268.45)? (Y)
2f Does the waste contain asbestos? (N) If yes, is waste Friable(_) Non-Friable(_) or Both(_)
2g Waste contains benzene in concentrations _ _____ ppm. NESHAP?(_)
2h Is waste remediation from a major source of Haz Air Pollutants (Site Remediation NESHAP, 40CFR 63 subpart GGGGG)?(N)
If yes, does the waste contain <500 ppmw VOHAPs at the point of determination?(_)
2i Waste contains PCBs (< >) _ _____ ppm, regulated by 40 CFR 761?(_)
Are PCBs regulated under SIRS Mega Rule (40 CFR 761,61(a)?(_)

2j CHEMICAL COMPOSITION: List ALL constituents (incl. halogenated organics) present in any concentration and forward analysis

Constituents	Range	Unit Description
SOIL	to 100	%
HEPTACHLOR EPOXIDE	0 to 0.9	MG/KG
CHLORDANE	0 to 1470	MG/KG
DDD	0 to 1200	MG/KG
DDT	0 to 6000	MG/KG
ARSENIC	0 to 202	MG/KG
TOTAL COMPOSITION (MUST EQUAL OR EXCEED 100%):	100.000000	

2k Is the waste: Pyrophoric (_) Water-Reactive (_) Shock Sensitive (_) Oxidizer (_) Carcinogen (_) Infectious (_)
Other
2l Is waste Group 1 wastewater or residual under Hazardous Organic NESHAP?(N)
2m Does the waste contain radioactive material? (N) Regulated by NRC?(_) Is radioactive waste NORM?(_)
2n Is the waste a CERCLA (40 CFR 300, Appendx B) or state mandated cleanup?(N)

3a This is a Nonwastewater.
3e Physical Appearance: SOIL
3f If waste subject to the land ban & meets treatment standards, check here: (_) & supply analytical results where applicable.
3g Tracking Number: 4998233

D. DOT Information and Shipping Volume

D1 Anticipated Annual Volume: 150 Units: TONS Shipping Frequency: ONE TIME
D2 PACKAGING: Bulk Solid (X) Bulk Liquid (_) Drum (_) Type/Size: OTHER Other SUPER SACK

GENERATOR'S CERTIFICATION

I hereby certify that all information submitted in this and all attached documents contains true and accurate descriptions of this waste. Any sample submitted is representative as defined in 40 CFR 261 - Appendix I or by using an equivalent method. All relevant information regarding known or suspected hazards in the possession of the generator has been disclosed. I authorize CWM to obtain a sample from any waste shipment for purposes of recertification.

Signature on original profile OR100456 — Signature

TERENCE H TENGAN ENVIRONMENTAL ENGINEER — Name and Title

2/12/08 — Date

Date Printed 03/05/08

Profile #
ARL OR100456

Identify ALL Characteristic and Listed USEPA hazardous waste numbers that apply (as defined by 40 CFR 261). For each waste number, identify the subcategory (as applicable, check none, or write in the description from 40 CFR 268.41, 268.42, and 268.43).

REF #	A. US EPA HAZARDOUS WASTE CODE(S)	B. SUBCATEGORY Enter the subcategory description. If not applicable, simply check none		C. APPLICABLE TREATMENT STANDARDS			D. HOW MUST THE WASTE BE MANAGED? Enter letter from below
				PERFORMANCE-BASED: Check as applicable		SPECIFIED TECHNOLOGY: If applicable enter the 40 CFR 268.42 table 1 treatment code(s)	
		DESCRIPTION	NONE	268.41(a)	268.43(a)	268.42	
1	D004		X				A
2	D031		X				A
3	P059		X		X		A
4	U036		X				A
5	U060		X				A
6	U061		X				A
7	U247		X				A
8							
9							
10							

Management under the land disposal restrictions:

A. RESTRICTED WASTE REQUIRES TREATMENT

A.1 RESTRICTED WASTE REQUIRES TREATMENT TO ALTERNATE SOIL STANDARDS

B.1 RESTRICTED WASTE TREATED TO 268.40 STANDARDS

B.3 GOOD FAITH ANALYTICAL CERTIFICATION FOR INCINERATED ORGANICS

B.4 DECHARACTERIZED WASTE REQUIRES TREATMENT FOR UHCS

B.5 RESTRICTED WASTES TREATED TO ALTERNATE SOIL STANDARD

B.6 RESTRICTED WASTES TREATED TO ALTERNATE DEBRIS STANDARD

C. RESTRICTED WASTE SUBJECT TO A VARIANCE

D. RESTRICTED WASTE CAN BE LAND DISPOSED WITHOUT FURTHER TREATMENT

E. NOT CURRENTLY SUBJECT TO LAND DISPOSAL RESTRICTIONS

Date Printed 03/05/08

Profile #
ARL OR100456

E. TRANSPORTATION INFORMATION

a. Is this a DOT Hazardous Material? Yes X No _

b. Proper Shipping Name. . . . . .: HAZARDOUS WASTE, SOLID, N.O.S.

and Additional Description if required: (HEPTACHLOR, CHLORDANE)

D004, D031, P059, U036, U060, U061, U247

c. DOT Regulations: North America Hazard Class: 9 Misc.Hazardous Mat'l I.D. NA3077 Packing Group: III
2nd Haz Cls : ___

c. CERCLA Reportable Quantity (RQ) and units (Lb, Kg): ___

e. Non-Bulk code 213 Bulk code 240

f. Special Provisions B54 IB8 IP2 T1 ___ +++ See DOT Regs for more info

g. Labels Required CLASS 9

F. SPECIAL HANDLING INFORMATION

FPT-SOIL LDR-SUBPART CC EXEMPT-BIOREMEDIATION-LANDFILL X 4

_ Material Safety Data Sheets Attached

G. OTHER INFORMATION

H. CHEMICAL WASTE MANAGEMENT CERTIFICATION

Chemical Waste Management, Inc. has all the necessary permits and licenses for the waste that has been characterized and identified by this approved profile.

Date Printed 03/05/08

Profile #
ARL OR100456

MISCELLANEOUS PROFILE FIELDS

Selling Region Lab: CWL
Master Profile No.: _____
Sales Office. . . : PDX
Location Orig. . .: ARL
Profile Expires . : 2/26/09
Approved. . . . . : 2/26/08
Signed Profile Present: Y Change Pending: _ Waste Status: A
Site (DCS) Status: 1 WASTE APPROVED
Prof. Tracking No: 4998233

Fuels Approval.: _
Pumpable Liquid Exact: ___ % OR Range: ___ - ___ %
Type of Pump. .: _____
Additional Anticipated Vol: _____ Per: _ Unit Code/Des: ___ _____

Handling Codes: __ _____ __ _____
__ _____ __ _____
__ _____ __ _____

EPA Data: Status Code: C Tax Code. .: 1
Permit No: _____ Expr. Date.: _____ Volume. . .: _____
Certificate of Destruction or Disposal Required ? _ Project # : _____
DOT Properties: Inhalation: _ Dermal: _ Oral: _ Flammable: _ Health: _

Percent Taxable: _____ No. of Labels. . .: __
Tranship Dest .: ___ Download Generator: 1465962
Material Class.: _ DCS Generator #...: 4501465962
Treatment Codes: S06 T71 D80 ___ ___ ___
Process Codes .: BIO ___ ___ ___ ___ ___ ___ ___ ___ ___
Schedule Category : BIO
Schedule Interval : _____
Listed Solvent Waste: _ Hal. Org. Compounds.: _ RCRA Reactive. . . .: _
Etiologic. . . . . .: _ Water Reactive . . .: _ Pesticide Mfg. Waste: _
Ignition Screen : ___ Gas Evolution : ___ Wet Zone . . . . . .: _
Self-heating cube sz ____ Vapor Concentration _____ Boiling Point F ___
Is Gas Ignitable? _ Corrosive to Steel or Aluminum _ Organic Peroxide _
Chemical Family Name _____

GENERATOR FROM PAGE 1

Business Name	USEPA ID	Rltn	Contract in Place	at	Expires on	Evergreen Contract
FORMER NAVAL AIR STATION	HIP000138552	G	_	___	_____	_

ADDITIONAL BUSINESSES

Business Name	USEPA ID	Rltn	Contract in Place	at	Expires on	Evergreen Contract
PACIFIC COMMERCIAL SVCS LLC	HIR000097824	I	Y	ARL	_____	Y

ADDITIONAL PROFILE COMMENTS

Cat	Comment	Cat	Comment

SUPPLEMENTAL FIELDS

Field	Value
DESWO	G39
MGTCD	H132
FRMCD	W301

Date Printed 3/05/08

Profile Change History

Profile #
ARL OR100456

This section lists comments describing changes made to the profile.

Profile Change Comments	Date	User
CWL/OR1004 Entire profile copied to 56A/RLOR10	2/26/08	WM0225MLM
CWL/OR1004 Core Profile Info copied to 56A/RLOR10	2/26/08	WM0225MLM
ENTRY COMPLETE FOR APPROVAL	2/26/08	WM0225MLM
CWL/OR1004 Change Log copied to 56A/RLOR10	2/26/08	WM0225MLM
CWL/OR1004 Entire profile copied to 56A/RLOR10	2/26/08	WM0225MLM

ALOHA CARGO TRANSPORT - PIER IN-GATE RECEIPT

PIER 2
HONOLULU, HI 96813

PHONE (808) 536-7033
FAX (808) 531-3004
SEATTLE TOLL FREE (800) 327-7739

DATE 04/08/2008

SHIPPER
PACIFIC COMMERCIAL SERVICES
P.O. BOX 235117

HONOLULU, HI 96823

CONSIGNEE
CHEMICAL WASTE MANAGEMENT NW
17629 CEDAR SPRINGS LN

ARLINGTON, OR 97812

BOOKING NO.

DRIVER COLLECT COD CHARGES
☐ YES ☐ NO

SPECIAL INSTRUCTIONS

AMOUNT

ORIGIN HONOLULU HI

DESTINATION SEATTLE WA

NO.PACKAGES	HM	KIND OF PKG.- DESCRIPTION OF ARTICLES, SPECIAL MARKS, AND EXCEPTIONS	WEIGHT (SUB TO CORR.)
		CHASSIS 40' FIXED 3 AXLE NSIC-703016 40' CONTAINER HIGH CUBE NSIU-405095 H807 -500478 FULL 40 IN HAZ 9 COMMENT IN:	

This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. SIGNED X

DELIVERING CARRIER: PCS BY X

DESCRIBED FREIGHT RECEIVED IN GOOD ORDER EXCEPT AS NOTED FOR CARRIER X DATE

DRAYMAN

395640

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: HIP0001385 52
2. Page 1 of 3 ~~2~~
3. Emergency Response Phone: 1-800-535-5053
4. Manifest Tracking Number: 001991685 JJK

5. Generator's Name and Mailing Address
FORMER NAVAL AIR STATION BARBERS POINT
850 TICONDEROGA ST,STE110, ATTN:TERENCE TENGAN
PEARL HARBOR, HI 96860-5101
Generator's Phone: 808-471-1111x320

Generator's Site Address (if different than mailing address)
BON HOMME RICHARD STREET
KAPOLEI, HI 96707-0350
HIC3557-01

6. Transporter 1 Company Name: PACIFIC COMMERCIAL SERVICES, LLC. 808-545-4599
U.S. EPA ID Number: HIR000097824

7. Transporter 2 Company Name: NORTHLAND SERVICES 800-327-7739
U.S. EPA ID Number: WAD981773005

8. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT OF THE NW
17629 CEDAR SPRINGS LANE
ARLINGTON, OR 97812
Facility's Phone: 541-454-2643
U.S. EPA ID Number: ORD089452353

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. RQ,HAZARDOUS WASTE SOLID, N.O.S. (SOIL WITH HEPTACHLOR, CHLORDANE,DDD,DDE,DDT,ARSENIC, METHOXYCHLOR)9, NA3077 PGIII (U036 U060 U061)	020	BA	46980	P	U036 U247 P059 D004 ~~D026~~ U061 D031
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
9b1: HWSOLID OR100456 CERCLA HAZARDOUS WASTE CY 2006 9b1: 171 B-5, 47030P, 23,535
9b2: * ERG# 9b2: SEND COPY TO: PCS LLC
9b3: * CONTAINER #: NSLU 405095-0 JOB# 9b3: P.O. BOX 235117
9b4: * SEAL #: 0219626 3557 9b4: HONOLULU, HI 96823

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable International and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: TERENCE H. TENGAN
Signature: Terence H. Tengan
Month 04 Day 07 Year 08

GENERATOR

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Dustin Dias
Signature: Dustin Dias
Month 4 Day 7 Year 08
Transporter 2 Printed/Typed Name: Marlene Tom
Signature: Marlene Tom
Month 4 Day 8 Year 08

DESIGNATED FACILITY

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Removed waste code D030, added U061, added soil LDR per Kristin ~~[illegible]~~ Carter/WM 5-1-08 sm 5-1-08
Manifest Reference Number:

18b. Alternate Facility (or Generator) U.S. EPA ID Number
Facility's Phone:

18c. Signature of Alternate Facility (or Generator) Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. H081 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name: Janice Shand
Signature:
Month 5 Day 1 Year 08

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

sms

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) 395640

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST (Continuation Sheet)

21. Generator ID Number: H I P 0 0 0 1 3 8 5 5 2

22. Page: 2

23. Manifest Tracking Number: 001991685JJK

HIC3557-01

24. Generator's Name: FORMER NAVAL AIR STATION BARBERS POINT

25. Transporter 3 Company Name: WEST COAST TRUCKING — U.S. EPA ID Number: W A H 0 0 0 0 1 6 6 8 3

26. Transporter 4 Company Name: UNION PACIFIC RAILROAD COMPANY — U.S. EPA ID Number: N E D 0 0 1 7 9 2 9 1 0

GENERATOR

27a. HM	27b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	28. Containers No.	28. Containers Type	29. Total Quantity	30. Unit Wt./Vol.	31. Waste Codes		

32. Special Handling Instructions and Additional Information

TRANSPORTER

33. Transporter 3 Acknowledgment of Receipt of Materials

Printed/Typed Name: Kleets TARAS — Signature: [signature] — Month 4 Day 25 Year 08

34. Transporter 4 Acknowledgment of Receipt of Materials

Printed/Typed Name: R Sethu — Signature: [signature] — Month 4 Day 25 Year 08

DESIGNATED FACILITY

35. Discrepancy

36. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

EPA Form 8700-22A (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) 395640

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST (Continuation Sheet)	21. Generator ID Number	22. Page	23. Manifest Tracking Number
	HIP000138552	3 of 3	001991685 JJK

24. Generator's Name

Former Naval Air Station Barbers Point

25. Transporter 5 Company Name Columbia Ridge Landfill — U.S. EPA ID Number ORD987173457

26. Transporter _____ Company Name — U.S. EPA ID Number

27a. HM	27b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	28. Containers No.	28. Containers Type	29. Total Quantity	30. Unit Wt./Vol.	31. Waste Codes		

32. Special Handling Instructions and Additional Information

GENERATOR

33. Transporter 5 Acknowledgment of Receipt of Materials

Printed/Typed Name: Angela Timmerman — Signature: Angela Timmerman — Month 5 Day 01 Year 08

34. Transporter _____ Acknowledgment of Receipt of Materials

Printed/Typed Name — Signature — Month — Day — Year

TRANSPORTER

35. Discrepancy

36. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

DESIGNATED FACILITY

EPA Form 8700-22A (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

ALOHA CARGO TRANSPORT - PIER IN-GATE RECEIPT

PIER 2
HONOLULU, HI 96813

PHONE (808) 536-7033
FAX (808) 531-3004
SEATTLE TOLL FREE (800) 327-7739

DATE 04/07/2008

S
PACIFIC COMMERCIAL SERVICES
P.O. BOX 235117

HONOLULU, HI 96823

CONSIGNEE
CHEMICAL WASTE MANAGEMENT NW
17629 CEDAR SPRINGS LN

ARLINGTON, OR 97812

BOOKING NO.

DRIVER COLLECT COD CHARGES
☐ YES ☐ NO

SPECIAL INSTRUCTIONS

AMOUNT

ORIGIN HONOLULU HI

DESTINATION SEATTLE WA

NO PACKAGES	HM	KIND OF PKG. - DESCRIPTION OF ARTICLES, SPECIAL MARKS, AND EXCEPTIONS	WEIGHT (SUB TO CORR.)
		CHASSIS 40' FIXED 3 AXLE NSIC-703088 40' CONTAINER HIGH CUBE NSIU-409048 H807 500478 COMMENT IN: FULL 40 IN HAZ 9	

his is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and re in proper condition for transportation according to the applicable regulations of the Department of Transportation SIGNED X

DELIVERING CARRIER PCS BY X

DESCRIBED FREIGHT RECEIVED IN GOOD ORDER EXCEPT AS NOTED FOR CARRIER X DATE

DRAYMAN

Northland Services, Inc. Aloha Cargo Transport

Division of Northland Services, Inc.

B/L No. 500478

P. O. Box 24527 • Seattle, WA 98124
(206) 763-3000 (800) 426-3113 Fax (206) 767-5579

BILL OF LADING ORIGINAL - NOT NEGOTIABLE

BILL OF LADING INSTRUCTIONS AS GIVEN BY SHIPPER OR HIS REPRESENTATIVE

DATE	BOOKING / PRO NO.	VESSEL AND VOYAGE NO.	CONTROL NO.
4/4/08	500478	H807E Hawaii Trader	
PORT OF LOADING	**PORT OF DISCHARGE**	**DESTINATION**	**BEYOND CARRIER**
Honolulu	Seattle	Seattle	

SHIPPER	CONSIGNEE	COLLECT PREPAID OTHER Please Specify
Pacific Commercial Services	Chemical Waste Management NW	☐ ☐ ☒
P.O. Box 235117	17629 Cedar Springs Ln	BILL TO: Please show complete address - include zip Pacific Commercial Services
Honolulu, HI 96823	Arlington, OR 97812	P.O. Box 235117
Kevin Mizuno		Honolulu, HI 96823
TELEPHONE 808-545-4599, 808-845-9773fax	TELEPHONE 206-719-4754, 866-239-6687	

CONTAINER NO.	CONTAINER TYPE	SEAL NO.	LOAD DATE	SET TEMP	PROCESSOR / SUPPLIER
NSIU 409048	40' high	0219616	4/4/08	°F	

NO OF PIECES	KIND OF PACKAGE	HM	DESCRIPTION OF GOODS PROVIDED BY SHIPPER	NET WEIGHT	GROSS WEIGHT
20	BA	X	Soil with Pesticides, RQ Hazardous	47968	47968
			Waste Solid, n.o.s., 9, NA3077, PG III		
			(Soil with Heptachlor, Chlordane)		

n accepting this Bill of Lading the shipper agrees that the custody and carriage of the goods dentified shall be subject to the terms and conditions on the reverse hereof and of Carrier's tariff or applicable contract of affreightment, which shall govern the relations, whatsoever they may be, between the carrier and the shipper, owner and/or consignee of the goods, in every contingency and whensoever occurring.

This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. If the shipment is of a hazardous nature and has been tendered in a container, it is declared that the packing of the container has been carried out in accordance with the provisions of 49 CFR 176.27 (c).

Shipper: Illma H. Ingram Date: 4/4/08

Received $ _____ to apply to prepayment of the charges on the property described hereon.

Agent or Carrier representative: Northland Services, Inc.

Per: (The signature here acknowledges only the amount prepaid.)

Received for Carrier in good order, count, and condition unless otherwise noted hereon.

Date: 4/7/8

Received By: [illegible]

Quantity: _____

Temperature Received: _____

All terms and conditions available online at www.northlandservices.com/terms/NSI_Terms.htm

Shipper's attention is directed to Section 18 on the reverse side of this Bill of Lading. Where rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property. THE AGREED OR DECLARED VALUE OF THE PROPERTY IS HEREBY STATED BY THE SHIPPER NOT TO BE IN EXCESS OF $_____ PER _____

Shipper: _____ Date: _____

Standard tariff provisions limit Carrier's liability for household goods to $0.60 per lb. per item. Shipper's signature hereon acknowledges this released valuation unless a different value is declared here and additional charges are paid per Tariff NOLS-100, Rule 985.
THE RELEASED VALUE OF THE PROPERTY IS NOT TO EXCEED $_____ PER LB. PER ITEM

Shipper: Date:

395605

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: H I P 0 0 0 1 3 8 5 5 2
2. Page 1 of: 3 ~~2~~
3. Emergency Response Phone: 1-800-535-5053
4. Manifest Tracking Number: 001991686 JJK

GENERATOR

5. Generator's Name and Mailing Address
FORMER NAVAL AIR STATION BARBERS POINT
850 TICONDEROGA ST,STE110, ATTN:TERENCE TENGAN
PEARL HARBOR, HI 96860-5101
Generator's Phone: 808-471-1111x320

Generator's Site Address (if different than mailing address)
BON HOMME RICHARD STREET
KAPOLEI, HI 96707-0350
HIC3557-02

6. Transporter 1 Company Name: PACIFIC COMMERCIAL SERVICES, LLC. 808-545-4599
U.S. EPA ID Number: H I R 0 0 0 0 9 7 8 2 4

7. Transporter 2 Company Name: NORTHLAND SERVICES 800-327-7739
U.S. EPA ID Number: W A D 9 8 1 7 7 3 0 0 5

8. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT OF THE NW
17629 CEDAR SPRINGS LANE
ARLINGTON, OR 97812
Facility's Phone: 541-454-2643
U.S. EPA ID Number: O R D 0 8 9 4 5 2 3 5 3

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. RQ,HAZARDOUS WASTE SOLID, N.O.S. (SOIL WITH HEPTACHLOR, CHLORDANE,DDD,DDE,DDT,ARSENIC, METHOXYCHLOR)9, NA3077 PGIII (U036 U060 U061)	20 ~~020~~	BA	~~26580~~ 47978 ~~46980~~ 32	P	U036 U247 P059 U061 D004 ~~D020~~ D031
	2. ~~RQ Hazardous Waste Solid, N.O.S. (soil with Heptachlor, Chlordane, DDD, DDE, DDT, Arsenic, Methoxychlor) 9, NA3077, PGIII~~	~~9~~	~~CF~~	~~21586~~	~~P~~	~~U036 U247 P059 D004 U061 D031~~
	3. ~~lm 4-30-08~~					
	4.					

14. Special Handling Instructions and Additional Information
~~9b1: HWSOLID~~ ~~OR100456~~ CY 2006 9b1: 171 ~~B-5480508, 24.05T~~ SEND COPY TO:
9b2: * CERCLA HAZARDOUS WASTE ERG# 9b2: PCS LLC
9b3: * CONTAINER #: NSIU 4090 48 JOB# 9b3: P.O. BOX 235117
9b4: * SEAL #: 0219616 3557 9b4: HONOLULU, HI 96823

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: TERENCE H. TENGAN
Signature: [signature]
Month 04 Day 04 Year 08

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: MICHAEL A. DONATIELLO
Signature: [signature]
Month 4 Day 4 Year 08
Transporter 2 Printed/Typed Name: Tom Crescenzi
Signature: [signature]
Month 4 Day 7 Year 08

DESIGNATED FACILITY

18. Discrepancy
18a. Discrepancy Indication Space ☒ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
~~Due to container type 02 spirl added per Kristin Castner/WH lm 4-30-08~~
~~Removed waste code U020, added U061 per Kristin Castner/WH lm 4-30-08~~
Manifest Reference Number:
18b. Alternate Facility (or Generator) U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator) Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. H081 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name: Tamra Strand
Signature: [signature]
Month 4 Day 30 Year 08

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

BMS

395605

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST (Continuation Sheet)

21. Generator ID Number: H I P 0 0 0 1 3 8 5 5 2

22. Page: 2

23. Manifest Tracking Number: 001991686JJK

HIC3557-02

24. Generator's Name: FORMER NAVAL AIR STATION BARBERS POINT

25. Transporter 3 Company Name: WEST COAST TRUCKING — U.S. EPA ID Number: W A H 0 0 0 0 1 6 6 8 3

26. Transporter 4 Company Name: UNION PACIFIC RAILROAD COMPANY — U.S. EPA ID Number: N E D 0 0 1 7 9 2 9 1 0

27a. HM	27b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	28. Containers No.	28. Containers Type	29. Total Quantity	30. Unit Wt./Vol.	31. Waste Codes		

32. Special Handling Instructions and Additional Information

GENERATOR

33. Transporter 3 Acknowledgment of Receipt of Materials

Printed/Typed Name: ANATOLIY — Signature: [signature] — Month Day Year: 10 9 25 08

34. Transporter 4 Acknowledgment of Receipt of Materials

Printed/Typed Name: L Sattro — Signature: [signature] — Month Day Year: 4 12 5 8

TRANSPORTER

35. Discrepancy

36. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

DESIGNATED FACILITY

EPA Form 8700-22A (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

395605

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST (Continuation Sheet)

21. Generator ID Number: HIP 000138552

22. Page: 3 of 3

23. Manifest Tracking Number: 001991686 JJK

24. Generator's Name: Former Naval Air Station Barbers Point

25. Transporter 5 Company Name: Columbia Ridge Landfill — U.S. EPA ID Number: ORD 987173457

26. Transporter _____ Company Name — U.S. EPA ID Number:

27a. HM	27b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	28. Containers No.	28. Containers Type	29. Total Quantity	30. Unit Wt./Vol.	31. Waste Codes		

32. Special Handling Instructions and Additional Information

GENERATOR

33. Transporter 5 Acknowledgment of Receipt of Materials

Printed/Typed Name: Angela Timmerman — Signature: Angela Timmerman — Month 4 Day 29 Year 08

34. Transporter _____ Acknowledgment of Receipt of Materials

Printed/Typed Name — Signature — Month Day Year

TRANSPORTER

35. Discrepancy

36. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

DESIGNATED FACILITY

EPA Form 8700-22A (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

ALOHA CARGO TRANSPORT - PIER IN-GATE RECEIPT

PIER 2
HONOLULU, HI 96813

PHONE (808) 536-7033
FAX (808) 531-3004
SEATTLE TOLL FREE (800) 327-7739

DATE 04/07/2008

S
H PACIFIC COMMERCIAL SERVICES
P.O. BOX 235117

HONOLULU, HI 96823

CONSIGNEE
CHEMICAL WASTE MANAGEMENT NW
17629 CEDAR SPRINGS LN

ARLINGTON, OR 97812

BOOKING NO.

DRIVER COLLECT COD CHARGES
☐ YES ☐ NO

SPECIAL INSTRUCTIONS

AMOUNT

ORIGIN HONOLULU HI

DESTINATION SEATTLE WA

NO.PACKAGES	HM	KIND OF PKG.- DESCRIPTION OF ARTICLES, SPECIAL MARKS, AND EXCEPTIONS	WEIGHT (SUB TO CORR.)
		CHASSIS 40' FIXED 3 AXLE NSIC-703055 40' CONTAINER HIGH CUBE JORU-642183 H807 -500478 HAZ MAT 9 COMMENT IN:	

This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. SIGNED X

DELIVERING CARRIER: PCS BY X

DESCRIBED FREIGHT RECEIVED IN GOOD ORDER EXCEPT AS NOTED FOR CARRIER X DATE

395642

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: H I P 0 0 0 1 3 8 5 5 2

2. Page 1 of 3-2

3. Emergency Response Phone: 1-800-535-5053

4. Manifest Tracking Number: 001991687 JJK

GENERATOR

5. Generator's Name and Mailing Address
FORMER NAVAL AIR STATION BARBERS POINT
850 TICONDEROGA ST,STE110, ATTN:TERENCE TENGAN
PEARL HARBOR, HI 96860-5101
Generator's Phone: 808-471-1111x320

Generator's Site Address (if different than mailing address)
BON HOMME RICHARD STREET
KAPOLEI, HI 96707-0350
HIC3557-03

6. Transporter 1 Company Name: PACIFIC COMMERCIAL SERVICES, LLC. 808-545-4599
U.S. EPA ID Number: H I R 0 0 0 0 9 7 8 2 4

7. Transporter 2 Company Name: NORTHLAND SERVICES 800-327-7739
U.S. EPA ID Number: W A D 9 8 1 7 7 3 0 0 5

8. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT OF THE NW
17629 CEDAR SPRINGS LANE
ARLINGTON, OR 97812
Facility's Phone: 541-454-2643
U.S. EPA ID Number: O R D 0 8 9 4 5 2 3 5 3

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. RQ,HAZARDOUS WASTE SOLID, N.O.S. (SOIL WITH HEPTACHLOR, CHLORDANE,DDD,DDE,DDT,ARSENIC, METHOXYCHLOR)9, NA3077 PGIII (U036 U060 U061)	020	BA	47305	P	U036 U247 P059 D004 ~~D020~~ U061 D031
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
9b1: HWSOLID OR100456 CY 2006 9b1: 171 SEND COPY TO:
9b2: * CERCLA HAZARDOUS WASTE ERG# 9b2: PCS LLC
9b3: * CONTAINER #: JORU642183-9 JOB# 9b3: P.O. BOX 235117
9b4: * SEAL #: 0219657 3557 9b4: HONOLULU, HI 96823

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: TERENCE H. TENGAN
Signature: [signature]
Month 04 Day 07 Year 08

INTL

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Dustin Dias
Signature: [signature]
Month 4 Day 7 Year 08

Transporter 2 Printed/Typed Name: Marlin Tom
Signature: [signature]
Month 4 Day 7 Year 08

DESIGNATED FACILITY

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Removed waste code D020, added U061, added soil LDR per Kristin Costner/KOH 5-1-08
Manifest Reference Number:

18b. Alternate Facility (or Generator) U.S. EPA ID Number
Facility's Phone:

18c. Signature of Alternate Facility (or Generator) Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. H081 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name: James Strand
Signature: [signature]
Month 5 Day 1 Year 08

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

BMS

395642

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST (Continuation Sheet)

21. Generator ID Number: HIP0001385 52

22. Page: 2

23. Manifest Tracking Number: 001991687JJK

HIC3557-03

24. Generator's Name: FORMER NAVAL AIR STATION BARBERS POINT

25. Transporter 3 Company Name: WEST COAST TRUCKING — U.S. EPA ID Number: WAH000016683

26. Transporter 4 Company Name: UNION PACIFIC RAILROAD COMPANY — U.S. EPA ID Number: NED001792910

27a. HM	27b. U.S. DOT Description (Including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	28. Containers No.	28. Containers Type	29. Total Quantity	30. Unit Wt./Vol.	31. Waste Codes		

32. Special Handling Instructions and Additional Information

GENERATOR

33. Transporter 3 Acknowledgment of Receipt of Materials

Printed/Typed Name: ANATOLIY — Signature: — Month 04 Day 25 Year 08

34. Transporter 4 Acknowledgment of Receipt of Materials

Printed/Typed Name: L Sotto — Signature: — Month 4 Day 25 Year 8

TRANSPORTER

35. Discrepancy

36. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

DESIGNATED FACILITY

EPA Form 8700-22A (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) 395642

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST (Continuation Sheet)

21. Generator ID Number: HIP000138552

22. Page: 3 of 3

23. Manifest Tracking Number: 001991687 JJK

24. Generator's Name: Former Naval Air Station Barbers Point

25. Transporter 5 Company Name: Columbia Ridge Landfill — U.S. EPA ID Number: ORD987173457

26. Transporter _____ Company Name — U.S. EPA ID Number:

27a. HM	27b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	28. Containers No.	28. Containers Type	29. Total Quantity	30. Unit Wt./Vol.	31. Waste Codes		

32. Special Handling Instructions and Additional Information

GENERATOR

33. Transporter 5 Acknowledgment of Receipt of Materials

Printed/Typed Name: Angela Timmerman — Signature: Angela Timmerman — Month 5 Day 01 Year 08

34. Transporter _____ Acknowledgment of Receipt of Materials

Printed/Typed Name — Signature — Month Day Year

TRANSPORTER

35. Discrepancy

36. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

DESIGNATED FACILITY

EPA Form 8700-22A (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

ALOHA CARGO TRANSPORT - PIER IN-GATE RECEIPT

PIER 2
HONOLULU, HI 96813

PHONE (808) 536-7033
FAX (808) 531-3004
SEATTLE TOLL FREE (800) 327-7739

DATE 04/07/2008

S
H
I
P
P
E
R

PACIFIC COMMERCIAL SERVICES
P.O. BOX 235117

HONOLULU, HI 96823

CONSIGNEE

CHEMICAL WASTE MANAGEMENT NW
17629 CEDAR SPRINGS LN

ARLINGTON, OR 97812

BOOKING NO.

DRIVER COLLECT COD CHARGES
☐ YES ☐ NO

SPECIAL INSTRUCTIONS

AMOUNT

ORIGIN HONOLULU HI

DESTINATION SEATTLE WA

NO PACKAGES	HM	KIND OF PKG.- DESCRIPTION OF ARTICLES, SPECIAL MARKS, AND EXCEPTIONS	WEIGHT (SUB TO CORR.)
		CHASSIS 40' FIXED 3 AXLE NSIC-703088 40' CONTAINER HIGH CUBE NSIU-404970 H807 -500478 HAZ MATERIALS COMMENT IN:	

This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation SIGNED X

DELIVERING CARRIER PCS BY X

DESCRIBED FREIGHT RECEIVED IN GOOD ORDER EXCEPT AS NOTED FOR CARRIER X DATE

DRAYMAN

Northland Services, Inc. Aloha Cargo Transport

Division of Northland Services, Inc.

B/L No. 500478

P. O. Box 24527 • Seattle, WA 98124
(206) 763-3000 (800) 426-3113 Fax (206) 767-5579

BILL OF LADING ORIGINAL - NOT NEGOTIABLE

BILL OF LADING INSTRUCTIONS AS GIVEN BY SHIPPER OR HIS REPRESENTATIVE

DATE	BOOKING / PRO NO.	VESSEL AND VOYAGE NO.	CONTROL NO.
4/7/08	500478	H807E Hawaii Trader	
PORT OF LOADING	**PORT OF DISCHARGE**	**DESTINATION**	**BEYOND CARRIER**
Honolulu	Seattle	Seattle	

SHIPPER	CONSIGNEE	COLLECT ☐ PREPAID ☐ OTHER Please Specify ☒
Pacific Commercial Services	Chemical Waste Management NW	
P.O. Box 235117	17629 Cedar Springs Ln	BILL TO: Please show complete address - include zip Pacific Commercial Services
Honolulu, HI 96823	Arlington, OR 97812	P.O. Box 235117
Kevin Mizuno		Honolulu, HI 96823
TELEPHONE 808-545-4599, 808-845-9773fax	TELEPHONE 206-719-4754, 866-239-6687	

CONTAINER NO.	CONTAINER TYPE	SEAL NO.	LOAD DATE	SET TEMP	PROCESSOR / SUPPLIER
NSIU 404970-7	40' high	0219621	4/7/08	°F	

NO OF PIECES	KIND OF PACKAGE	HM	DESCRIPTION OF GOODS PROVIDED BY SHIPPER	NET WEIGHT	GROSS WEIGHT
24	BA	X	Soil with Pesticides, RQ Hazardous	51424	51424
			Waste Solid, n.o.s., 9, NA3077, PG III		
			(Soil with Heptachlor, Chlordane)		
				238	

In accepting this Bill of Lading the shipper agrees that the custody and carriage of the goods identified shall be subject to the terms and conditions on the reverse hereof and of Carrier's tariff or applicable contract of affreightment, which shall govern the relations, whatsoever they may be, between the carrier and the shipper, owner and/or consignee of the goods, in every contingency and whensoever occurring.

This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. If the shipment is of a hazardous nature and has been tendered in a container, it is declared that the packing of the container has been carried out in accordance with the provisions of 49 CFR 176.27 (c).

Shipper: [signature] Date: 4/7/08

Received $ _____ to apply to prepayment of the charges on the property described hereon.

Agent or Carrier representative: Northland Services, Inc.

Per: (The signature here acknowledges only the amount prepaid.)

Received for Carrier in good order, count, and condition unless otherwise noted hereon.

Date: 4/7/8

Received By: [signature]

Quantity: _____

Temperature Received: _____

All terms and conditions available online at www.northlandservices.com/terms/NSI_Terms.htm

Shipper's attention is directed to Section 18 on the reverse side of this Bill of Lading. Where rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property.
THE AGREED OR DECLARED VALUE OF THE PROPERTY IS HEREBY STATED BY THE SHIPPER NOT TO BE IN EXCESS OF
$_____ PER _____

Standard tariff provisions limit Carrier's liability for household goods to $0.60 per lb. per item. Shipper's signature hereon acknowledges this released valuation unless a different value is declared here and additional charges are paid per Tariff NOLS-100, Rule 985.
THE RELEASED VALUE OF THE PROPERTY IS NOT TO EXCEED $_____ PER LB. PER ITEM

395622

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: HIP000138552
2. Page 1 of 3 ~~2~~
3. Emergency Response Phone: 1-800-535-5053
4. Manifest Tracking Number: 001991690 JJK

5. Generator's Name and Mailing Address
FORMER NAVAL AIR STATION BARBERS POINT
850 TICONDEROGA ST,STE110, ATTN:TERENCE TENGAN
PEARL HARBOR, HI 96860-5101
Generator's Phone: 808-471-1111x320

Generator's Site Address (if different than mailing address)
BON HOMME RICHARD STREET
KAPOLEI, HI 96707-0350
HIC3557-06

6. Transporter 1 Company Name: PACIFIC COMMERCIAL SERVICES, LLC. 808-545-4599
U.S. EPA ID Number: HIR000097824

7. Transporter 2 Company Name: NORTHLAND SERVICES 800-327-7739
U.S. EPA ID Number: WAD981773005

8. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT OF THE NW
17629 CEDAR SPRINGS LANE
ARLINGTON, OR 97812
Facility's Phone: 541-454-2643
U.S. EPA ID Number: ORD089452353

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. RQ,HAZARDOUS WASTE SOLID, N.O.S. (SOIL WITH HEPTACHLOR, CHLORDANE,DDD,DDE,DDT,ARSENIC, METHOXYCHLOR)9, NA3077 PGIII (U036 U060 U061)	024	BA	51424	P	U036 U247 P059 D004 ~~D020~~ U061 D031
	2.					Sm 4-30-08
	3.					
	4.					

14. Special Handling Instructions and Additional Information
9b1: HWSOLID OR100456 CERCLA HAZARDOUS WASTE CY 2006 9b1: 171 B-5,51900P, 25.95T SEND COPY TO:
9b2: * ERG# 9b2: PCS LLC
9b3: * CONTAINER #: NSIU 404970-7 JOB# 9b3: P.O. BOX 235117
9b4: * SEAL #: 021962 3557 9b4: HONOLULU, HI 96823

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: TERENCE H. TENGAN Signature: Terence H. Tengan Month 04 Day 07 Year 08

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Dustin Dias Signature: Month 4 Day 7 Year 08
Transporter 2 Printed/Typed Name: Marlene Tom Signature: Marlene Tom Month 4 Day 7 Year 08

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Waste code D020 removed U061 added per Kristin Cashier/WTI Sm 4-30-08
Manifest Reference Number:

18b. Alternate Facility (or Generator) U.S. EPA ID Number
Facility's Phone:

18c. Signature of Alternate Facility (or Generator) Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. H081 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name: Tamra Strand Signature: Month 5 Day 01 Year 08

GENERATOR | INT'L | TRANSPORTER | DESIGNATED FACILITY

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

BMS

395622

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST (Continuation Sheet)

21. Generator ID Number: HIP000138552

22. Page: 2

23. Manifest Tracking Number: 001991690JJK

HIC3557-06

24. Generator's Name: FORMER NAVAL AIR STATION BARBERS POINT

25. Transporter 3 Company Name: WEST COAST TRUCKING — U.S. EPA ID Number: WAH000016683

26. Transporter 4 Company Name: UNION PACIFIC RAILROAD COMPANY — U.S. EPA ID Number: NED001792910

27a. HM	27b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	28. Containers No.	28. Containers Type	29. Total Quantity	30. Unit Wt./Vol.	31. Waste Codes		

32. Special Handling Instructions and Additional Information

GENERATOR

33. Transporter 3 Acknowledgment of Receipt of Materials

Printed/Typed Name: KLETS TAAAS — Signature: [signature] — Month 4 Day 25 Year 08

34. Transporter 4 Acknowledgment of Receipt of Materials

Printed/Typed Name: L Sattoo — Signature: [signature] — Month 4 Day 25 Year 8

TRANSPORTER

35. Discrepancy

36. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

DESIGNATED FACILITY

EPA Form 8700-22A (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

395622

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST (Continuation Sheet)

21. Generator ID Number: HIP000138552

22. Page: 3 of 3

23. Manifest Tracking Number: 001991690JJK ~~JM-5508~~

24. Generator's Name: Former Naval Air Station Barbers Point

25. Transporter 5 Company Name: Columbia Ridge Landfill — U.S. EPA ID Number: ORD987173457

26. Transporter _____ Company Name — U.S. EPA ID Number:

27a. HM	27b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	28. Containers No.	28. Containers Type	29. Total Quantity	30. Unit Wt./Vol.	31. Waste Codes		

32. Special Handling Instructions and Additional Information

33. Transporter 5 Acknowledgment of Receipt of Materials

Printed/Typed Name: Angela Timmerman — Signature: Angela Timmerman — Month 4 Day 30 Year 08

34. Transporter _____ Acknowledgment of Receipt of Materials

Printed/Typed Name — Signature — Month — Day — Year

35. Discrepancy

36. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

GENERATOR

TRANSPORTER

DESIGNATED FACILITY

EPA Form 8700-22A (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

ALOHA CARGO TRANSPORT - PIER IN-GATE RECEIPT

PIER 2
HONOLULU, HI 96813

PHONE (808) 536-7033
FAX (808) 531-3004
SEATTLE TOLL FREE (800) 327-7739

DATE 04/07/2008

BOOKING NO.

DRIVER COLLECT COD CHARGES ☐ YES ☐ NO

SHIPPER
PACIFIC COMMERCIAL SERVICES
P.O. BOX 235117

HONOLULU, HI 96823

CONSIGNEE
CHEMICAL WASTE MANAGEMENT NW
17629 CEDAR SPRINGS LN

ARLINGTON, OR 97812

SPECIAL INSTRUCTIONS

AMOUNT

ORIGIN HONOLULU HI

DESTINATION SEATTLE WA

NO.PACKAGES	HM	KIND OF PKG.- DESCRIPTION OF ARTICLES, SPECIAL MARKS, AND EXCEPTIONS	WEIGHT (SUB TO CORR.)
		CHASSIS 40' FIXED 3 AXLE NSIC-703016 40' CONTAINER HIGH CUBE JORU-642048 H807 -500478 HAZ MATERIALS COMMENT IN: FULL 40CNTR IN	

This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. SIGNED X

DELIVERING CARRIER PCS BY X

DESCRIBED FREIGHT RECEIVED IN GOOD ORDER EXCEPT AS NOTED FOR CARRIER X DATE

Northland Services, Inc. Aloha Cargo Transport

Division of Northland Services, Inc.

B/L No. 500478

P. O. Box 24527 • Seattle, WA 98124
(206) 763-3000 (800) 426-3113 Fax (206) 767-5579

BILL OF LADING ORIGINAL - NOT NEGOTIABLE

BILL OF LADING INSTRUCTIONS AS GIVEN BY SHIPPER OR HIS REPRESENTATIVE

DATE	BOOKING / PRO NO.	VESSEL AND VOYAGE NO.	CONTROL NO.
4/7/08	500478	H807E Hawaii Trader	
PORT OF LOADING	**PORT OF DISCHARGE**	**DESTINATION**	**BEYOND CARRIER**
Honolulu	Seattle	Seattle	

SHIPPER	CONSIGNEE	COLLECT ☐ PREPAID ☐ OTHER Please Specify ☒
Pacific Commercial Services	Chemical Waste Management NW	
P.O. Box 235117	17629 Cedar Springs Ln	BILL TO: Please show complete address - include zip Pacific Commercial Services
Honolulu, HI 96823	Arlington, OR 97812	P.O. Box 235117
Kevin Mizuno		Honolulu, HI 96823
TELEPHONE 808-545-4599, 808-845-9773fax	TELEPHONE 206-719-4754, 866-239-6687	

CONTAINER NO.	CONTAINER TYPE	SEAL NO.	LOAD DATE	SET TEMP	PROCESSOR / SUPPLIER
JORU 642048-9	40' high	0219653	4/7/08	°F	

NO OF PIECES	KIND OF PACKAGE	HM	DESCRIPTION OF GOODS PROVIDED BY SHIPPER	NET WEIGHT	GROSS WEIGHT
22	BA	X	Soil with Pesticides, RQ Hazardous	49233	49233
			Waste Solid, n.o.s., 9, NA3077, PG III		
			(Soil with Heptachlor, Chlordane)		

In accepting this Bill of Lading the shipper agrees that the custody and carriage of the goods identified shall be subject to the terms and conditions on the reverse hereof and of Carrier's tariff or applicable contract of affreightment, which shall govern the relations, whatsoever they may be, between the carrier and the shipper, owner and/or consignee of the goods, in every contingency and whensoever occurring.

This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. If the shipment is of a hazardous nature and has been tendered in a container, it is declared that the packing of the container has been carried out in accordance with the provisions of 49 CFR 176.27 (c).

Shipper: Jeffrey Jingan Date: 4/7/08

Received $ _____ to apply to prepayment of the charges on the property described hereon.

Agent or Carrier representative: Northland Services, Inc.

Per: (The signature here acknowledges only the amount prepaid.)

Received for Carrier in good order, count, and condition unless otherwise noted hereon.

Date: 4/7/8

Received By: [illegible]

Quantity: _____

Temperature Received: _____

All terms and conditions available online at www.northlandservices.com/terms/NSI_Terms.htm

Shipper's attention is directed to Section 18 on the reverse side of this Bill of Lading. Where rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property. THE AGREED OR DECLARED VALUE OF THE PROPERTY IS HEREBY STATED BY THE SHIPPER NOT TO BE IN EXCESS OF $_____ PER _____

Standard tariff provisions limit Carrier's liability for household goods to $0.60 per lb. per item. Shipper's signature hereon acknowledges this released valuation unless a different value is declared here and additional charges are paid per Tariff NOLS-100, Rule 985. THE RELEASED VALUE OF THE PROPERTY IS NOT TO EXCEED $_____ PER LB. PER ITEM

395639

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: H I P 0 0 0 1 3 8 5 5 2
2. Page 1 of 3
3. Emergency Response Phone: 1-800-535-5053
4. Manifest Tracking Number: 001991701 JJK

5. Generator's Name and Mailing Address
FORMER NAVAL AIR STATION BARBERS POINT
850 TICONDEROGA ST,STE110, ATTN:TERENCE TENGAN
PEARL HARBOR, HI 96860-5101
Generator's Phone: 808-471-1111x320

Generator's Site Address (if different than mailing address)
BON HOMME RICHARD STREET
KAPOLEI, HI 96707-0350
HIC3557-04

6. Transporter 1 Company Name: PACIFIC COMMERCIAL SERVICES, LLC. 808-545-4599
U.S. EPA ID Number: H I R 0 0 0 0 9 7 8 2 4

7. Transporter 2 Company Name: NORTHLAND SERVICES 800-327-7739
U.S. EPA ID Number: W A D 9 8 1 7 7 3 0 0 5

8. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT OF THE NW
17629 CEDAR SPRINGS LANE
ARLINGTON, OR 97812
Facility's Phone: 541-454-2643
U.S. EPA ID Number: O R D 0 8 9 4 5 2 3 5 3

9a. HM	9b. U.S. DOT Description (Including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. RQ,HAZARDOUS WASTE SOLID, N.O.S. (SOIL WITH HEPTACHLOR, CHLORDANE,DDD,DDE,DDT,ARSENIC, METHOXYCHLOR)9, NA3077 PGIII (U036 U060 U061)	022	BA	49233	P	U036 U247 P059 D004 ~~D020~~ U061 D031
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
9b1: HWSOLID OR100456 CERCLA HAZARDOUS WASTE CY 2006 9b1: 171 B-5, 44450P, 24.73f
9b2: * ERG# 9b2: SEND COPY TO: PCS LLC
9b3: * CONTAINER #: JDRU642048-9 JOB# 9b3: P.O. BOX 235117
9b4: * SEAL #: 0219653 3557 9b4: HONOLULU, HI 96823

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: TERENCE H. TENGAN
Signature: [signature]
Month 04 Day 07 Year 08

GENERATOR

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: MICHAEL A DONATIELLO
Signature: [signature]
Month 4 Day 7 Year 08
Transporter 2 Printed/Typed Name: Tom Crescent
Signature: [signature]
Month 4 Day 7 Year 08

DESIGNATED FACILITY

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Removed waste code D020 added U061, added our LDR per Kristin Castner/LDR [illegible] 5-1-08
Manifest Reference Number:

18b. Alternate Facility (or Generator) U.S. EPA ID Number
Facility's Phone:

18c. Signature of Alternate Facility (or Generator) Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. H081 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name: Janice Strand
Signature: [signature]
Month 5 Day 1 Year 08

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

395639

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST (Continuation Sheet)

21. Generator ID Number: HIP0001385 52

22. Page: 2

23. Manifest Tracking Number: 001991701JJK

~~HIC3557-04~~

24. Generator's Name: FORMER NAVAL AIR STATION BARBERS POINT

25. Transporter 3 Company Name: WEST COAST TRUCKING — U.S. EPA ID Number: WAH000016683

26. Transporter 4 Company Name: UNION PACIFIC RAILROAD COMPANY — U.S. EPA ID Number: NED001792910

27a. HM	27b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	28. Containers No.	28. Containers Type	29. Total Quantity	30. Unit Wt./Vol.	31. Waste Codes		

32. Special Handling Instructions and Additional Information

GENERATOR

33. Transporter 3 Acknowledgment of Receipt of Materials

Printed/Typed Name: ANATOLY — Signature: [illegible] — Month/Day/Year: 04/25/08

34. Transporter 4 Acknowledgment of Receipt of Materials

Printed/Typed Name: [illegible] — Signature: [illegible] — Month/Day/Year: 4/25/

TRANSPORTER

35. Discrepancy

36. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

DESIGNATED FACILITY

EPA Form 8700-22A (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

395639

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST (Continuation Sheet)	21. Generator ID Number	22. Page	23. Manifest Tracking Number
	HIP 000138552	3 of 3	001991701 JJK

24. Generator's Name

Former Naval Air Station Barbers Point

25. Transporter 5 Company Name Columbia Ridge Landfill — U.S. EPA ID Number ORD 987173457

26. Transporter _____ Company Name — U.S. EPA ID Number

27a. HM	27b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	28. Containers No.	28. Containers Type	29. Total Quantity	30. Unit Wt./Vol.	31. Waste Codes		

32. Special Handling Instructions and Additional Information

GENERATOR

33. Transporter 5 Acknowledgment of Receipt of Materials

Printed/Typed Name: Angela Timmerman — Signature: Angela Timmerman — Month 5 Day 07 Year 03

34. Transporter _____ Acknowledgment of Receipt of Materials

Printed/Typed Name — Signature — Month — Day — Year

TRANSPORTER

35. Discrepancy

36. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

DESIGNATED FACILITY

EPA Form 8700-22A (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

ALOHA CARGO TRANSPORT - PIER IN-GATE RECEIPT

PIER 2
HONOLULU, HI 96813

PHONE (808) 536-7033
FAX (808) 531-3004
SEATTLE TOLL FREE (800) 327-7739

DATE 04/08/2008

BOOKING NO.

DRIVER COLLECT COD CHARGES ☐ YES ☐ NO

SHIPPER
PACIFIC COMMERCIAL SERVICES
P.O. BOX 235117

HONOLULU, HI 96823

CONSIGNEE
CHEMICAL WASTE MANAGEMENT NW
17629 CEDAR SPRINGS LN

ARLINGTON, OR 97812

SPECIAL INSTRUCTIONS

AMOUNT

ORIGIN HONOLULU HI

DESTINATION SEATTLE WA

NO.PACKAGES	HM	KIND OF PKG.- DESCRIPTION OF ARTICLES, SPECIAL MARKS, AND EXCEPTIONS	WEIGHT (SUB TO CORR.)
		CHASSIS 40' FIXED 3 AXLE NSIC-703055 40' CONTAINER HIGH CUBE NSIU-404285 H807 -500478 HAZ MAT #9 COMMENT IN:	

This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation SIGNED X

DELIVERING CARRIER PCS BY X

DESCRIBED FREIGHT RECEIVED IN GOOD ORDER EXCEPT AS NOTED FOR CARRIER X DATE

DRAYMAN

Northland Services, Inc. Aloha Cargo Transport

Division of Northland Services, Inc.

B/L No. 500478

P. O. Box 24527 • Seattle, WA 98124
(206) 763-3000 (800) 426-3113 Fax (206) 767-5579

BILL OF LADING ORIGINAL - NOT NEGOTIABLE

BILL OF LADING INSTRUCTIONS AS GIVEN BY SHIPPER OR HIS REPRESENTATIVE

DATE	BOOKING / PRO NO.	VESSEL AND VOYAGE NO.	CONTROL NO.
4/7/08	500478	H807E Hawaii Trader	
PORT OF LOADING	**PORT OF DISCHARGE**	**DESTINATION**	**BEYOND CARRIER**
Honolulu	Seattle	Seattle	

SHIPPER	CONSIGNEE	COLLECT PREPAID OTHER Please Specify ☐ ☐ ☒
Pacific Commercial Services	Chemical Waste Management NW	
P.O. Box 235117	17629 Cedar Springs Ln	BILL TO: Please show complete address - include zip Pacific Commercial Services
Honolulu, HI 96823	Arlington, OR 97812	P.O. Box 235117
Kevin Mizuno		Honolulu, HI 96823
TELEPHONE	TELEPHONE	
808-545-4599, 808-845-9773fax	206-719-4754, 866-239-6687	

CONTAINER NO.	CONTAINER TYPE	SEAL NO.	LOAD DATE	SET TEMP	PROCESSOR / SUPPLIER
NSIU 404285-2	40' high	0219656	4/7/08	°F	

NO OF PIECES	KIND OF PACKAGE	HM	DESCRIPTION OF GOODS PROVIDED BY SHIPPER	NET WEIGHT	GROSS WEIGHT
22	BA	X	Soil with Pesticides, RQ Hazardous	48110	48110
			Waste Solid, n.o.s., 9, NA3077, PG III		
			(Soil with Heptachlor, Chlordane)		

In accepting this Bill of Lading the shipper agrees that the custody and carriage of the goods identified shall be subject to the terms and conditions on the reverse hereof and of Carrier's tariff or applicable contract of affreightment, which shall govern the relations, whatsoever they may be, between the carrier and the shipper, owner and/or consignee of the goods, in every contingency and whensoever occurring.

This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. If the shipment is of a hazardous nature and has been tendered in a container, it is declared that the packing of the container has been carried out in accordance with the provisions of 49 CFR 176.27 (c).

Shipper: [signature] Date: 4/7/08

Received $ _____ to apply to prepayment of the charges on the property described hereon.

Agent or Carrier representative: Northland Services, Inc.

Per: _____ (The signature here acknowledges only the amount prepaid.)

Received for Carrier in good order, count, and condition unless otherwise noted hereon.

Date: 4/8/8

Received By: [signature]

Quantity: _____

Temperature Received: _____

All terms and conditions available online at www.northlandservices.com/terms/NSI_Terms.htm

Shipper's attention is directed to Section 18 on the reverse side of this Bill of Lading. Where rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property. THE AGREED OR DECLARED VALUE OF THE PROPERTY IS HEREBY STATED BY THE SHIPPER NOT TO BE IN EXCESS OF $_____ PER _____

Shipper: _____ Date: _____

Standard tariff provisions limit Carrier's liability for household goods to $0.60 per lb. per item. Shipper's signature hereon acknowledges this released valuation unless a different value is declared here and additional charges are paid per Tariff NOLS-100, Rule 985. THE RELEASED VALUE OF THE PROPERTY IS NOT TO EXCEED $_____ PER LB. PER ITEM

Shipper: _____ Date: _____

395607

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: HIP000138552
2. Page 1 of 3 ~~2~~
3. Emergency Response Phone: 1-800-535-5053
4. Manifest Tracking Number: 001991702 JJK

5. Generator's Name and Mailing Address
FORMER NAVAL AIR STATION BARBERS POINT
850 TICONDEROGA ST,STE110, ATTN:TERENCE TENGAN
PEARL HARBOR, HI 96860-5101
Generator's Phone: 808-471-1111x320

Generator's Site Address (if different than mailing address)
BON HOMME RICHARD STREET
KAPOLEI, HI 96707-0350
HIC3557-05

6. Transporter 1 Company Name: PACIFIC COMMERCIAL SERVICES, LLC. 808-545-4599 — U.S. EPA ID Number: HIR000097824

7. Transporter 2 Company Name: NORTHLAND SERVICES 800-327-7739 — U.S. EPA ID Number: WAD981773005

8. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT OF THE NW
17629 CEDAR SPRINGS LANE
ARLINGTON, OR 97812
Facility's Phone: 541-454-2643
U.S. EPA ID Number: ORD089452353

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. RQ,HAZARDOUS WASTE SOLID, N.O.S. (SOIL WITH HEPTACHLOR, CHLORDANE,DDD,DDE,DDT,ARSENIC, METHOXYCHLOR)9, NA3077 PGIII (U036 U060 U061)	022	BA	48110	P	U036 U247 P059 ~~D004 D020~~ U061 D031 Sm 4-30-08.
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
9b1: HWSOLID CERCLA HAZARDOUS WASTE CY 2006 9b1: 171 B-5,40550P,24.285
9b2: * ~~OR100456~~ OR100456 ERG# 9b2: SEND COPY TO: PCS LLC
9b3: * CONTAINER #: NSIU 404285-2 JOB# 9b3: P.O. BOX 235117
9b4: * Sm 4-30-08 SEAL #: 0219656 3557 9b4: HONOLULU, HI 96823

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: TERENCE H. TENGAN — Signature: [signature] — Month 04 Day 07 Year 08

INT'L
16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER
17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: MICHAEL A. DONATIELLO — Signature: [signature] — Month 4 Day 7 Year 08
Transporter 2 Printed/Typed Name: Marlene Tan — Signature: Marlene Tan — Month 4 Day 8 Year 08

DESIGNATED FACILITY
18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Waste code D020 removed, U061 added per Kristin Castner/WHI Sm 4-30-08
Manifest Reference Number:
18b. Alternate Facility (or Generator) U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator) Month Day Year
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. H081 2. 3. 4.
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name: Janice Strand — Signature: [signature] — Month 4 Day 30 Year 08

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete. DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

BMS

395607

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST (Continuation Sheet)

21. Generator ID Number: HIP000138552

22. Page: 2

23. Manifest Tracking Number: 001991702JJK

HIC3557-05

24. Generator's Name: FORMER NAVAL AIR STATION BARBERS POINT

25. Transporter 3 Company Name: WEST COAST TRUCKING — U.S. EPA ID Number: WAH000016683

26. Transporter 4 Company Name: UNION PACIFIC RAILROAD COMPANY — U.S. EPA ID Number: NED001792910

GENERATOR

27a. HM	27b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	28. Containers No.	28. Containers Type	29. Total Quantity	30. Unit Wt./Vol.	31. Waste Codes		

32. Special Handling Instructions and Additional Information

TRANSPORTER

33. Transporter 3 Acknowledgment of Receipt of Materials

Printed/Typed Name: ANA. TOLLY — Signature: [signature] — Month Day Year: 04 25 08

34. Transporter 4 Acknowledgment of Receipt of Materials

Printed/Typed Name: [illegible] — Signature: [signature] — Month Day Year: 4 25 [illegible]

DESIGNATED FACILITY

35. Discrepancy

36. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

EPA Form 8700-22A (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

395607

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST (Continuation Sheet)

21. Generator ID Number: HIP 000138552

22. Page: 3 of 3

23. Manifest Tracking Number: 001991702 JJK

24. Generator's Name: Former Naval Air Station Barbers Point

25. Transporter 5 Company Name: Columbia Ridge Landfill — U.S. EPA ID Number: ORD 987173457

26. Transporter _____ Company Name — U.S. EPA ID Number:

27a. HM	27b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	28. Containers No.	28. Containers Type	29. Total Quantity	30. Unit Wt./Vol.	31. Waste Codes		

32. Special Handling Instructions and Additional Information

GENERATOR

33. Transporter 5 Acknowledgment of Receipt of Materials

Printed/Typed Name: Angela Timmerman — Signature: Angela Timmerman — Month 4 Day 29 Year 08

34. Transporter _____ Acknowledgment of Receipt of Materials

Printed/Typed Name — Signature — Month — Day — Year

TRANSPORTER

35. Discrepancy

36. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

DESIGNATED FACILITY

EPA Form 8700-22A (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

CHEMICAL WASTE MANAGEMENT OF THE NORTHWEST
A WASTE MANAGEMENT COMPANY

17629 Cedar Springs Lane
Arlington, OR 97812
(541) 454-2643

February 29, 2008

FORMER NAVAL AIR STATION
BON HOMME RICHARD ST
KAPOLEI, HI 96707

RE: Approval Letter

ATTENTION: Jingbo Chang

We are pleased to confirm Waste Management's approval of your waste material as described in the attached profile. Waste Management prepared a profile for the waste material based upon the information provided by you. It is important that no changes be made to the profile without Waste Management's consent. If the profile meets with your approval, then you are ready to schedule shipment of your waste.

Profile Number: OR100457
Approved Management Facility: CHEMICAL WASTE MANAGEMENT
Waste Name: PESTICIDE CONTAMINATED SOIL
Disposal Method: BIOREMEMDATION-LANDFILL
Expiration Date: 02/26/09

All waste coming to Chemical Waste Management must be scheduled, twenty-four hours in advance, with Greg Marrett. If you are unable to reach Greg you can contact our Customer Service Representative, Michelle Brandt. Unscheduled loads could be delayed several hours or even rejected.

As required by 40 CFR 264.12(b), Waste Management is notifying you that this facility has the appropriate permit(s) for, and will accept, the waste you the generator is shipping.

Listed below are people you may contact in addition to your Sales Representative if you have any questions.

Greg Marrett: Scheduling & Transportation 541-454-3220
Michelle Brandt: Customer Service 541-454-3248
Mindy McClure: Approvals 541-454-3237
Jeff Bufton: Lab Manager 541-454-3251
Gary Fisher: Operational Assistance 541-454-3234

Thank you,

Mindy McClure
Chemical Waste Management

Date Printed: 03/05/08 Chemical Waste Management, Inc. Profile #

GENERATOR'S WASTE PROFILE SHEET

ARL OR100457

(_) Check here if this is a Recertification LOCATION OF ORIGINAL CWM OF THE NORTHWEST-ARLINGTON

A/B WASTE GENERATOR AND CUSTOMER INFORMATION

1. Generator Name: FORMER NAVAL AIR STATION Generator USEPA ID: HIP000138552
2. Generator Address: BON HOMME RICHARD ST
   KAPOLEI HI 96707
3. Technical Contact/Phone: JINGBO CHANG 808/545-4599
4. Alternate Contact/Phone:

Billing Address: (_) Same
PACIFIC COMMERCIAL SVCS LLC
PO BOX 235117
HONOLULU HI 96823-3501
Billing Contact/Phone: JINGBO CHANG 808/545-4599

C. WASTE STREAM INFORMATION

1a Process Generating Waste: CLEANUP OF SITE CNTMD W/ PESTICIDES BY RINSING EMPTY CONTAINERS FORMERLY CONTAINING PESTICIDES
1b Waste Name: PESTICIDE CNTMD SOIL
1c Color : VARIES
1d Strong Odor:(_);describe:
1e Physical State @ 70F: Solid(X) Liquid(_) Both(_) Gas(_) 1f Single Layer (X) Multilayer (_)
1g Free liq. range: ___ to ___% Gravity: _____ to _____ Viscosity: ___ BTU/lb: _____ to _____
1h pH: Range __.0_____ or Not applicable (X)
1i Liquid Flash Point: < 73F (_) 73-99F (_) 100-139F (_) 140-199F (_) >= 200F (_) N.A. (X) Closed Cup (X) Open Cup (_)

2a Is this a USEPA hazardous waste (40 CFR Part 261)? Yes (X) No (_)
2a Identify ALL USEPA listed and characteristic waste code numbers (D,F,K,P,U): U036 U060 U061 U247
State Waste Codes:
2b Do underlying hazardous constituents (UHCs) apply (40CFR268.48)?(N)
2d Is the waste predominantly debris subject to the Alternate Debris Standards(40 CFR268.45)? (N)
2e Is the waste predominantly soil subject to the Alternate Soil Treatment Standards(40 CFR268.45)? (N)
2f Does the waste contain asbestos? (N) If yes, is waste Friable(_) Non-Friable(_) or Both(_)
2g Waste contains benzene in concentrations _ _____ ppm. NESHAP?(_)
2h Is waste remediation from a major source of Haz Air Pollutants (Site Remediation NESHAP, 40CFR 63 subpart GGGGG)?(N)
If yes, does the waste contain <500 ppmw VOHAPs at the point of determination?(_)
2i Waste contains PCBs (< >) _ _____ ppm, regulated by 40 CFR 761?(_)
Are PCBs regulated under SIRS Mega Rule (40 CFR 761,61(a)?(_)

2j CHEMICAL COMPOSITION: List ALL constituents (incl. halogenated organics) present in any concentration and forward analysis

Constituents	Range	Unit Description
SOIL	to 100	%
METHOXYCHLOR	0 to 1.09	MG/KG
CHLORDANE	0 to 0.65	MG/KG
DDD	0 to 1.90	MG/KG
DDT	0 to 23.88	MG/KG
DDE	0 to 16.34	MG/KG
TOTAL COMPOSITION (MUST EQUAL OR EXCEED 100%):	100.000000	

2k Is the waste: Pyrophoric (_) Water-Reactive (_) Shock Sensitive (_) Oxidizer (_) Carcinogen (_) Infectious (_)
Other
2l Is waste Group 1 wastewater or residual under Hazardous Organic NESHAP?(N)
2m Does the waste contain radioactive material? (N) Regulated by NRC?(_) Is radioactive waste NORM?(_)
2n Is the waste a CERCLA (40 CFR 300, Appendx B) or state mandated cleanup?(N)

3a This is a Nonwastewater.
3e Physical Appearance: SOIL
3f If waste subject to the land ban & meets treatment standards, check here: (_) & supply analytical results where applicable.
3g Tracking Number: 4998232

D. DOT Information and Shipping Volume

D1 Anticipated Annual Volume: 250 Units: TONS Shipping Frequency: ONE TIME
D2 PACKAGING: Bulk Solid (X) Bulk Liquid (_) Drum (_) Type/Size: OTHER Other SUPER SACK

GENERATOR'S CERTIFICATION

I hereby certify that all information submitted in this and all attached documents contains true and accurate descriptions of this waste. Any sample submitted is representative as defined in 40 CFR 261 - Appendix I or by using an equivalent method. All relevant information regarding known or suspected hazards in the possession of the generator has been disclosed. I authorize CWM to obtain a sample from any waste shipment for purposes of recertification.

Signature on original profile OR100457 — Signature
TERENCE H TENGAN ENVIRONMENTAL ENGINEER — Name and Title
2/12/08 — Date

Date Printed 03/05/08

Profile #
ARL OR100457

Identify ALL Characteristic and Listed USEPA hazardous waste numbers that apply (as defined by 40 CFR 261). For each waste number, identify the subcategory (as applicable, check none, or write in the description from 40 CFR 268.41, 268.42, and 268.43).

REF #	A. US EPA HAZARDOUS WASTE CODE(S)	B. SUBCATEGORY Enter the subcategory description. If not applicable, simply check none		C. APPLICABLE TREATMENT STANDARDS			D. HOW MUST THE WASTE BE MANAGED? Enter letter from below
				PERFORMANCE-BASED: Check as applicable		SPECIFIED TECHNOLOGY: If applicable enter the 40 CFR 268.42 table 1 treatment code(s)	
		DESCRIPTION	NONE	268.41(a)	268.43(a)	268.42	
1	U036		X				A
2	U060		X				A
3	U061		X				A
4	U247		X				A
5							
6							
7							
8							
9							
10							

Management under the land disposal restrictions:

A. RESTRICTED WASTE REQUIRES TREATMENT

A.1 RESTRICTED WASTE REQUIRES TREATMENT TO ALTERNATE SOIL STANDARDS

B.1 RESTRICTED WASTE TREATED TO 268.40 STANDARDS

B.3 GOOD FAITH ANALYTICAL CERTIFICATION FOR INCINERATED ORGANICS

B.4 DECHARACTERIZED WASTE REQUIRES TREATMENT FOR UHCS

B.5 RESTRICTED WASTES TREATED TO ALTERNATE SOIL STANDARD

B.6 RESTRICTED WASTES TREATED TO ALTERNATE DEBRIS STANDARD

C. RESTRICTED WASTE SUBJECT TO A VARIANCE

D. RESTRICTED WASTE CAN BE LAND DISPOSED WITHOUT FURTHER TREATMENT

E. NOT CURRENTLY SUBJECT TO LAND DISPOSAL RESTRICTIONS

Date Printed 03/05/08

Profile #
ARL OR100457

E. TRANSPORTATION INFORMATION

a. Is this a DOT Hazardous Material? Yes X No _

b. Proper Shipping Name. . . . . .: HAZARDOUS WASTE, SOLID, N.O.S.

and Additional Description if required: U036, U060, U061, U247

(METHOXYCHLOR, CHLORDANE)

c. DOT Regulations: North America Hazard Class: 9 Misc.Hazardous Mat'l I.D. NA3077 Packing Group: III
2nd Haz Cls : ____

c. CERCLA Reportable Quantity (RQ) and units (Lb, Kg): _____

e. Non-Bulk code 213 Bulk code 240

f. Special Provisions B54 IB8 IP2 T1 ___ +++ See DOT Regs for more info

g. Labels Required CLASS 9

F. SPECIAL HANDLING INFORMATION

FPT-SOIL LDR-SUBPART CC EXEMPT-BIOREMEDIATION-LANDFILL X 4

_ Material Safety Data Sheets Attached

G. OTHER INFORMATION

H. CHEMICAL WASTE MANAGEMENT CERTIFICATION

Chemical Waste Management, Inc. has all the necessary permits and licenses for the waste that has been characterized and identified by this approved profile.

Date Printed 03/05/08

Profile #
ARL OR100457

MISCELLANEOUS PROFILE FIELDS

Selling Region Lab: CWL
Master Profile No.: _____
Sales Office. . . : PDX
Location Orig. . .: ARL
Profile Expires . : 2/26/09
Approved. . . . . : 2/26/08
Signed Profile Present: Y Change Pending: _ Waste Status: A
Site (DCS) Status: 1 WASTE APPROVED
Prof. Tracking No: 4998232

Fuels Approval.: _
Pumpable Liquid Exact: ___ % OR Range: ___ - ___ %
Type of Pump. .: _____
Additional Anticipated Vol: _____ Per: _ Unit Code/Des: ___ _____

Handling Codes: __ _____ __ _____
__ _____ __ _____
__ _____ __ _____

EPA Data: Status Code: C Tax Code. .: 1
Permit No: _____ Expr. Date.: _____ Volume. . .: _____
Certificate of Destruction or Disposal Required ? _ Project # : _____
DOT Properties: Inhalation: _ Dermal: _ Oral: _ Flammable: _ Health: _

Percent Taxable: _____ No. of Labels. . .: __
Tranship Dest .: ___ Download Generator: 1465962
Material Class.: _ DCS Generator #...: 4501465962
Treatment Codes: S06 T21 D80 ___ ___ ___
Process Codes .: BIO ___ ___ ___ ___ ___ ___ ___ ___ ___
Schedule Category : BIO
Schedule Interval : _____
Listed Solvent Waste: _ Hal. Org. Compounds.: _ RCRA Reactive. . . .: _
Etiologic. . . . . .: _ Water Reactive . . .: _ Pesticide Mfg. Waste: _
Ignition Screen : ___ Gas Evolution : ___ Wet Zone . . . . . .: _
Self-heating cube sz ___ Vapor Concentration _____ Boiling Point F ___
Is Gas Ignitable? _ Corrosive to Steel or Aluminum _ Organic Peroxide _
Chemical Family Name _____

GENERATOR FROM PAGE 1

Business Name	USEPA ID	Rltn	Contract in Place	at	Expires on	Evergreen Contract
FORMER NAVAL AIR STATION	HIP000138552	G	_	___	_____	_

ADDITIONAL BUSINESSES

Business Name	USEPA ID	Rltn	Contract in Place	at	Expires on	Evergreen Contract
PACIFIC COMMERCIAL SVCS LLC	HIR000097824	I	Y	ARL	_____	Y

ADDITIONAL PROFILE COMMENTS

Cat	Comment	Cat	Comment

SUPPLEMENTAL FIELDS

Field	Value
DESWO	G39
MGTCD	H132
FRMCD	W301

Date Printed 3/05/08

Profile Change History

Profile #
ARL OR100457

This section lists comments describing changes made to the profile.

Profile Change Comments	Date	User
CWL/OR1004 Entire profile copied to 57A/RLOR10	2/26/08	WM0225MLM
CWL/OR1004 Core Profile Info copied to 57A/RLOR10	2/26/08	WM0225MLM
ENTRY COMPLETE FOR APPROVAL	2/26/08	WM0225MLM
CWL/OR1004 Change Log copied to 57A/RLOR10	2/26/08	WM0225MLM
CWL/OR1004 Entire profile copied to 57A/RLOR10	2/26/08	WM0225MLM

ALOHA CARGO TRANSPORT - PIER IN-GATE RECEIPT

PIER 2
HONOLULU, HI 96813

PHONE (808) 536-7033
FAX (808) 531-3004
SEATTLE TOLL FREE (800) 327-7739

DATE 04/08/2008

SHIPPER
PACIFIC COMMERCIAL SERVICES
P.O. BOX 235117

HONOLULU, HI 96823

CONSIGNEE
CHEMICAL WASTE MANAGEMENT NW
17629 CEDAR SPRINGS LN

ARLINGTON, OR 97812

BOOKING NO.

DRIVER COLLECT COD CHARGES
☐ YES ☐ NO

SPECIAL INSTRUCTIONS

AMOUNT

ORIGIN HONOLULU HI

DESTINATION SEATTLE WA

NO.PACKAGES	HM	KIND OF PKG.- DESCRIPTION OF ARTICLES, SPECIAL MARKS, AND EXCEPTIONS	WEIGHT (SUB TO CORR.)
		CHASSIS 40' FIXED 3 AXLE NSIC-703022 40' CONTAINER HIGH CUBE NSIU-405094 H807 -500478 HAZ MAT SE253 COMMENT IN:	

This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. SIGNED X

DELIVERING CARRIER PCS BY X

DESCRIBED FREIGHT RECEIVED IN GOOD ORDER EXCEPT AS NOTED FOR CARRIER X DATE

DRAYMAN

Northland Services, Inc. Aloha Cargo Transport

Division of Northland Services, Inc.

B/L No. 500478

P. O. Box 24527 • Seattle, WA 98124
(206) 763-3000 (800) 426-3113 Fax (206) 767-5579

BILL OF LADING ORIGINAL - NOT NEGOTIABLE

BILL OF LADING INSTRUCTIONS AS GIVEN BY SHIPPER OR HIS REPRESENTATIVE

4/8/08	BOOKING / PRO NO. 500478	VESSEL AND VOYAGE NO. H807E Hawaii Trader	CONTROL NO.
F LOADING lu	PORT OF DISCHARGE Seattle	DESTINATION Seattle	BEYOND CARRIER

R Commercial Services	CONSIGNEE Chemical Waste Management NW	COLLECT ☐ PREPAID ☐ OTHER ☒ Please Specify
ox 235117	17629 Cedar Springs Ln	BILL TO: Please show complete address - include zip Pacific Commercial Services
lu, HI 96823	Arlington, OR 97812	P.O. Box 235117
Mizuno		Honolulu, HI 96823
IONE 5-4599, 808-845-9773fax	TELEPHONE 206-719-4754, 866-239-6687	

NER NO.	CONTAINER TYPE	SEAL NO.	LOAD DATE	SET TEMP	PROCESSOR / SUPPLIER
1 405094-5	40' high	0219613	4/8/08	°F	

	KIND OF PACKAGE	HM	DESCRIPTION OF GOODS PROVIDED BY SHIPPER	NET WEIGHT	GROSS WEIGHT
20	BA	X	Soil with Pesticides, RQ Hazardous	45424	45424
			Waste Solid, n.o.s., 9, NA3077, PG III		
			(Soil with Heptachlor, Chlordane)		
				SE	
				253	

ng this Bill of Lading the shipper agrees that the custody and carriage of the goods shall be subject to the terms and conditions on the reverse hereof and of Carrier's tariff or contract of affreightment, which shall govern the relations, whatsoever they may be, he carrier and the shipper, owner and/or consignee of the goods, in every contingency soever occurring.

Received for Carrier in good order, count, and condition unless otherwise noted hereon.

Date: 4/8/08

Received By: [signature]

Quantity:

Temperature Received:

certify that the above named materials are properly classified, described, packaged, nd labeled, and are in proper condition for transportation according to the applicable s of the Department of Transportation. If the shipment is of a hazardous nature and has lered in a container, it is declared that the packing of the container has been carried out ance with the provisions of 49 CFR 176.27 (c).

[signature] Date: 4/8/08

$ _____ to apply to prepayment of the charges on the property described hereon.

arrier representative: Northland Services, Inc.

(The signature here acknowledges only the amount prepaid.)

All terms and conditions available online at www.northlandservices.com/terms/NSI_Terms.htm

ntion is directed to Section 18 on the reverse side of this Bill of Lading. Where rate is dependent pers are required to state specifically in writing the agreed or declared value of the property. D OR DECLARED VALUE OF THE PROPERTY IS HEREBY STATED BY THE SHIPPER NOT CESS OF

$_____ PER _____

_____ Date: _____

Standard tariff provisions limit Carrier's liability for household goods to $0.60 per lb. per item. Shipper's signature hereon acknowledges this released valuation unless a different value is declared here and additional charges are paid per Tariff NOLS-100, Rule 985.
THE RELEASED VALUE OF THE PROPERTY IS NOT TO EXCEED $_____ PER LB. PER ITEM

Shipper: _____ Date: _____

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) 395646

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: H I P 0 0 0 1 3 8 5 5 2
2. Page 1 of 3 ~~2~~
3. Emergency Response Phone: 1-800-535-5053
4. Manifest Tracking Number: 001991691 JJK

GENERATOR

5. Generator's Name and Mailing Address
FORMER NAVAL AIR STATION BARBERS POINT
850 TICONDEROGA ST, STE110, ATTN:TERENCE TENGAN
PEARL HARBOR, HI 96860-5101
Generator's Phone: 808-471-1111x320

Generator's Site Address (if different than mailing address)
BON HOMME RICHARD STREET
KAPOLEI, HI 96707-0350
HIC3557-07

6. Transporter 1 Company Name: PACIFIC COMMERCIAL SERVICES, LLC. 808-545-4599
U.S. EPA ID Number: H I R 0 0 0 0 9 7 8 2 4

7. Transporter 2 Company Name: NORTHLAND SERVICES 800-327-7739
U.S. EPA ID Number: W A D 9 8 1 7 7 3 0 0 5

8. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT OF THE NW
17629 CEDAR SPRINGS LANE
ARLINGTON, OR 97812
Facility's Phone: 541-454-2643
U.S. EPA ID Number: O R D 0 8 9 4 5 2 3 5 3

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. HAZARDOUS WASTE SOLID, N.O.S. (SOIL WITH METHOXYCHLOR, CHLORDANE, DDD, DDE, DDT), 9, NA3077 PGIII	020	BA	45424	P	U060 U061 ~~D020~~ U036 U247
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
9b1: HWSOLID OR100457 CY 2006 9b1: 171 B-5, 45550P, 22.787 SEND COPY TO:
9b2: * CERCLA HAZARDOUS WASTE ERG# 9b2: PCS LLC
9b3: * CONTAINER #: NSIU 405094-5 JOB# 9b3: P.O. BOX 235117
9b4: * SEAL #: 021 9613 3557 9b4: HONOLULU, HI 96823

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: TERENCE H. TENGAN
Signature: [signature]
Month 04 Day 08 Year 08

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: JAVIER MAGANA
Signature: [signature]
Month 04 Day 08 Year 08
Transporter 2 Printed/Typed Name: Larry Gro Harlene Jr
Signature: [signature] Harlene Jr
Month 4 Day 8 Year 08

DESIGNATED FACILITY

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Waste code D020 removed, soil LDR added per Kristen Castner/WM JM 5-1-08
Manifest Reference Number:

18b. Alternate Facility (or Generator) U.S. EPA ID Number
Facility's Phone:

18c. Signature of Alternate Facility (or Generator) Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. H081 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name: James Strand
Signature: [signature]
Month 5 Day 1 Year 08

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

BMS

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) 395646

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST (Continuation Sheet)

21. Generator ID Number: HIP000138552

22. Page: 2

23. Manifest Tracking Number: 001991691JJK

24. Generator's Name: FORMER NAVAL AIR STATION BARBERS POINT

HIC3557-07

25. Transporter 3 Company Name: WEST COAST TRUCKING — U.S. EPA ID Number: WAH000016683

26. Transporter 4 Company Name: UNION PACIFIC RAILROAD COMPANY — U.S. EPA ID Number: NED001792910

27a. HM	27b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	28. Containers No.	28. Containers Type	29. Total Quantity	30. Unit Wt./Vol.	31. Waste Codes		

32. Special Handling Instructions and Additional Information

GENERATOR

33. Transporter 3 Acknowledgment of Receipt of Materials

Printed/Typed Name: Klees TARAS — Signature: [signature] — Month 4 Day 25 Year 08

34. Transporter 4 Acknowledgment of Receipt of Materials

Printed/Typed Name: John Caronica — Signature: [signature] — Month 4 Day 25 Year 08

TRANSPORTER

35. Discrepancy

36. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

DESIGNATED FACILITY

EPA Form 8700-22A (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) 395646

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST (Continuation Sheet)	21. Generator ID Number	22. Page	23. Manifest Tracking Number
	HIP 000138552	3 of 3	001991691 JJK

24. Generator's Name

Former Naval Air Station Barbers Point

25. Transporter 5 Company Name Columbia Ridge Landfill — U.S. EPA ID Number ORD 987173457

26. Transporter _____ Company Name — U.S. EPA ID Number

27a. HM	27b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	28. Containers No.	28. Containers Type	29. Total Quantity	30. Unit Wt./Vol.	31. Waste Codes		

32. Special Handling Instructions and Additional Information

GENERATOR

33. Transporter 5 Acknowledgment of Receipt of Materials

Printed/Typed Name: Angela Timmerman — Signature: Angela Timmerman — Month 5 Day 01 Year 03

34. Transporter _____ Acknowledgment of Receipt of Materials

Printed/Typed Name — Signature — Month — Day — Year

TRANSPORTER

35. Discrepancy

36. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

DESIGNATED FACILITY

EPA Form 8700-22A (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

ALOHA CARGO TRANSPORT - PIER IN-GATE RECEIPT

PIER 2
HONOLULU, HI 96813

PHONE (808) 536-7033
FAX (808) 531-3004
SEATTLE TOLL FREE (800) 327-7739

DATE 04/08/2008

SHIPPER
PACIFIC COMMERCIAL SERVICES
P.O. BOX 235117

HONOLULU, HI 96823

CONSIGNEE
CHEMICAL WASTE MANAGEMENT NW
17629 CEDAR SPRINGS LN

ARLINGTON, OR 97812

BOOKING NO.

DRIVER COLLECT COD CHARGES
☐ YES ☐ NO

SPECIAL INSTRUCTIONS

AMOUNT

ORIGIN HONOLULU HI

DESTINATION SEATTLE WA

NO PACKAGES	HM	KIND OF PKG.- DESCRIPTION OF ARTICLES, SPECIAL MARKS, AND EXCEPTIONS	WEIGHT (SUB TO CORR.)
		CHASSIS 40' FIXED 3 AXLE NSIC-703055 40' CONTAINER HIGH CUBE JORU-642026 H807 -500478 COMMENT IN:	

This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation SIGNED X

DELIVERING CARRIER PCS BY X

DESCRIBED FREIGHT RECEIVED IN GOOD ORDER EXCEPT AS NOTED FOR CARRIER X DATE

Northland Services, Inc. Aloha Cargo Transport

Division of Northland Services, Inc.

B/L No. 500478

P. O. Box 24527 • Seattle, WA 98124
(206) 763-3000 (800) 426-3113 Fax (206) 767-5579

BILL OF LADING ORIGINAL - NOT NEGOTIABLE

BILL OF LADING INSTRUCTIONS AS GIVEN BY SHIPPER OR HIS REPRESENTATIVE

DATE	BOOKING / PRO NO.	VESSEL AND VOYAGE NO.	CONTROL NO.
4/8/08	500478	H807E Hawaii Trader	
PORT OF LOADING	**PORT OF DISCHARGE**	**DESTINATION**	**BEYOND CARRIER**
Honolulu	Seattle	Seattle	

SHIPPER	CONSIGNEE	COLLECT ☐ PREPAID ☐ OTHER ☒ Please Specify
Pacific Commercial Services	Chemical Waste Management NW	
P.O. Box 235117	17629 Cedar Springs Ln	BILL TO: Please show complete address - include zi Pacific Commercial Services
Honolulu, HI 96823	Arlington, OR 97812	P.O. Box 235117
Kevin Mizuno		Honolulu, HI 96823
TELEPHONE	TELEPHONE	
808-545-4599, 808-845-9773fax	206-719-4754, 866-239-6687	

CONTAINER NO.	CONTAINER TYPE	SEAL NO.	LOAD DATE	SET TEMP	PROCESSOR / SUPPLIER
FORU 642026-2	40' high	0219631	4/8/08	°F	

NO OF PIECES	KIND OF PACKAGE	HM	DESCRIPTION OF GOODS PROVIDED BY SHIPPER	NET WEIGHT	GROSS WEIGHT
20	BA	X	Soil with Pesticides, RQ Hazardous	46151	46151
			Waste Solid, n.o.s., 9, NA3077, PG III		
			(Soil with Heptachlor, Chlordane)		

SE 25

In accepting this Bill of Lading the shipper agrees that the custody and carriage of the goods identified shall be subject to the terms and conditions on the reverse hereof and of Carrier's tariff or applicable contract of affreightment, which shall govern the relations, whatsoever they may be, between the carrier and the shipper, owner and/or consignee of the goods, in every contingency and whensoever occurring.

This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. If the shipment is of a hazardous nature and has been tendered in a container, it is declared that the packing of the container has been carried out in accordance with the provisions of 49 CFR 176.27 (c).

Shipper: Julian Ingram Date: 4/8/08

Received $ _____ to apply to prepayment of the charges on the property described hereon.

Agent or Carrier representative: Northland Services, Inc.

Per: (The signature here acknowledges only the amount prepaid.)

Received for Carrier in good order, count, and condition unless otherwise noted hereon.

Date: 4/08/08

Received By: [signature]

Quantity: _____

Temperature Received: _____

All terms and conditions available online at www.northlandservices.com/terms/NSI_Terms.ht

Shipper's attention is directed to Section 18 on the reverse side of this Bill of Lading. Where rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property. THE AGREED OR DECLARED VALUE OF THE PROPERTY IS HEREBY STATED BY THE SHIPPER NOT TO BE IN EXCESS OF $_____ PER _____

Standard tariff provisions limit Carrier's liability for household goods to $0.60 per lb. per item. Shipp signature hereon acknowledges this released valuation unless a different value is declared here anc additional charges are paid per Tariff NOLS-100, Rule 985. THE RELEASED VALUE OF THE PROPERTY IS NOT TO EXCEED $_____ PER PER ITEM

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) 395644

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: HIP000138552
2. Page 1 of 3 ~~2~~
3. Emergency Response Phone: 1-800-535-5053
4. Manifest Tracking Number: 001991692 JJK

5. Generator's Name and Mailing Address
FORMER NAVAL AIR STATION BARBERS POINT
850 TICONDEROGA ST, STE110, ATTN:TERENCE TENGAN
PEARL HARBOR, HI 96860-5101
Generator's Phone: 808-471-1111x320

Generator's Site Address (if different than mailing address)
BON HOMME RICHARD STREET
KAPOLEI, HI 96707-0350
HIC3557-08

6. Transporter 1 Company Name: PACIFIC COMMERCIAL SERVICES, LLC. 808-545-4599
U.S. EPA ID Number: HIR000097824

7. Transporter 2 Company Name: NORTHLAND SERVICES 800-327-7739
U.S. EPA ID Number: WAD981773005

8. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT OF THE NW
17629 CEDAR SPRINGS LANE
ARLINGTON, OR 97812
Facility's Phone: 541-454-2643
U.S. EPA ID Number: ORD089452353

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. HAZARDOUS WASTE SOLID, N.O.S. (SOIL WITH METHOXYCHLOR, CHLORDANE, DDD, DDE, DDT), 9, NA3077 PGIII	020	BA	46151	P	U060 U061 ~~D020~~ U036 U247
	2.					
	3.					
	4.					

Am 5-1-08

14. Special Handling Instructions and Additional Information
9b1: HWSOLID OR10045 CY 2006 9b1: 171 8-5, 4440P, 23,20T
9b2: * CERCLA HAZARDOUS WASTE ERG# 9b2: SEND COPY TO: PCS LLC
9b3: * CONTAINER #: JORU 642026-2 JOB# 9b3: P.O. BOX 235117
9b4: * SEAL #: 0219631 3557 9b4: HONOLULU, HI 96823

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable International and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: TERENCE H. TENGAN Signature: Terence H. Tengan Month 04 Day 08 Year 08

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Dustin Dias Signature: Dustin Dias Month 4 Day 8 Year 08
Transporter 2 Printed/Typed Name: Marlene Tom Signature: Marlene Tom Month 4 Day 8 Year 08

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Removed waste code D020, added soil LDR per Kristin Castner/WM Am 5-1-08.
Manifest Reference Number:

18b. Alternate Facility (or Generator) U.S. EPA ID Number
Facility's Phone:

18c. Signature of Alternate Facility (or Generator) Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. H081 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name: Janice Strand Signature: Janice Strand Month 5 Day 01 Year 08

GENERATOR | INT'L | TRANSPORTER | DESIGNATED FACILITY

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

BMS

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) 395644

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST (Continuation Sheet)

21. Generator ID Number: H I P 0 0 0 1 3 8 5 5 2

22. Page: 2

23. Manifest Tracking Number: 001991692JJK

HIC3557-08

24. Generator's Name: FORMER NAVAL AIR STATION BARBERS POINT

25. Transporter 3 Company Name: WEST COAST TRUCKING — U.S. EPA ID Number: W A H 0 0 0 0 1 6 6 8 3

26. Transporter 4 Company Name: UNION PACIFIC RAILROAD COMPANY — U.S. EPA ID Number: N E D 0 0 1 7 9 2 9 1 0

GENERATOR

27a. HM	27b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	28. Containers No.	28. Containers Type	29. Total Quantity	30. Unit Wt./Vol.	31. Waste Codes		

32. Special Handling Instructions and Additional Information

TRANSPORTER

33. Transporter 3 Acknowledgment of Receipt of Materials

Printed/Typed Name: Klets Taars — Signature: [signature] — Month 4 Day 25 Year 01

34. Transporter 4 Acknowledgment of Receipt of Materials

Printed/Typed Name: L Sotto — Signature: [signature] — Month 4 Day 25 Year 1

DESIGNATED FACILITY

35. Discrepancy

36. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

EPA Form 8700-22A (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) 395644

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST (Continuation Sheet)

21. Generator ID Number: HIP000138552

22. Page: 3 of 3

23. Manifest Tracking Number: 001991692 JJK

24. Generator's Name: Former Naval Air Station Barbers Point

25. Transporter 5 Company Name: Columbia Ridge Landfill — U.S. EPA ID Number: ORD 987173457

26. Transporter _____ Company Name — U.S. EPA ID Number:

27a. HM	27b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	28. Containers No.	28. Containers Type	29. Total Quantity	30. Unit Wt./Vol.	31. Waste Codes		

32. Special Handling Instructions and Additional Information

33. Transporter 5 Acknowledgment of Receipt of Materials

Printed/Typed Name: Angela Timmerman — Signature: Angela Timmerman — Month 5 Day 10 Year 08

34. Transporter _____ Acknowledgment of Receipt of Materials

Printed/Typed Name — Signature — Month — Day — Year

35. Discrepancy

36. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

GENERATOR

TRANSPORTER

DESIGNATED FACILITY

EPA Form 8700-22A (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

ALOHA CARGO TRANSPORT - PIER IN-GATE RECEIPT

PIER 2
HONOLULU, HI 96813

PHONE (808) 536-7033
FAX (808) 531-3004
SEATTLE TOLL FREE (800) 327-7739

DATE 04/08/2008

S
PACIFIC COMMERCIAL SERVICES
P.O. BOX 235117

HONOLULU, HI 96823

CONSIGNEE
CHEMICAL WASTE MANAGEMENT NW
17629 CEDAR SPRINGS LN

ARLINGTON, OR 97812

BOOKING NO.

DRIVER COLLECT COD CHARGES
☐ YES ☐ NO

SPECIAL INSTRUCTIONS

AMOUNT

ORIGIN HONOLULU HI

DESTINATION SEATTLE WA

NO PACKAGES	HM	KIND OF PKG.- DESCRIPTION OF ARTICLES, SPECIAL MARKS, AND EXCEPTIONS	WEIGHT (SUB TO CORR.)
		CHASSIS 40' FIXED 3 AXLE NSIC-703088 40' CONTAINER HIGH CUBE NSIU-404757 H807 -500478 HAZ MAT SE250 COMMENT IN:	

This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. SIGNED X

DELIVERING CARRIER PCS BY X

DESCRIBED FREIGHT RECEIVED IN GOOD ORDER EXCEPT AS NOTED FOR CARRIER X DATE

ORIGINAL

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) 395645 Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: HIP000138552
2. Page 1 of 3 ~~2~~
3. Emergency Response Phone: 1-800-535-5053
4. Manifest Tracking Number: 001991693 JJK

5. Generator's Name and Mailing Address: FORMER NAVAL AIR STATION BARBERS POINT, 850 TICONDEROGA ST, STE110, ATTN:TERENCE TENGAN, PEARL HARBOR, HI 96860-5101
Generator's Site Address (if different than mailing address): BON HOMME RICHARD STREET, KAPOLEI, HI 96707-0350 HIC3557-09
Generator's Phone: 808-471-1111x320

6. Transporter 1 Company Name: PACIFIC COMMERCIAL SERVICES, LLC. 808-545-4599 — U.S. EPA ID Number: HIR000097824

7. Transporter 2 Company Name: NORTHLAND SERVICES 800-327-7739 — U.S. EPA ID Number: WAD981773005

8. Designated Facility Name and Site Address: CHEMICAL WASTE MANAGEMENT OF THE NW, 17629 CEDAR SPRINGS LANE, ARLINGTON, OR 97812 — U.S. EPA ID Number: ORD089452353
Facility's Phone: 541-454-2643

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. HAZARDOUS WASTE SOLID, N.O.S. (SOIL WITH METHOXYCHLOR, CHLORDANE, DDD, DDE, DDT), 9, NA3077 PGIII	020	BA	48490	P	U060 U061 ~~D020~~ U036 U247
	2.					Jm5/08
	3.					
	4.					

14. Special Handling Instructions and Additional Information
9b1: HWSOLID OR100457 CY 2006 9b1: 171 B5, 48650P, 24,33T SEND COPY TO:
9b2: * CERCLA HAZARDOUS WASTE ERG# 9b2: PCS LLC
9b3: * CONTAINER #: NSLU 404757-7 JOB# 9b3: P.O. BOX 235117
9b4: * SEAL #: 021962 3557 9b4: HONOLULU, HI 96823

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: TERENCE H. TENGAN — Signature: Terence H. Tengan — Month 04 Day 08 Year 08

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Ray Tifalli — Signature — Month 04 Day 08 Year 08
Transporter 2 Printed/Typed Name: Marlene Tom — Signature: Marlene Tom — Month 4 Day 08 Year 08

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Removed waste code D020, added soil <LDR per Kristin Castner/WH dm 5-1-08
Manifest Reference Number:
18b. Alternate Facility (or Generator) U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator) Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. H081 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name: Janice Stand — Signature — Month 5 Day 01 Year 08

GENERATOR / INT'L / TRANSPORTER / DESIGNATED FACILITY

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete. DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

AMS

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) 395645

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST (Continuation Sheet)	21. Generator ID Number HIP000138552	22. Page 2	23. Manifest Tracking Number 001991693JJK

HIC3557-09

24. Generator's Name: FORMER NAVAL AIR STATION BARBERS POINT

25. Transporter 3 Company Name: WEST COAST TRUCKING — U.S. EPA ID Number: WAH000016683

26. Transporter 4 Company Name: UNION PACIFIC RAILROAD COMPANY — U.S. EPA ID Number: NED001792910

27a. HM	27b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	28. Containers No.	28. Containers Type	29. Total Quantity	30. Unit Wt./Vol.	31. Waste Codes		

32. Special Handling Instructions and Additional Information

GENERATOR

33. Transporter 3 Acknowledgment of Receipt of Materials

Printed/Typed Name: ANATOLIY — Signature: — Month Day Year: 04 25 08

34. Transporter 4 Acknowledgment of Receipt of Materials

Printed/Typed Name: — Signature: — Month Day Year: 4 25 8

TRANSPORTER

35. Discrepancy

36. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

DESIGNATED FACILITY

EPA Form 8700-22A (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) 395645

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST (Continuation Sheet)

21. Generator ID Number: HIP 000138552

22. Page: 3 of 3

23. Manifest Tracking Number: 001991693 JJK

24. Generator's Name: Former Naval Air Station Barbers Point

25. Transporter 5 Company Name: Columbia Ridge Landfill — U.S. EPA ID Number: ORD 987173457

26. Transporter _____ Company Name — U.S. EPA ID Number:

27a. HM	27b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	28. Containers No.	28. Containers Type	29. Total Quantity	30. Unit Wt./Vol.	31. Waste Codes		

32. Special Handling Instructions and Additional Information

GENERATOR

33. Transporter 5 Acknowledgment of Receipt of Materials

Printed/Typed Name: Angela Timmerman — Signature: Angela Timmerman — Month 5 Day 01 Year 09

34. Transporter _____ Acknowledgment of Receipt of Materials

Printed/Typed Name — Signature — Month Day Year

TRANSPORTER

35. Discrepancy

36. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

DESIGNATED FACILITY

EPA Form 8700-22A (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

ALOHA CARGO TRANSPORT - PIER IN-GATE RECEIPT

PIER 2
HONOLULU, HI 96813

PHONE (808) 536-7033
FAX (808) 531-3004
SEATTLE TOLL FREE (800) 327-7739

DATE 04/08/2008

BOOKING NO.

DRIVER COLLECT COD CHARGES ☐ YES ☐ NO

SHIPPER
PACIFIC COMMERCIAL SERVICES
P.O. BOX 235117

HONOLULU, HI 96823

CONSIGNEE
CHEMICAL WASTE MANAGEMENT NW
17629 CEDAR SPRINGS LN

ARLINGTON, OR 97812

SPECIAL INSTRUCTIONS

AMOUNT

ORIGIN HONOLULU HI

DESTINATION SEATTLE WA

NO.PACKAGES	HM	KIND OF PKG.- DESCRIPTION OF ARTICLES, SPECIAL MARKS, AND EXCEPTIONS	WEIGHT (SUB TO CORR.)
		CHASSIS 40' FIXED 3 AXLE NSIC-703016 40' CONTAINER HIGH CUBE JORU-642169 H807 -500478 COMMENT IN: HAZ MAT SE249	

his is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and re in proper condition for transportation according to the applicable regulations of the Department of Transportation. SIGNED X

'ERING CARRIER PCS BY X

ED FREIGHT RECEIVED IN
'DER EXCEPT AS NOTED FOR CARRIER X DATE

ORIGINAL

3956606

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: HIP0001385 52
2. Page 1 of 3 ~~2~~
3. Emergency Response Phone: 1-800-535-5053
4. Manifest Tracking Number: 001991694 JJK

GENERATOR

5. Generator's Name and Mailing Address
FORMER NAVAL AIR STATION BARBERS POINT
850 TICONDEROGA ST, STE110, ATTN:TERENCE TENGAN
PEARL HARBOR, HI 96860-5101
Generator's Phone: 808-471-1111x320

Generator's Site Address (if different than mailing address)
BON HOMME RICHARD STREET
KAPOLEI, HI 96707-0350
HIC3557-10

6. Transporter 1 Company Name: PACIFIC COMMERCIAL SERVICES, LLC. 808-545-4599
U.S. EPA ID Number: HIR000097824

7. Transporter 2 Company Name: NORTHLAND SERVICES 800-327-7739
U.S. EPA ID Number: WAD981773005

8. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT OF THE NW
17629 CEDAR SPRINGS LANE
ARLINGTON, OR 97812
Facility's Phone: 541-454-2643
U.S. EPA ID Number: ORD089452353

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes		
X	1. HAZARDOUS WASTE SOLID, N.O.S. (SOIL WITH METHOXYCHLOR, CHLORDANE, DDD, DDE, DDT), 9, NA3077 PGIII	20 ~~10~~ ~~020~~	BA	47812 ~~23906~~ ~~47812~~	P	~~D020~~	U036	U247
	2. ~~Hazardous Waste Solid, N.O.S. (Soil with Methoxychlor, Chlordane, DDD, DDE, DDT), 9, NA3077, PGIII~~	~~10~~	~~CF~~	~~23906~~	~~P~~	~~H060~~ ~~H061~~ ~~U247~~	~~H086~~	
	3. Sm 4-30-08							
	4.							

SE 249

14. Special Handling Instructions and Additional Information
9b1: HWSOLID OR100457 CY 2006 9b1: 171 SEND COPY TO: B-5, 47812 OF 23,906T
9b2: ~~OR100457~~ CERCLA HAZARDOUS WASTE ERG# 9b2: PCS LLC
9b3: * CONTAINER #: JOPU 642169-6 JOB# 9b3: P.O. BOX 235117
9b4: Sm 4-30-08 SEAL #: 0219655 3557 9b4: HONOLULU, HI 96823

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: TERENCE H. TENGAN
Signature: Terence H. Tengan
Month 04 Day 08 Year 08

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: JAVIER MAGANA
Signature: Javier Magana
Month 04 Day 08 Year 08
Transporter 2 Printed/Typed Name: Marlene Tom
Signature: Marlene Tom
Month 4 Day 8 Year 08

DESIGNATED FACILITY

18. Discrepancy
18a. Discrepancy Indication Space ☒ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
~~02 split added auto container type~~, waste code D030 removed per Kristin Castner/WM Sm 4-30-08
Manifest Reference Number:

18b. Alternate Facility (or Generator) U.S. EPA ID Number
Facility's Phone:

18c. Signature of Alternate Facility (or Generator) Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. H081 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name: Clance Strand
Signature:
Month 4 Day 30 Year 08

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

BMS

395e06

(Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

HAZARDOUS WASTE MANIFEST (Continuation Sheet)

21. Generator ID Number	22. Page	23. Manifest Tracking Number
H I P 0 0 0 1 3 8 5 5 2	2	001991694JJK

HIC3557-10

24. Generator's Name
FORMER NAVAL AIR STATION BARBERS POINT

25. Transporter 3 Company Name
WEST COAST TRUCKING
U.S. EPA ID Number
W A H 0 0 0 0 1 6 6 8 3

26. Transporter 4 Company Name
UNION PACIFIC RAILROAD COMPANY
U.S. EPA ID Number
N E D 0 0 1 7 9 2 9 1 0

GENERATOR

27a. HM	27b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	28. Containers No.	28. Containers Type	29. Total Quantity	30. Unit Wt./Vol.	31. Waste Codes		

32. Special Handling Instructions and Additional Information

TRANSPORTER

33. Transporter 3 Acknowledgment of Receipt of Materials
Printed/Typed Name: ANATOLY
Signature:
Month Day Year: 04 25 08

34. Transporter 4 Acknowledgment of Receipt of Materials
Printed/Typed Name: L Sathu
Signature:
Month Day Year: 4 25 8

DESIGNATED FACILITY

35. Discrepancy

36. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

EPA Form 8700-22A (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

395006

Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

HAZARDOUS WASTE MANIFEST (Continuation Sheet)

21. Generator ID Number: HIP 000138552

22. Page: 3 of 3

23. Manifest Tracking Number: 001991694 JJK

24. Generator's Name: Former Naval Air Station Barbers Point

25. Transporter 5 Company Name: Columbia Ridge Landfill — U.S. EPA ID Number: ORD987173457

26. Transporter _____ Company Name — U.S. EPA ID Number:

27a. HM	27b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	28. Containers No.	28. Containers Type	29. Total Quantity	30. Unit Wt./Vol.	31. Waste Codes		

32. Special Handling Instructions and Additional Information

GENERATOR

33. Transporter 5 Acknowledgment of Receipt of Materials

Printed/Typed Name: Angela Timmerman — Signature: Angela Timmerman — Month 4 Day 29 Year 00

34. Transporter _____ Acknowledgment of Receipt of Materials

Printed/Typed Name — Signature — Month Day Year

TRANSPORTER

35. Discrepancy

36. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

DESIGNATED FACILITY

EPA Form 8700-22A (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

ALOHA CARGO TRANSPORT - PIER IN-GATE RECEIPT

PIER 2
HONOLULU, HI 96813

PHONE (808) 536-7033
FAX (808) 531-3004
SEATTLE TOLL FREE (800) 327-7739

DATE 04/08/2008

SHIPPER
PACIFIC COMMERCIAL SERVICES
P.O. BOX 235117

HONOLULU, HI 96823

CONSIGNEE
CHEMICAL WASTE MANAGEMENT NW
17629 CEDAR SPRINGS LN

ARLINGTON, OR 97812

BOOKING NO.

DRIVER COLLECT COD CHARGES
☐ YES ☐ NO

SPECIAL INSTRUCTIONS

AMOUNT

ORIGIN HONOLULU HI

DESTINATION SEATTLE WA

NO.PACKAGES	HM	KIND OF PKG.- DESCRIPTION OF ARTICLES, SPECIAL MARKS, AND EXCEPTIONS	WEIGHT (SUB TO CORR.)
		CHASSIS 40' FIXED 3 AXLE NSIC-703016 40' CONTAINER HIGH CUBE NSIU-409032 H807 -500478 COMMENT IN:	

This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. SIGNED X

DELIVERING CARRIER PCS BY X

DESCRIBED FREIGHT RECEIVED IN GOOD ORDER EXCEPT AS NOTED FOR CARRIER X DATE

DRAYMAN

Northland Services, Inc.

Aloha Cargo Transport
Division of Northland Services, Inc.

B/L No. 500478

P. O. Box 24527 • Seattle, WA 98124
(206) 763-3000 (800) 426-3113 Fax (206) 767-5579

BILL OF LADING ORIGINAL - NOT NEGOTIABLE

BILL OF LADING INSTRUCTIONS AS GIVEN BY SHIPPER OR HIS REPRESENTATIVE

DATE	BOOKING / PRO NO.	VESSEL AND VOYAGE NO.	CONTROL NO.
4/8/08	500478	H807E Hawaii Trader	
PORT OF LOADING	**PORT OF DISCHARGE**	**DESTINATION**	**BEYOND CARRIER**
Honolulu	Seattle	Seattle	

SHIPPER	CONSIGNEE	COLLECT ☐ PREPAID ☐ OTHER ☒ Please Specify
Pacific Commercial Services	Chemical Waste Management NW	
P.O. Box 235117	17629 Cedar Springs Ln	BILL TO: Please show complete address - include zip Pacific Commercial Services
Honolulu, HI 96823	Arlington, OR 97812	P.O. Box 235117
Kevin Mizuno		Honolulu, HI 96823
TELEPHONE 808-545-4599, 808-845-9773fax	TELEPHONE 206-719-4754, 866-239-6687	

CONTAINER NO.	CONTAINER TYPE	SEAL NO.	LOAD DATE	SET TEMP °F	PROCESSOR / SUPPLIER
NSIU 409032	40' high	0219654	4/8/08		

NO OF PIECES	KIND OF PACKAGE	HM	DESCRIPTION OF GOODS PROVIDED BY SHIPPER	NET WEIGHT	GROSS WEIGHT
20	BA	X	Soil with Pesticides, RQ Hazardous	48887	48887
			Waste Solid, n.o.s., 9, NA3077, PG III		
			(Soil with Heptachlor, Chlordane)		
			SE 255		

In accepting this Bill of Lading the shipper agrees that the custody and carriage of the goods identified shall be subject to the terms and conditions on the reverse hereof and of Carrier's tariff or applicable contract of affreightment, which shall govern the relations, whatsoever they may be, between the carrier and the shipper, owner and/or consignee of the goods, in every contingency and whensoever occurring.

This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. If the shipment is of a hazardous nature and has been tendered in a container, it is declared that the packing of the container has been carried out in accordance with the provisions of 49 CFR 176.27 (c).

Shipper: Jilma Jiménez Date: 4/8/08

Received $ _____ to apply to prepayment of the charges on the property described hereon.

Agent or Carrier representative: Northland Services, Inc.

Per: (The signature here acknowledges only the amount prepaid.)

Received for Carrier in good order, count, and condition unless otherwise noted hereon.

Date: 4/08/08

Received By: [illegible]

Quantity: _____

Temperature Received: _____

All terms and conditions available online at www.northlandservices.com/terms/NSI_Terms.htm

Shipper's attention is directed to Section 18 on the reverse side of this Bill of Lading. Where rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property. THE AGREED OR DECLARED VALUE OF THE PROPERTY IS HEREBY STATED BY THE SHIPPER NOT TO BE IN EXCESS OF _____ PER _____

Standard tariff provisions limit Carrier's liability for household goods to $0.60 per lb. per item. Shipper's signature hereon acknowledges this released valuation unless a different value is declared here and additional charges are paid per Tariff NOLS-100, Rule 985.
THE RELEASED VALUE OF THE PROPERTY IS NOT TO EXCEED $_____ PER LB. PER ITEM

395604

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: HIP0001385 52
2. Page 1 of 3 ~~2~~
3. Emergency Response Phone: 1-800-535-5053
4. Manifest Tracking Number: 001991695 JJK

5. Generator's Name and Mailing Address
FORMER NAVAL AIR STATION BARBERS POINT
850 TICONDEROGA ST, STE110, ATTN:TERENCE TENGAN
PEARL HARBOR, HI 96860-5101
Generator's Phone: 808-471-1111x320

Generator's Site Address (if different than mailing address)
BON HOMME RICHARD STREET
KAPOLEI, HI 96707-0350
HIC3557-11

6. Transporter 1 Company Name: PACIFIC COMMERCIAL SERVICES, LLC. 808-545-4599
U.S. EPA ID Number: HIR000097824

7. Transporter 2 Company Name: NORTHLAND SERVICES 800-327-7739
U.S. EPA ID Number: WAD981773005

8. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT OF THE NW
17629 CEDAR SPRINGS LANE
ARLINGTON, OR 97812
Facility's Phone: 541-454-2643
U.S. EPA ID Number: ORD089452353

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes		
X	1. HAZARDOUS WASTE SOLID, N.O.S. (SOIL WITH METHOXYCHLOR, CHLORDANE, DDD, DDE, DDT), 9, NA3077 PGIII	20 ~~020~~	BA	~~48887~~ 21979 ~~48887~~	P	~~D020~~	U036	U247
	2. ~~Hazardous Waste solid, N.O.S. (soil with methoxychlor, chlordane, DDD, DDE, DDT), 9, NA3077 PGIII~~ ~~Sm 5-1-08~~	~~11~~	~~CF~~	~~26588~~	~~P~~	~~U060~~ ~~U061~~ ~~U036~~ ~~U247~~		
	3.	~~Sm 4-30-08~~						
	4.							

14. Special Handling Instructions and Additional Information
9b1: HWSOLID ORL00457 CY 2006 9b1: 171 ~~B-5, 49000P, 24.507~~ SEND COPY TO:
9b2: * CERCLA HAZARDOUS WASTE ERG# 9b2: PCS LLC
9b3: * CONTAINER #: NSIU 409032 JOB# 9b3: P.O. BOX 235117
9b4: * SEAL #: 0219654 3557 9b4: HONOLULU, HI 96823

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: TERENCE H. TENGAN
Signature: [signature]
Month 04 Day 08 Year 08

INT'L
16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER
17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Dustin Dias
Signature: [signature]
Month 4 Day 8 Year 08
Transporter 2 Printed/Typed Name: Marlene Tom
Signature: [signature]
Month 4 Day 8 Year 08

DESIGNATED FACILITY
18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
~~Due to container type, 02 spl added per Kristin Casper/WH Sm 4-30-08~~
D020 waste code removed, soil LDR added per Kristin Casper/WH Sm 4-30-08
Manifest Reference Number:
18b. Alternate Facility (or Generator) U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator) Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. H081 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name: Janice Strand
Signature: [signature]
Month 4 Day 30 Year 08

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

395604

Print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST (Continuation Sheet)

21. Generator ID Number: HIP0001385 52

22. Page: 2

23. Manifest Tracking Number: 001991695JJK

HIC3557-11

24. Generator's Name: FORMER NAVAL AIR STATION BARBERS POINT

25. Transporter 3 Company Name: WEST COAST TRUCKING — U.S. EPA ID Number: WAH000016683

26. Transporter 4 Company Name: UNION PACIFIC RAILROAD COMPANY — U.S. EPA ID Number: NED001792910

27a. HM	27b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	28. Containers No.	28. Containers Type	29. Total Quantity	30. Unit Wt./Vol.	31. Waste Codes		

32. Special Handling Instructions and Additional Information

GENERATOR

33. Transporter 3 Acknowledgment of Receipt of Materials

Printed/Typed Name: KLEYS TARAS — Signature: [signature] — Month 4 Day 25 Year 09

34. Transporter 4 Acknowledgment of Receipt of Materials

Printed/Typed Name: L Sotto — Signature: [signature] — Month 4 Day 25 Year 09

TRANSPORTER

35. Discrepancy

36. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

DESIGNATED FACILITY

EPA Form 8700-22A (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

395604

print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST (Continuation Sheet)	21. Generator ID Number	22. Page	23. Manifest Tracking Number
	HIP 000138552	3 of 3	001991695 JNK

24. Generator's Name

Former Naval Air Station Barbers Point

25. Transporter 5 Company Name Columbia Ridge Landfill — U.S. EPA ID Number ORD 987173457

26. Transporter _____ Company Name — U.S. EPA ID Number

27a. HM	27b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	28. Containers No.	28. Containers Type	29. Total Quantity	30. Unit Wt./Vol.	31. Waste Codes		

32. Special Handling Instructions and Additional Information

GENERATOR

33. Transporter 5 Acknowledgment of Receipt of Materials

Printed/Typed Name: Angela Timmerman — Signature: Angela Timmerman — Month 4 Day 29 Year 08

34. Transporter _____ Acknowledgment of Receipt of Materials

Printed/Typed Name — Signature — Month — Day — Year

TRANSPORTER

35. Discrepancy

DESIGNATED FACILITY

36. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

EPA Form 8700-22A (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

395857

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: HIP0001385552
2. Page 1 of 3 ~~2~~
3. Emergency Response Phone: 1-800-535-5053
4. Manifest Tracking Number: 001991696 JJK

5. Generator's Name and Mailing Address: FORMER NAVAL AIR STATION BARBERS POINT
850 TICONDEROGA ST, STE110, ATTN:TERENCE TENGAN
PEARL HARBOR, HI 96860-5101
808-471-1111x320

Generator's Site Address (if different than mailing address): BON HOMME RICHARD STREET
KAPOLEI, HI 96707-0350

HIC3557-12

Generator's Phone:

6. Transporter 1 Company Name: PACIFIC COMMERCIAL SERVICES, LLC. 808-545-4599 — U.S. EPA ID Number: HIR000097824

7. Transporter 2 Company Name: NORTHLAND SERVICES 800-327-7739 — U.S. EPA ID Number: WAD981773005

8. Designated Facility Name and Site Address: CHEMICAL WASTE MANAGEMENT OF THE NW
17629 CEDAR SPRINGS LANE
ARLINGTON, OR 97812
Facility's Phone: 541-454-2643 — U.S. EPA ID Number: ORD089452353

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. ~~HAZARDOUS WASTE SOLID, N.O.S. (SOIL~~ WITH METHOXYCHLOR, CHLORDANE, DDD, DDE, DDT), 9, NA3077 PGIII	020	BA	48148	P	~~D020~~ U060 U061 U036 U247
	2.					
	3.					
	4. PROFILE: OR100457					

14. Special Handling Instructions and Additional Information
9b1: HWSOLID ORI00457
9b2: * CERCLA HAZARDOUS WASTE
9b3: * CONTAINER #: NS14 ~~404668-9~~ Transloaded to 404788-9
9b4: * SEAL #: ~~0219647~~ 51851

CY 2006 ERG# JOB# 3557
9b1: 171 BIO 487000 24351
9b2:
9b3:
9b4:

SEND COPY TO: PCS LLC
P.O. BOX 235117
HONOLULU, HI 96823

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: TERENCE H. TENGAN — Signature: [signature] — Month 04 Day 08 Year 08

GENERATOR

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Javier Magana — Signature: [signature] — Month 04 Day 08 Year 08
Transporter 2 Printed/Typed Name: Marlene Tom — Signature: [signature] — Month 4 Day 9 Year 08

DESIGNATED FACILITY

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
18b. Alternate Facility (or Generator) — U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator) — Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. H081 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name: Sue McAhren — Signature: [signature] — Month 05 Day 13 Year 08

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

395857

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST (Continuation Sheet)

21. Generator ID Number	22. Page	23. Manifest Tracking Number
H I P 0 0 0 1 3 8 5 5 2	2	001991696JJK

HIC3557-12

24. Generator's Name
FORMER NAVAL AIR STATION BARBERS POINT

25. Transporter 3 Company Name
WEST COAST TRUCKING
U.S. EPA ID Number
W A H 0 0 0 0 1 6 6 8 3

26. Transporter 4 Company Name
UNION PACIFIC RAILROAD COMPANY
U.S. EPA ID Number
N E D 0 0 1 7 9 2 9 1 0

27a. HM	27b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	28. Containers No.	28. Containers Type	29. Total Quantity	30. Unit Wt./Vol.	31. Waste Codes		

32. Special Handling Instructions and Additional Information

GENERATOR

TRANSPORTER

33. Transporter 3 Acknowledgment of Receipt of Materials
Printed/Typed Name [illegible] Signature ANATOLIY TARAS THEES Month 4 Day 25 Year ~~08~~ 07

34. Transporter 4 Acknowledgment of Receipt of Materials
Printed/Typed Name L Sattm Signature [illegible] Month 5 Day 8 Year ✓

DESIGNATED FACILITY

35. Discrepancy

36. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

EPA Form 8700-22A (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

395857

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST (Continuation Sheet)

21. Generator ID Number: HIP 000138552

22. Page: 3 of 3

23. Manifest Tracking Number: 001991696 JJK

24. Generator's Name: Former Naval Air Station Barbers Point

25. Transporter 5 Company Name: Columbia Ridge Landfill — U.S. EPA ID Number: ORD 987173457

26. Transporter _____ Company Name — U.S. EPA ID Number

27a. HM	27b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	28. Containers No.	28. Containers Type	29. Total Quantity	30. Unit Wt./Vol.	31. Waste Codes		

32. Special Handling Instructions and Additional Information

GENERATOR

TRANSPORTER

33. Transporter 5 Acknowledgment of Receipt of Materials

Printed/Typed Name: Angela Timmerman — Signature: Angela Timmerman — Month 05 Day 13 Year 08

34. Transporter _____ Acknowledgment of Receipt of Materials

Printed/Typed Name — Signature — Month Day Year

DESIGNATED FACILITY

35. Discrepancy

36. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

EPA Form 8700-22A (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

UNITEC CORPORATION - SEATTLE, WA 71394

Chemical Waste Management Of The Northwest

17629 Cedar Springs Lane
Arlington, Oregon 97812
541-454-2643
EPA I.D.# ORDO89452353

LOAD NO. 395857

MANIFEST DOC. NO. 001991696JJK Can #404788

B-5

GROSS 112900 LB

W TARE 64200 LB
NET 48700 LB

TIME 12:31 PM 13 MAY 08
TRUCK ID RUSS

NET 24.35 TON
01:29 PM
TRUCK ID RUSS

GENERATOR Former Naval Air Station

ALOHA CARGO TRANSPORT - PIER IN-GATE RECEIPT

PIER 2
HONOLULU, HI 96813

PHONE (808) 536-7033
FAX (808) 531-3004
SEATTLE TOLL FREE (800) 327-7739

DATE 04/09/2008

SHIPPER

CONSIGNEE

BOOKING NO.

DRIVER COLLECT COD CHARGES ☐ YES ☐ NO

SPECIAL INSTRUCTIONS

AMOUNT

ORIGIN HONOLULU HI

DESTINATION SEATTLE WA

NO PACKAGES	HM	KIND OF PKG.- DESCRIPTION OF ARTICLES, SPECIAL MARKS, AND EXCEPTIONS	WEIGHT (SUB TO CORR.)
		CHASSIS 40' FIXED 3 AXLE NSIC-703022 40' CONTAINER HIGH CUBE JORU-642063	
		COMMENT IN:	

This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. SIGNED X

DELIVERING CARRIER PCS BY X

DESCRIBED FREIGHT RECEIVED IN GOOD ORDER EXCEPT AS NOTED FOR CARRIER X DATE

Northland Services, Inc. **Aloha Cargo Transport**
Division of Northland Services, Inc.

B/L No. 500478

P. O. Box 24527 • Seattle, WA 98124
(206) 763-3000 (800) 426-3113 Fax (206) 767-5579

BILL OF LADING ORIGINAL - NOT NEGOTIABLE

BILL OF LADING INSTRUCTIONS AS GIVEN BY SHIPPER OR HIS REPRESENTATIVE

4/8/08	BOOKING / PRO NO. 500478	VESSEL AND VOYAGE NO. H807E Hawaii Trader	CONTROL NO.
OF LOADING lulu	PORT OF DISCHARGE Seattle	DESTINATION Seattle	BEYOND CARRIER

ER c Commercial Services	CONSIGNEE Chemical Waste Management NW	COLLECT ☐ PREPAID ☐ OTHER Please Specify ☒
3ox 235117	17629 Cedar Springs Ln	BILL TO: Please show complete address - include zip Pacific Commercial Services
lulu, HI 96823	Arlington, OR 97812	P.O. Box 235117
Mizuno		Honolulu, HI 96823
'HONE 45-4599, 808-845-9773fax	TELEPHONE 206-719-4754, 866-239-6687	

AINER NO.	CONTAINER TYPE	SEAL NO.	LOAD DATE	SET TEMP	PROCESSOR / SUPPLIER
1 642063-7	40' high	0219652	4/8/08	°F	

S	KIND OF PACKAGE	HM	DESCRIPTION OF GOODS PROVIDED BY SHIPPER	NET WEIGHT	GROSS WEIGHT
	BA	X	Soil with Pesticides, RQ Hazardous	45635	45635
			Waste Solid, n.o.s., 9, NA3077, PG III		
			(Soil with Heptachlor, Chlordane)		
			SE 259		

ing this Bill of Lading the shipper agrees that the custody and carriage of the goods shall be subject to the terms and conditions on the reverse hereof and of Carrier's tariff or contract of affreightment, which shall govern the relations, whatsoever they may be, the carrier and the shipper, owner and/or consignee of the goods, in every contingency soever occurring.

certify that the above named materials are properly classified, described, packaged, and labeled, and are in proper condition for transportation according to the applicable s of the Department of Transportation. If the shipment is of a hazardous nature and has dered in a container, it is declared that the packing of the container has been carried out ance with the provisions of 49 CFR 176.27 (c).

Jillian Jingan Date: 4/8/08

$ _____ to apply to prepayment of the charges on the property described hereon.

arrier representative: Northland Services, Inc.

(The signature here acknowledges only the amount prepaid.)

Received for Carrier in good order, count, and condition unless otherwise noted hereon.

Date: _____

Received By: _____

Quantity: _____

Temperature Received: _____

All terms and conditions available online at www.northlandservices.com/terms/NSI_Terms.htm

ntion is directed to Section 18 on the reverse side of this Bill of Lading. Where rate is dependent pers are required to state specifically in writing the agreed or declared value of the property. D OR DECLARED VALUE OF THE PROPERTY IS HEREBY STATED BY THE SHIPPER NOT CESS OF

$_____ PER _____

Standard tariff provisions limit Carrier's liability for household goods to $0.60 per lb. per item. Shipper's signature hereon acknowledges this released valuation unless a different value is declared here and additional charges are paid per Tariff NOLS-100, Rule 985.
THE RELEASED VALUE OF THE PROPERTY IS NOT TO EXCEED $_____ PER LB. PER ITEM

395649

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: H I P 0 0 0 1 3 8 5 5 2

2. Page 1 of 3 ~~2~~

3. Emergency Response Phone: 1-800-535-5053

4. Manifest Tracking Number: 001991697 JJK

GENERATOR

5. Generator's Name and Mailing Address
FORMER NAVAL AIR STATION BARBERS POINT
850 TICONDEROGA ST, STE110, ATTN:TERENCE TENGAN
PEARL HARBOR, HI 96860-5101
Generator's Phone: 808-471-1111x320

Generator's Site Address (if different than mailing address)
BON HOMME RICHARD STREET
KAPOLEI, HI 96707-0350

HIC3557-13

6. Transporter 1 Company Name: PACIFIC COMMERCIAL SERVICES, LLC. 808-545-4599
U.S. EPA ID Number: H I R 0 0 0 0 9 7 8 2 4

7. Transporter 2 Company Name: NORTHLAND SERVICES 800-327-7739
U.S. EPA ID Number: W A D 9 8 1 7 7 3 0 0 5

8. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT OF THE NW
17629 CEDAR SPRINGS LANE
ARLINGTON, OR 97812
Facility's Phone: 541-454-2643
U.S. EPA ID Number: O R D 0 8 9 4 5 2 3 5 3

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt/Vol.	13. Waste Codes
X	1. HAZARDOUS WASTE SOLID, N.O.S. (SOIL WITH METHOXYCHLOR, CHLORDANE, DDD, DDE, DDT), 9, NA3077 PGIII	020	BA	45635	P	U060 U061 ~~D020~~ U036 U247
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
9b1: HWSOLID OR100457
9b2: * CERCLA HAZARDOUS WASTE
9b3: * CONTAINER #: JBRU 642063-7
9b4: * SEAL #: 0217652

CY 2006 ERG# JOB# 3557
9b1: 171 9b2: 9b3: 9b4:

B-5, 45000P, 22,907

SEND COPY TO:
PCS LLC
P.O. BOX 235117
HONOLULU, HI 96823

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: TERENCE H. TENGAN
Signature: [signature]
Month 04 Day 08 Year 08

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S.
Port of entry/exit:
Transporter signature (for exports only):
Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Ray Ostelli
Signature: [signature]
Month 04 Day 08 Year 08

Transporter 2 Printed/Typed Name: Marlene Tom
Signature: Marlene Tom
Month 4 Day 9 Year 08

DESIGNATED FACILITY

18. Discrepancy

18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Removed waste code D020, added soil LDR per Kristin Castner/WM [illegible] 5-1-08
Manifest Reference Number:

18b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:

18c. Signature of Alternate Facility (or Generator)
Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. H061 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name: Tanya Strand
Signature: [signature]
Month 5 Day 01 Year 08

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

AMS

395649

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST (Continuation Sheet)

21. Generator ID Number: HIP0001385 52

22. Page: 2

23. Manifest Tracking Number: 001991697JJK

HIC3557-13

24. Generator's Name: FORMER NAVAL AIR STATION BARBERS POINT

25. Transporter 3 Company Name: WEST COAST TRUCKING — U.S. EPA ID Number: WAH000016683

26. Transporter 4 Company Name: UNION PACIFIC RAILROAD COMPANY — U.S. EPA ID Number: NED001792910

27a. HM	27b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	28. Containers No.	28. Containers Type	29. Total Quantity	30. Unit Wt./Vol.	31. Waste Codes		

32. Special Handling Instructions and Additional Information

GENERATOR

33. Transporter 3 Acknowledgment of Receipt of Materials

Printed/Typed Name: ANATOLIY — Signature: [signature] — Month Day Year: 04 25 08

34. Transporter 4 Acknowledgment of Receipt of Materials

Printed/Typed Name: Cynthia Cresp UP — Signature: Cynthia Cresp UP — Month Day Year: 04 25 08

TRANSPORTER

35. Discrepancy

DESIGNATED FACILITY

36. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

EPA Form 8700-22A (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

395649

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST (Continuation Sheet)

21. Generator ID Number: HTP 000138552

22. Page: 3 of 3

23. Manifest Tracking Number: 001991697 JJK

24. Generator's Name: Former Naval Air Station Barbers Point

25. Transporter 5 Company Name: Columbia Ridge Landfill — U.S. EPA ID Number: ORD 987173457

26. Transporter _____ Company Name — U.S. EPA ID Number:

GENERATOR

27a. HM	27b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	28. Containers No.	28. Containers Type	29. Total Quantity	30. Unit Wt./Vol.	31. Waste Codes		

32. Special Handling Instructions and Additional Information

TRANSPORTER

33. Transporter 5 Acknowledgment of Receipt of Materials

Printed/Typed Name: Angela Timmerman — Signature: Angela Timmerman — Month 5 Day 1 Year 08

34. Transporter _____ Acknowledgment of Receipt of Materials

Printed/Typed Name — Signature — Month Day Year

DESIGNATED FACILITY

35. Discrepancy

36. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

EPA Form 8700-22A (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

)HA CARGO TRANSPORT - PIER IN-GATE RECEIPT

:R 2
)NOLULU, HI 96813

PHONE (808) 536-7033
FAX (808) 531-3004
SEATTLE TOLL FREE (800) 327-7739

DATE 04/09/2008

BOOKING NO.

DRIVER COLLECT COD CHARGES ☐ YES ☐ NO

PACIFIC COMMERCIAL SERVICES
P.O. BOX 235117

HONOLULU, HI 96823

CONSIGNEE
CHEMICAL WASTE MANAGEMENT NW
17629 CEDAR SPRINGS LN

ARLINGTON, OR 97812

SPECIAL INSTRUCTIONS

AMOUNT

ORIGIN HONOLULU HI

DESTINATION SEATTLE WA

NO.PACKAGES	HM	KIND OF PKG.- DESCRIPTION OF ARTICLES, SPECIAL MARKS, AND EXCEPTIONS	WEIGHT (SUB TO CORR.)
		CHASSIS 40' FIXED 3 AXLE NSIC-703055 40' CONTAINER HIGH CUBE JORU-642173 H807 -500478 COMMENT IN:	

This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. SIGNED X

)ELIVERING CARRIER PCS BY X

)ESCRIBED FREIGHT RECEIVED IN GOOD ORDER EXCEPT AS NOTED FOR CARRIER X DATE

DRAYMAN

Northland Services, Inc.

Aloha Cargo Transport
Division of Northland Services, Inc.

B/L No. 500478

P. O. Box 24527 • Seattle, WA 98124
(206) 767-3000 (800) 426-3113 Fax (206) 767-5579

BILL OF LADING ORIGINAL - NOT NEGOTIABLE

BILL OF LADING INSTRUCTIONS AS GIVEN BY SHIPPER OR HIS REPRESENTATIVE

	BOOKING / PRO NO.	VESSEL AND VOYAGE NO.	CONTROL NO.
4/8/08	500478	H807E Hawaii Trader	
T OF LOADING	PORT OF DISCHARGE	DESTINATION	BEYOND CARRIER
olulu	Seattle	Seattle	

PER	CONSIGNEE	COLLECT PREPAID OTHER Please Specify
fic Commercial Services	Chemical Waste Management NW	☐ ☐ ☒
Box 235117	17629 Cedar Springs Ln	BILL TO: Please show complete address - include zip Pacific Commercial Services
olulu, HI 96823	Arlington, OR 97812	P.O. Box 235117
n Mizuno		Honolulu, HI 96823
PHONE	TELEPHONE	
545-4599, 808-845-9773fax	206-719-4754, 866-239-6687	

TAINER NO.	CONTAINER TYPE	SEAL NO.	LOAD DATE	SET TEMP	PROCESSOR / SUPPLIER
JORU 642173-6	40' high	0219614	4/8/08	°F	

OF ES	KIND OF PACKAGE	HM	DESCRIPTION OF GOODS PROVIDED BY SHIPPER	NET WEIGHT	GROSS WEIGHT
0	BA	X	Soil with Pesticides, RQ Hazardous	47625	47625
			Waste Solid, n.o.s., 9, NA3077, PG III		
			(Soil with Heptachlor, Chlordane)		

pting this Bill of Lading the shipper agrees that the custody and carriage of the goods d shall be subject to the terms and conditions on the reverse hereof and of Carrier's tariff or ole contract of affreightment, which shall govern the relations, whatsoever they may be, n the carrier and the shipper, owner and/or consignee of the goods, in every contingency ensoever occurring.

to certify that the above named materials are properly classified, described, packaged, and labeled, and are in proper condition for transportation according to the applicable ons of the Department of Transportation. If the shipment is of a hazardous nature and has ndered in a container, it is declared that the packing of the container has been carried out rdance with the provisions of 49 CFR 176.27 (c).

: Jlmon Jmgm Date: 4/8/08

d $ _____ to apply to prepayment of the charges on the property described hereon.

Carrier representative: Northland Services, Inc.

(The signature here acknowledges only the amount prepaid.)

Received for Carrier in good order, count, and condition unless otherwise noted hereon.

Date: 4/09/08

Received By: Lbw

Quantity: _____

Temperature Received: _____

All terms and conditions available online at www.northlandservices.com/terms/NSI_Terms.htm

attention is directed to Section 18 on the reverse side of this Bill of Lading. Where rate is dependent shippers are required to state specifically in writing the agreed or declared value of the property. EED OR DECLARED VALUE OF THE PROPERTY IS HEREBY STATED BY THE SHIPPER NOT EXCESS OF

$_____ PER _____

Standard tariff provisions limit Carrier's liability for household goods to $0.60 per lb. per item. Shipper's signature hereon acknowledges this released valuation unless a different value is declared here and additional charges are paid per Tariff NOLS-100, Rule 985.
THE RELEASED VALUE OF THE PROPERTY IS NOT TO EXCEED $_____ PER LB. PER ITEM

395648

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: HIP0001385552
2. Page 1 of 3 ~~2~~
3. Emergency Response Phone: 1-800-535-5053
4. Manifest Tracking Number: 001991698 JJK

GENERATOR

5. Generator's Name and Mailing Address:
FORMER NAVAL AIR STATION BARBERS POINT
850 TICONDEROGA ST, STE110, ATTN:TERENCE TENGAN
PEARL HARBOR, HI 96860-5101
Generator's Phone: 808-471-1111x320

Generator's Site Address (if different than mailing address):
BON HOMME RICHARD STREET
KAPOLEI, HI 96707-0350
HIC3557-14

6. Transporter 1 Company Name: PACIFIC COMMERCIAL SERVICES, LLC. 808-545-4599
U.S. EPA ID Number: HIR000097824

7. Transporter 2 Company Name: NORTHLAND SERVICES 800-327-7739
U.S. EPA ID Number: WAD981773005

8. Designated Facility Name and Site Address:
CHEMICAL WASTE MANAGEMENT OF THE NW
17629 CEDAR SPRINGS LANE
ARLINGTON, OR 97812
Facility's Phone: 541-454-2643
U.S. EPA ID Number: ORD089452353

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. HAZARDOUS WASTE SOLID, N.O.S. (SOIL WITH METHOXYCHLOR, CHLORDANE, DDD, DDE, DDT), 9, NA3077 PGIII	020	BA	47625	P	U060 U061 ~~D020~~ U036 U247
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
9b1: HWSOLID OR100457 CY 2006 9b1: 171 B-5, 47700P, 23,857
9b2: * CERCLA HAZARDOUS WASTE ERG# 9b2: SEND COPY TO: PCS LLC
9b3: * CONTAINER #: JORU 642173-6 JOB# 9b3: P.O. BOX 235117
9b4: * SEAL #: 0219614 3557 9b4: HONOLULU, HI 96823

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: TERENCE H. TENGAN
Signature: [signature]
Month 04 Day 08 Year 08

INTL

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Dustin Dias
Signature: [signature]
Month 4 Day 8 Year 08
Transporter 2 Printed/Typed Name: Marlene Tom
Signature: [signature]
Month 4 Day 9 Year 08

DESIGNATED FACILITY

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Removed waste code D020, added ~~soil~~ LDR per Kristin Costner/WH ~~JM~~ 5-1-08
Manifest Reference Number:
18b. Alternate Facility (or Generator) U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator) Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. H081 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name: Tania Strand
Signature: [signature]
Month 5 Day 2 Year 08

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

BMS

395648

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST (Continuation Sheet)

21. Generator ID Number: HIP000138552

22. Page: 2

23. Manifest Tracking Number: 001991698JJK

HIC3557-14

24. Generator's Name: FORMER NAVAL AIR STATION BARBERS POINT

25. Transporter 3 Company Name: WEST COAST TRUCKING — U.S. EPA ID Number: WAH000016683

26. Transporter 4 Company Name: UNION PACIFIC RAILROAD COMPANY — U.S. EPA ID Number: NED017929910

27a. HM	27b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	28. Containers No.	28. Containers Type	29. Total Quantity	30. Unit Wt./Vol.	31. Waste Codes		

32. Special Handling Instructions and Additional Information

GENERATOR

TRANSPORTER

33. Transporter 3 Acknowledgment of Receipt of Materials

Printed/Typed Name: Kleets TAAAS — Signature: [signature] — Month 4 Day 25 Year 08

34. Transporter 4 Acknowledgment of Receipt of Materials

Printed/Typed Name: Cynthia Crespo — Signature: Cynthia Crespo — Month 4 Day 25 Year 08

DESIGNATED FACILITY

35. Discrepancy

36. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

EPA Form 8700-22A (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

395648

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST (Continuation Sheet)

21. Generator ID Number: HIP 000138552

22. Page: 3 of 3

23. Manifest Tracking Number: 001991698 JJK

24. Generator's Name: Former Naval Air Station Barbers Point

25. Transporter 5 Company Name: Columbia Ridge Landfill — U.S. EPA ID Number: ORD 987173457

26. Transporter _____ Company Name — U.S. EPA ID Number:

27a. HM	27b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	28. Containers No.	28. Containers Type	29. Total Quantity	30. Unit Wt./Vol.	31. Waste Codes		

32. Special Handling Instructions and Additional Information

GENERATOR

33. Transporter 5 Acknowledgment of Receipt of Materials

Printed/Typed Name: Angela Timmerman — Signature: Angela Timmerman — Month 5 Day 1 Year 08

34. Transporter _____ Acknowledgment of Receipt of Materials

Printed/Typed Name — Signature — Month Day Year

TRANSPORTER

35. Discrepancy

36. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

DESIGNATED FACILITY

EPA Form 8700-22A (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

ALOHA CARGO TRANSPORT - PIER IN-GATE RECEIPT

PIER 2
HONOLULU, HI 96813

PHONE (808) 536-7033
FAX (808) 531-3004
SEATTLE TOLL FREE (800) 327-7739

DATE 04/08/2008

SHIPPER
PACIFIC COMMERCIAL SERVICES
P.O. BOX 235117

HONOLULU, HI 96823

CONSIGNEE
CHEMICAL WASTE MANAGEMENT NW
17629 CEDAR SPRINGS LN

ARLINGTON, OR 97812

BOOKING NO.

DRIVER COLLECT COD CHARGES
☐ YES ☐ NO

SPECIAL INSTRUCTIONS

AMOUNT

ORIGIN HONOLULU HI

DESTINATION SEATTLE WA

NO PACKAGES	HM	KIND OF PKG.- DESCRIPTION OF ARTICLES, SPECIAL MARKS, AND EXCEPTIONS	WEIGHT (SUB TO CORR.)
		CHASSIS 40' FIXED 3 AXLE NSIC-703022 40' CONTAINER HIGH CUBE NSIU-404855 H807 -500478 HAZ #9 COMMENT IN:	

This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. SIGNED X

DELIVERING CARRIER PCS BY X

DESCRIBED FREIGHT RECEIVED IN GOOD ORDER EXCEPT AS NOTED FOR CARRIER X DATE

DRAYMAN

Northland Services, Inc. Aloha Cargo Transport

Division of Northland Services, Inc.

B/L No. 500478

P. O. Box 24527 • Seattle, WA 98124
(206) 763-3000 (800) 426-3113 Fax (206) 767-5579

BILL OF LADING ORIGINAL - NOT NEGOTIABLE

BILL OF LADING INSTRUCTIONS AS GIVEN BY SHIPPER OR HIS REPRESENTATIVE

DATE	BOOKING / PRO NO.	VESSEL AND VOYAGE NO.	CONTROL NO.
4/8/08	500478	H807E Hawaii Trader	
PORT OF LOADING	**PORT OF DISCHARGE**	**DESTINATION**	**BEYOND CARRIER**
Honolulu	Seattle	Seattle	

SHIPPER	CONSIGNEE	COLLECT PREPAID OTHER Please Specify
Pacific Commercial Services	Chemical Waste Management NW	☐ ☐ ☒
P.O. Box 235117	17629 Cedar Springs Ln	BILL TO: Please show complete address - include zip Pacific Commercial Services
Honolulu, HI 96823	Arlington, OR 97812	P.O. Box 235117
Kevin Mizuno		Honolulu, HI 96823
TELEPHONE	TELEPHONE	
808-545-4599, 808-845-9773fax	206-719-4754, 866-239-6687	

CONTAINER NO.	CONTAINER TYPE	SEAL NO.	LOAD DATE	SET TEMP	PROCESSOR / SUPPLIER
NSIU 404855-2	40' high	0219629	4/8/08	°F	

NO OF PIECES	KIND OF PACKAGE	HM	DESCRIPTION OF GOODS PROVIDED BY SHIPPER	NET WEIGHT	GROSS WEIGHT
20	BA	X	Soil with Pesticides, RQ Hazardous	48373	48373
			Waste Solid, n.o.s., 9, NA3077, PG III		
			(Soil with Heptachlor, Chlordane)		
				SE	
				245	

accepting this Bill of Lading the shipper agrees that the custody and carriage of the goods entified shall be subject to the terms and conditions on the reverse hereof and of Carrier's tariff or pplicable contract of affreightment, which shall govern the relations, whatsoever they may be, etween the carrier and the shipper, owner and/or consignee of the goods, in every contingency nd whensoever occurring.

his is to certify that the above named materials are properly classified, described, packaged, arked and labeled, and are in proper condition for transportation according to the applicable egulations of the Department of Transportation. If the shipment is of a hazardous nature and has een tendered in a container, it is declared that the packing of the container has been carried out accordance with the provisions of 49 CFR 176.27 (c).

hipper: Julian Juhan Date: 4/8/08

eceived $ _____ to apply to prepayment of the charges on the property described hereon.

gent or Carrier representative: Northland Services, Inc.

r: (The signature here acknowledges only the amount prepaid.)

Received for Carrier in good order, count, and condition unless otherwise noted hereon.

Date: _____

Received By: _____

Quantity: _____

Temperature Received: _____

All terms and conditions available online at www.northlandservices.com/terms/NSI_Terms.htm

ipper's attention is directed to Section 18 on the reverse side of this Bill of Lading. Where rate is dependent value, shippers are required to state specifically in writing the agreed or declared value of the property. HE AGREED OR DECLARED VALUE OF THE PROPERTY IS HEREBY STATED BY THE SHIPPER NOT BE IN EXCESS OF

$_____ PER _____

hipper: _____ Date: _____

Standard tariff provisions limit Carrier's liability for household goods to $0.60 per lb. per item. Shipper's signature hereon acknowledges this released valuation unless a different value is declared here and additional charges are paid per Tariff NOLS-100, Rule 985.
THE RELEASED VALUE OF THE PROPERTY IS NOT TO EXCEED $_____ PER LB. PER ITEM

Shipper: _____ Date: _____

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) 395623 Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: H I P 0 0 0 1 3 8 5 5 2
2. Page 1 of 3 ~~2~~
3. Emergency Response Phone: 1-800-535-5053
4. Manifest Tracking Number: 001991699 JJK

GENERATOR

5. Generator's Name and Mailing Address
FORMER NAVAL AIR STATION BARBERS POINT
850 TICONDEROGA ST, STE110, ATTN:TERENCE TENGAN
PEARL HARBOR, HI 96860-5101
Generator's Phone: 808-471-1111x320

Generator's Site Address (if different than mailing address)
BON HOMME RICHARD STREET
KAPOLEI, HI 96707-0350
HIC3557-15

6. Transporter 1 Company Name: PACIFIC COMMERCIAL SERVICES, LLC. 808-545-4599
U.S. EPA ID Number: H I R 0 0 0 0 9 7 8 2 4

7. Transporter 2 Company Name: NORTHLAND SERVICES 800-327-7739
U.S. EPA ID Number: W A D 9 8 1 7 7 3 0 0 5

8. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT OF THE NW
17629 CEDAR SPRINGS LANE
ARLINGTON, OR 97812
Facility's Phone: 541-454-2643
U.S. EPA ID Number: O R D 0 8 9 4 5 2 3 5 3

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes		
X	1. HAZARDOUS WASTE SOLID, N.O.S. (SOIL WITH METHOXYCHLOR, CHLORDANE, DDD, DDE, DDT), 9, NA3077 PGIII	020	BA	48373	P	~~D020~~	U060 U036	U061 U247
	2.					Sr 4-30-08		
	3.							
	4.							

14. Special Handling Instructions and Additional Information
9b1: HWSOLID OR100457 CY 2006 9b1: 171 SEND COPY TO:
9b2: * CERCLA HAZARDOUS WASTE ERG# 9b2: PCS LLC
9b3: * CONTAINER #: N5IU 404835-2 JOB# 9b3: P.O. BOX 235117
9b4: * SEAL #: 0219629 3557 9b4: HONOLULU, HI 96823
B-5, 40550P, 24.28T

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: TERENCE H. TENGAN Signature: Terence H. Tengan Month 04 Day 08 Year 08

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Dustin Dias Signature: Dustin Dias Month 4 Day 8 Year 08
Transporter 2 Printed/Typed Name: Marlene Tom Signature: Marlene Tom Month 4 Day 8 Year 08

DESIGNATED FACILITY

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Waste code D020 removed per Kristin Castner/WM Sr 4-30-08.
Manifest Reference Number:

18b. Alternate Facility (or Generator) U.S. EPA ID Number
Facility's Phone:

18c. Signature of Alternate Facility (or Generator) Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. H081 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name: Pamela Strand Signature: Pamela Strand Month 5 Day 01 Year 08

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete. **DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)**

BMS

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) 395623

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST (Continuation Sheet)

21. Generator ID Number: HIP0001385 52

22. Page: 2

23. Manifest Tracking Number: 001991699JJK

HIC3557-15

24. Generator's Name: FORMER NAVAL AIR STATION BARBERS POINT

25. Transporter 3 Company Name: WEST COAST TRUCKING — U.S. EPA ID Number: WAH000016683

26. Transporter 4 Company Name: UNION PACIFIC RAILROAD COMPANY — U.S. EPA ID Number: NED001792910

27a. HM	27b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	28. Containers No.	28. Containers Type	29. Total Quantity	30. Unit Wt./Vol.	31. Waste Codes		

32. Special Handling Instructions and Additional Information

GENERATOR

33. Transporter 3 Acknowledgment of Receipt of Materials

Printed/Typed Name: ANATOLY — Signature: — Month Day Year: 04 25 08

34. Transporter 4 Acknowledgment of Receipt of Materials

Printed/Typed Name: L Sutton — Signature: — Month Day Year: 4 25 8

TRANSPORTER

35. Discrepancy

36. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

DESIGNATED FACILITY

EPA Form 8700-22A (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

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Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST (Continuation Sheet)

21. Generator ID Number	22. Page	23. Manifest Tracking Number
HIP 000138552	3 of 3	001991699 JJK

24. Generator's Name: Former Naval Air Station Barbers Point

25. Transporter 5 Company Name: Columbia Ridge Landfill — U.S. EPA ID Number: ORD 987173457

26. Transporter _____ Company Name — U.S. EPA ID Number:

27a. HM	27b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	28. Containers No.	28. Containers Type	29. Total Quantity	30. Unit Wt./Vol.	31. Waste Codes		

32. Special Handling Instructions and Additional Information

GENERATOR

TRANSPORTER

33. Transporter 5 Acknowledgment of Receipt of Materials

Printed/Typed Name: Angela Timmerman — Signature: Angela Timmerman — Month 4 Day 30 Year 08

34. Transporter _____ Acknowledgment of Receipt of Materials

Printed/Typed Name: — Signature: — Month Day Year

DESIGNATED FACILITY

35. Discrepancy

36. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

EPA Form 8700-22A (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

Northland Services, Inc. Aloha Cargo Transport

Division of Northland Services, Inc.

B/L No. 500478

P. O. Box 24527 • Seattle, WA 98124
(206) 763-3000 (800) 426-3113 Fax (206) 767-5579

BILL OF LADING ORIGINAL - NOT NEGOTIABLE

BILL OF LADING INSTRUCTIONS AS GIVEN BY SHIPPER OR HIS REPRESENTATIVE

DATE	BOOKING / PRO NO.	VESSEL AND VOYAGE NO.	CONTROL NO.
4/08/08	500478	H807E Hawaii Trader	
PORT OF LOADING	**PORT OF DISCHARGE**	**DESTINATION**	**BEYOND CARRIER**
Honolulu	Seattle	Seattle	

SHIPPER	CONSIGNEE	COLLECT ☐ PREPAID ☐ OTHER ☒ Please Specify
Pacific Commercial Services	Chemical Waste Management NW	
P.O. Box 235117	17629 Cedar Springs Ln	BILL TO: Please show complete address - include zip Pacific Commercial Services
Honolulu, HI 96823	Arlington, OR 97812	P.O. Box 235117
Kevin Mizuno		Honolulu, HI 96823
TELEPHONE 808-545-4599, 808-845-9773 fax	TELEPHONE 206-719-4754, 866-239-6687	

CONTAINER NO.	CONTAINER TYPE	SEAL NO.	LOAD DATE	SET TEMP °F	PROCESSOR / SUPPLIER
NSIU 404102-8	40' high	0219624	4/08/08		

NO OF PIECES	KIND OF PACKAGE	HM	DESCRIPTION OF GOODS PROVIDED BY SHIPPER	NET WEIGHT	GROSS WEIGHT
19	BA	X	Soil with Pesticides, RQ Hazardous	47971	47971
			Waste Solid, n.o.s., 9, NA3077, PG III		
			(Soil with Heptachlor, Chlordane)		

In accepting this Bill of Lading the shipper agrees that the custody and carriage of the goods identified shall be subject to the terms and conditions on the reverse hereof and of Carrier's tariff or applicable contract of affreightment, which shall govern the relations, whatsoever they may be, between the carrier and the shipper, owner and/or consignee of the goods, in every contingency and whensoever occurring.

This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. If the shipment is of a hazardous nature and has been tendered in a container, it is declared that the packing of the container has been carried out in accordance with the provisions of 49 CFR 176.27 (c).

Shipper: Jilma Inga m Date: 4/8/08

Received $ _____ to apply to prepayment of the charges on the property described hereon.

Agent or Carrier representative: Northland Services, Inc.

Per: _____ (The signature here acknowledges only the amount prepaid.)

Received for Carrier in good order, count, and condition unless otherwise noted hereon.

Date: 4/8/8

Received By: MW

Quantity: _____

Temperature Received: _____

All terms and conditions available online at www.northlandservices.com/terms/NSI_Terms.htm

Shipper's attention is directed to Section 18 on the reverse side of this Bill of Lading. Where rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property. AGREED OR DECLARED VALUE OF THE PROPERTY IS HEREBY STATED BY THE SHIPPER NOT IN EXCESS OF $_____ PER _____

Date:

Standard tariff provisions limit Carrier's liability for household goods to $0.60 per lb. per item. Shipper's signature hereon acknowledges this released valuation unless a different value is declared here and additional charges are paid per Tariff NOLS-100, Rule 985.
THE RELEASED VALUE OF THE PROPERTY IS NOT TO EXCEED $_____ PER LB. PER ITEM

Shipper: Date:

395647

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Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: HIP0001385 52
2. Page 1 of 3 ~~2~~
3. Emergency Response Phone: 1-800-535-5053
4. Manifest Tracking Number: 001991700 JJK

5. Generator's Name and Mailing Address
FORMER NAVAL AIR STATION BARBERS POINT
850 TICONDEROGA ST, STE110, ATTN:TERENCE TENGAN
PEARL HARBOR, HI 96860-5101
Generator's Phone: 808-471-1111x320

Generator's Site Address (if different than mailing address)
BON HOMME RICHARD STREET
KAPOLEI, HI 96707-0350
HIC3557-16

6. Transporter 1 Company Name: PACIFIC COMMERCIAL SERVICES, LLC. 808-545-4599
U.S. EPA ID Number: HIR000097824

7. Transporter 2 Company Name: NORTHLAND SERVICES 800-327-7739
U.S. EPA ID Number: WAD981773005

8. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT OF THE NW
17629 CEDAR SPRINGS LANE
ARLINGTON, OR 97812
Facility's Phone: 541-454-2643
U.S. EPA ID Number: ORD089452353

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes		
X	1. HAZARDOUS WASTE SOLID, N.O.S. (SOIL WITH METHOXYCHLOR, CHLORDANE, DDD, DDE, DDT), 9, NA3077 PGIII	019	BA	47971	P	~~D020~~ Sm 5-1-08	U060 U036	U061 U247
	2.							
	3.							
	4.							

14. Special Handling Instructions and Additional Information
9b1: HWSOLID OR100457 CY 2006 9b1: 171 ~~B 5,000,24 DOT~~
9b2: * CERCLA HAZARDOUS WASTE ERG# 9b2:
9b3: * CONTAINER #: NSIU 404102-8 JOB# 9b3:
9b4: * SEAL #: 0219624 3557 9b4:
SEND COPY TO:
PCS LLC
P.O. BOX 235117
HONOLULU, HI 96823

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: TERENCE H. TENGAN
Signature: [signature]
Month 04 Day 08 Year 08

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: JAVIER MAGANA
Signature: [signature]
Month 04 Day 08 Year 08
Transporter 2 Printed/Typed Name: Marlene Tom
Signature: [signature]
Month 4 Day 8 Year 08

DESIGNATED FACILITY

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☒ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Waste code D020 removed, added soil LDR per Kristin Castner/WH Sm 5-1-08
Manifest Reference Number:

18b. Alternate Facility (or Generator) U.S. EPA ID Number
Facility's Phone:

18c. Signature of Alternate Facility (or Generator) Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. H081 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name: Janice Strand
Signature: [signature]
Month 5 Day 2 Year 08

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DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

BMS

395647

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Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST (Continuation Sheet)

21. Generator ID Number: HIP0001385 52

22. Page: 2

23. Manifest Tracking Number: 001991700JJK

HIC3557-16

24. Generator's Name: FORMER NAVAL AIR STATION BARBERS POINT

25. Transporter 3 Company Name: WEST COAST TRUCKING — U.S. EPA ID Number: WAH000016683

26. Transporter 4 Company Name: UNION PACIFIC RAILROAD COMPANY — U.S. EPA ID Number: NED001792910

27a. HM	27b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	28. Containers No.	28. Containers Type	29. Total Quantity	30. Unit Wt./Vol.	31. Waste Codes		

32. Special Handling Instructions and Additional Information

GENERATOR

33. Transporter 3 Acknowledgment of Receipt of Materials

Printed/Typed Name: Kleis TARAS — Signature: [signature] — Month 4 Day 25 Year 08

34. Transporter 4 Acknowledgment of Receipt of Materials

Printed/Typed Name: L Sathro — Signature: [signature] — Month 4 Day 25 Year 8

TRANSPORTER

35. Discrepancy

36. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

DESIGNATED FACILITY

EPA Form 8700-22A (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

395647

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Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST (Continuation Sheet)

21. Generator ID Number: HIP000138552

22. Page: 3 of 3

23. Manifest Tracking Number: 001991700 JJK

24. Generator's Name: Former Naval Air Station Barbers Point

25. Transporter 5 Company Name: Columbia Ridge Landfill — U.S. EPA ID Number: ORD987173457

26. Transporter _____ Company Name — U.S. EPA ID Number:

27a. HM	27b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	28. Containers No.	28. Containers Type	29. Total Quantity	30. Unit Wt./Vol.	31. Waste Codes		

32. Special Handling Instructions and Additional Information

GENERATOR

TRANSPORTER

33. Transporter 5 Acknowledgment of Receipt of Materials

Printed/Typed Name: Angela Timmerman — Signature: Angela Timmerman — Month 5 Day 1 Year 08

34. Transporter _____ Acknowledgment of Receipt of Materials

Printed/Typed Name — Signature — Month Day Year

DESIGNATED FACILITY

35. Discrepancy

36. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

EPA Form 8700-22A (Rev. 3-05). Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

PVT Land Company, Inc.

Asbestos Waste Shipment Record

53740 #3557

1. Worksite & Mailing Address Bon Homme Richard St.; Kapolei, HI 96707-0350 c/o 850 Ticonderoga St., Ste 110 Pearl Harbor, HI 96860-5101	Owner's Name Former Naval Air Station, Barbers Point	Owner's Phone No. (808) 471-1111 x 320
2. Operator's Name & Address Environmental Chemical Corporation 99-1151 Iwaena Street Aiea, HI 96701		Operator's Phone No. (808) 486-3707
3. Waste Disposal Site (WDS) Name, Mailing Address & Location PVT Land Company, Inc. 87-2020 Farrington Hwy. Nanakuli, HI 96792		WDS Phone No. (808) 668-4561
4. Name & Address of Responsible Agency Hawaii Department of Health - Clean Air Branch 919 Ala Moana Blvd. Honolulu, HI 96814		(808) 543-8200

5. Description of Materials	6. Containers No.	Type	7. Total Quantity
RACM transite **Cat I ACM** Asbestos, 9, NA2212, PGIII (non-friable asbestos) **Cat II ACM**	1	BA	362 P Cm (Cyd)

8. Special Handling Instructions & Additional Information

None

9. OPERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked and labeled, and are in all respects in proper condition for transport by highway according to applicable international and government regulations.

Printed/Typed Name & Title	Signature	Mo / Day / Yr
Michael Hiu/ HS/QC Supervisor	Michael R. Hiu	04/10/08

10. Transporter 1 (Acknowledgement of Receipt of Materials)

Printed/Typed Name & Title	Signature	Mo / Day / Yr
Dustin Dias	Dustin Dias	4/10/08

Company Name & Address	Phone Number
Pacific Commercial Services, LLC	

11. Transporter 1 (Acknowledgement of Receipt of Materials)

Printed/Typed Name & Title	Signature	Mo / Day / Yr

Company Name & Address	Phone Number

12. Discrepancy Indication Space

13. Waste Disposal Site Owner or Operator

Certification of receipt of asbestos materials covered by this manifest except as noted in item 12.

Printed/Typed Name & Title	Signature	Mo / Day / Yr
ROSALIND ISHII WEIGHMASTER		APR 15 2008

Appendix E
Comment Matrix to Draft Report

CTO:	FRAC – CTO 0001	Document Title:	Draft Remediation Verification Report of May 2008, Removal Action at Former Drum Crushing Area, Former NAS Barbers Point, Oahu, Hawaii		
Date:	June 5, 2008	Review Organization:	NAVFAC Hawaii	Reviewer(s):	Jan Kotoshirodo, OPHEV3JK

NO.	REFERENCE	REVIEWER'S COMMENT	RESPONSE TO COMMENT
1.	Section 1, Page 1	3rd ¶, 1st sentence: insert "of the" after "purpose".	Changed according to comment.
2.	Figure 1-1	On island of Oahu map, replace "Barbers Point" with "Former NAS Barbers Point".	Changed according to comment.
3.	Figures 1-2, 1-3, 2-1 to 2-5	In title block: Replace "PACIFIC DIVISION / Makalapa, HI" with "NAVFAC Hawaii / Pearl Harbor, HI".	Removed all reference to Pacific Division and replaced with NAVFAC Hawaii on all Figures.
4.	Figures 1-2, 1-3, 2-1 to 2-5	In title block: Delete "PACDIV" before "CONTRACT #"	Removed all reference to Pacific Division and replaced with NAVFAC Hawaii on all Figures.
5.	Section 2.11, Page 35	2nd ¶ of section, 4th sentence: Remove "s" in "Theses".	Changed according to comment.
6.	Section 3.1, Page 36	1st ¶ of section, 2nd to last sentence: replace "concentration" with "concentrations".	Changed according to comment.
7.	Section 3.1, Page 36	2nd ¶ of section, 1st sentence: insert "to" after "submitted".	Changed according to comment.
8.	Section 3.1, Page 36	3rd ¶ of section, 1st sentence: either delete "s" in "Wastes", or replace "was" with "were".	Changed according to comment.
9.	Section 3.1, Page 36	5th ¶ of section, 3rd sentence: The text references the "landfills" listed in Table 3-1. Should this statement be revised to state that the RCRA haz waste discussed in this ¶ was sent to one disposal facility - Chemical Waste Management of the Northwest?	Revised 3rd sentence: "The shipping containers were then transported inland using licensed waste transporters, and disposed of at a RCRA- and CERCLA-approved landfill, specifically, Chemical Waste Management of the Northwest located in Arlington, Oregon."

TO:	FRAC – CTO 0001	Document Title:	Draft Remediation Verification Report of May 2008, Removal Action at Former Drum Crushing Area, Former NAS Barbers Point, Oahu, Hawaii	
Date: June 27, 2008		Review Organization:	DOH HEER Office	Reviewer(s): Maria Eloisa Q. Reyes, Ph.D.

NO.	REFERENCE	REVIEWER'S COMMENT	RESPONSE TO COMMENT
1.	Page 1	On Page 1, correct the chemical names for 4,4'-DDD, 4,4'DDE, and 4.4'-DDT. The chemical name is dichlorodiphenyl(x) and not dichlorodipheny(x).	Changed according to comment.
2.	Page 1	On Page 1, include information about the acreage of the drum crushing area?	Included calculated area in ft^2 and acres for the Drum Crushing Area in text. Section 1.1, 2nd ¶, 2nd sentence reads: "It consists of an area of approximately 2,046 square feet equating to 0.047 acres."
3.	Page ES-1	On Page ES-1, it is stated that the removal action was conducted from August 2007 through April 2008 while on Pages 1 and 13, it stated that fieldwork was conducted from July 2007 to April 2008. Be consistent with the dates of the fieldwork.	Changed according to comment. Verified that fieldwork commenced in July 2007.
4.	Pages 5 to 9	On Pages 5 to 9, data Table 1-1 is not presented in a manner that is easy to understand. Clearly indicate what analytes are "ND" or "NA" or redo the table to allow one (1) column per analyte.	Table 1-1 is a compilation of data provided from previous investigations, including the EBS conducted in 1994 and the final excavation design document prepared by Tetra Tech. It is essentially the same Table 1-1 provided in the approved Site Work Plan Addendum prepared in July 2007 by ECC. The data from the 1994 EBS summarized in Table 1-1 has been revised by listing all of the analytes reported for each sample, and including "ND" for analytes that were not detected. The data from the final excavation design document prepared by Tetra Tech did not present each analyte in the summary tables. Only analytes with detection were summarized in the tables and figures provided to ECC. Laboratory analytical reports supporting the Tetra Tech data were not available.. Therefore, analytes that were not detected could not be verified, and were not included in Table 1-1. The data collected during the site investigation conducted in 2003 was removed from Table 1-1 because the chemicals of concern associated with this current removal action were not analyzed as part of that investigation. The 2003 investigation however is still discussed in the text of the report as part of the site history.
5.	Page 11	On Page 11, correct the project cleanup goal for arsenic in Table 1-2. It should be 20 mg/kg instead of 22 mg/kg.	Project cleanup goal for arsenic in Table 1-2 on page 11 is correct in accordance with Table 1: Excavation Criteria for Contaminants of Concern found on page 7 of the Action Memorandum dated May 2005 for the Former Drum Crushing Area and Table 3-4 Reference Limits and Evaluation Table of the Revised Site Work Plan dated July 2007. Arsenic cleanup goal is 22 mg/kg based on 2004 EPA Residential noncancer endpoint PRG.

6.	Pages 15 to 18	On Pages 15 to 18, data Table 2-1 is not presented in a manner that is easy to understand. Clearly indicate what analytes are "NA" or redo the table to allow one (1) column per analyte.	Table revised to identify which analytes were not analyzed (NA) and which analytes were not detected (ND).
7.	Page 20	On Pages 20, data Table 2-2 is not presented in a manner that is easy to understand. Clearly indicate what analytes are "NA" or redo the table to allow one (1) column per analyte.	Table revised to identify which analytes were not analyzed (NA) and which analytes were not detected (ND).
8.	Page 21	On Pages 20, data Table 2-3 is not presented in a manner that is easy to understand. Clearly indicate what analytes are "NA" or redo the table to allow one (1) column per analyte.	Table revised to identify which analytes were not analyzed (NA) and which analytes were not detected (ND).
9.	Pages 22, 24, 26 and 30	On Pages 22, 24, 26, and 30, data in Tables 2-4, 2-5, 2-6 and 2-7 is not presented in a manner that is easy to understand. a. The data is not arranged chronologically by sample number or date. b. The tables are incomplete and missing some data points, especially some that show exceedances. Some tables are clearly lacking historical data from 1994, 2002, and 2005. Theses data should be included considering these are summary tables from which conclusions are drawn to determine final excavation limits. c. Clearly indicate what analytes are "NA" or redo the table to allow one (1) column per analyte. d. Revisit the tables to present the data in a manner that is easily understood. Redraw conclusions, if necessary.	The data tables have been revised to present the data in a manner that is easier to understand. The data has been split into two tables, one summarizing the arsenic data (Table 2-4) and the other summarizing the organochlorine pesticides (OCP) data (Table 2-5). Each data table is organized by sample location and then by depth of sample. Where individual sample locations were sampled over several events the data has been organized by depth and then chronologically. Additionally, information has been added to identify which analytes were not analyzed (NA) and which analytes were not detected (ND). Furthermore, figures have been revised to match the revisions in the tables. After each sample location identifier, information has been added in parentheses, indicating whether analytical results were above or below action levels at each sampling depth. Sample depths exceeding cleanup criteria are bolded in red [i.e. (**0, 2**, 4, 6)]. Figure 2-2 presents arsenic data, and Figure 2-3 presents OCP data. For the OCP data, the depth information provided in parentheses is bolded if any one of the OCP analytes exceeded action levels.
10.	Tables 2-4 to 2-7	Differentiate between, and clearly define "vertical" and "lateral" delineation. Based on Tables 2-4 to 2-7, there does not seem to be a clear distinction between the two. The parameters used to apparently differentiate the (i.e., sample depth in ft bgs) overlap or are the same. In summary tables for arsenic (i.e., Table 2-4 to 2-5), samples used to vertically delineate the site were taken from 2 to 10 ft bgs, while those taken to laterally delineate the site were taken from 0 to 4 feet bgs – these overlap. On the other hand, in summary tables for organochlorine pesticides (i.e., Tables 2-6 to 2-7), samples used to vertically delineate the site were taken from 0 to 4 ft bgs, while those taken to laterally delineate the site were taken from 0 to 4 feet bgs – these are the same.	See response to comment #9.
11.	Figure 2-3 and Table 1-1, Page 5	In Figure 2-3, DCA-07 denotes an exceedance of an action level, however, in Table 1-1, on Page 5, DCA-07 samples do not show any exceedances of arsenic. Revisit the figure to make sure that labels are correct.	Changed DCA-07 sample identification label from red to black in Figure 2-3 to reflect non-exceedance of arsenic as presented in Table 1-1. Note: sample icon depiction has been modified per comment #9 response.

CTO:	FRAC – CTO 0001	Document Title:	Draft Remediation Verification Report of May 2008, Removal Action at Former Drum Crushing Area, Former NAS Barbers Point, Oahu, Hawaii		
Date:	July 7, 2008	Review Organization:	Navy Region Hawaii	Reviewer(s):	Terence Tengan

NO.	REFERENCE	REVIEWER'S COMMENT	RESPONSE TO COMMENT
1.	Table 1-2, Page 1	Can we verify EAL for arsenic. According to HDOH EAL updated in November 2006, the EAL for arsenic is 20 mg/kg.	Project cleanup goal for arsenic in Table 1-2 on page 11 is correct in accordance with Table 1: Excavation Criteria for Contaminants of Concern found on page 7 of the Action Memorandum dated May 2005 for the Former Drum Crushing Area and Table 3-4 Reference Limits and Evaluation Table of the Revised Site Work Plan dated July 2007. Arsenic cleanup goal is 22 mg/kg based on 2004 EPA Residential noncancer endpoint PRG.
2.	Page 7 and 24 and Figure 2-3	If comment above is not valid, please disregard. Sample ID TR1454 for DCA-09 which was collected on 2/1/2002 (prior to November 2006) has a concentration (21.8 mg/kg) greater than the current EAL of 20 mg/kg.	Comment disregarded, arsenic cleanup goal is 22 mg/kg based on 2004 EPA Residential noncancer endpoint PRG.