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TECHNICAL MEMORANDUM FOR CONSTRUCTION DEBRIS PILE STUDY AT SEAPLANE LAGOON, ALAMEDA POINT ALAMEDA, CALIFORNIA

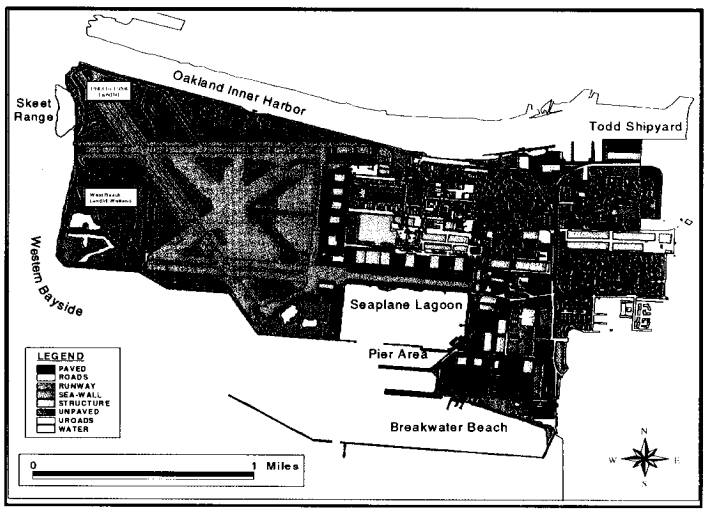

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TABLE OF CONTENTS

ABBREVIATIONS AND ACRONYMS iii

1.0 INTRODUCTION 1
- 1.1 Site Description and History 1
- 1.2 Task Description and Data Quality Objectives 1

2.0 METHODS 7
- 2.1 Data Collection 7
- 2.2 Laboratory Analysis 11
- 2.3 Data Analysis 11

3.0 RESULTS 14

4.0 SUMMARY AND RECOMMENDATIONS 19

5.0 REFERENCES 20

TABLES

Table 1. Data Quality Objectives for the Construction Debris Pile 5
Table 2. Sampling Station Information 8
Table 3. Summary of Analyses for Samples Collected from the Seaplane Lagoon Construction Debris Pile 10
Table 4. Methods for Laboratory Analysis 12
Table 5. Comparison of Measured Maximum Soil Concentrations to Relevant Soil Benchmarks 14
Table 6. Summary of Analytes Examined at the Debris Pile Relevant to Soil Benchmarks 18

FIGURES

Figure 1. Alameda Point Site Location Map 2
Figure 2. Location of Debris Piles Within Seaplane Lagoon (Site 17) 3
Figure 3. Debris Pile 1 (Facing West) 4
Figure 4. Debris Pile 2 (Facing West) 4
Figure 5. Sampling Locations at the Construction Debris Pile 7
Figure 6. Pit 1 (Left) and Pit 3 (Right) 8
Figure 7. Pit 2 (Left) and Pit 2 Excavated Material (Right) 9
Figure 8. Construction Debris Pile Exposed Along the Southwestern Shoreline of Debris Pile 2 10

APPENDICES

Appendix A: Chemical Analysis of 12 Construction Debris Pile Soil Samples

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ABBREVIATIONS AND ACRONYMS

AD	Acid Digestion
BDO	Battelle Duxbury Operations
bgs	Below Ground Surface
CAS	Columbia Analytical Services
COPC	Contaminants of Potential Concern
CVAAS	Cold Vapor Atomic Absorption Spectroscopy
CVAFS	Cold Vapor Atomic Fluorescence Spectrometry Detection
DCM	Dichloromethane
DDD	Dichlorodiphenyldichloroethane
DDE	Dichlorodiphenyldichloroethene
DDT	Dichlorodiphenyltrichloroethane
dGPS	Differential Global Positioning System
DQO	Data Quality Objective
ECD	Electron Capture Detector
EPA	U.S. Environmental Protection Agency
FPD	Flame Photometric Detector
ft	Feet
GC	Gas Chromatography
GFAA	Graphite Furnace Atomic Absorption
HGAA	Hydride Generation Atomic Absorption
ICP	Inductively-Coupled Plasma
IR	Installation Restoration
LVI	Large Volume Injections
MDL	Method Detection Limit
mg/kg	Milligram/Kilogram
MS	Mass Spectrometry
NA	Not Analyzed
NAS	Naval Air Station
NOAA	National Oceanic and Atmospheric Administration
NS&T	NOAA National Status and Trends Program
OES	Optical Emission Spectrometer
OU	Operable Unit
PAH	Polycyclic Aromatic Hydrocarbon
PCB	Polychlorinated Biphenyl
PRG	Preliminary Remediation Goal

P&T	Purge and trap
SIM	Select Ion Mode
ST	Shaker Table Extraction
SVOC	Semivolatile Organic Compound
TOC	Total Organic Carbon
TPH	Total Petroleum Hydrocarbons
VOC	Volatile Organic Compound

1.0 INTRODUCTION

This Technical Memorandum was prepared for the Base Realignment and Closure Program Management Office West under Contract No. N47408-01-D-8207 in support of the offshore evaluations at Seaplane Lagoon (Installation Restoration [IR] Site 17) at the former Naval Air Station (NAS) Alameda, currently called Alameda Point, in Alameda, California. The objectives of this Technical Memorandum are to summarize the results of an investigation conducted within a construction debris pile located along the northern shoreline of Site 17 and to provide recommendations regarding the need for additional work. The investigations summarized in this Memorandum were conducted in accordance with the approved Work Plan entitled *Offshore Sediment Study Work Plan at Oakland Inner Harbor, Pier Area, Todd Shipyard, and Western Bayside, Alameda Point, California* (Battelle et al., 2005).

1.1 Site Description and History

Site 17 is part of Operable Unit (OU) 4B, and one of 35 IR sites on the former NAS Alameda, now referred to as Alameda Point, in Alameda, California. The former NAS Alameda was sited on Alameda Point at the western tip of Alameda Island which is surrounded by San Francisco Bay and Oakland Inner Harbor. Alameda Point is located at the west end of the City of Alameda in Alameda County, California (Figure 1), adjacent to the City of Oakland, California.

Originally a tidal flat, Seaplane Lagoon was created on the southeastern corner of Alameda Point by dredging approximately 110-acres to a depth of 20 feet (ft). Presently, lagoon depths range from 12 to 20 ft. The lagoon is enclosed by land on the north, east, and west and bounded by a breakwater on the south. Four evenly spaced concrete ramps are present along the north shore. Construction debris from NAS Alameda was placed in two piles along the northern shoreline of the lagoon (Figure 2). The larger debris pile, labeled as Debris Pile 1, is located between the westernmost ramps while the other, labeled as Debris Pile 2, is located at the second ramp from the eastern shoreline. Debris Pile 1 is approximately 300 ft in length, 50 ft in width, and 6 ft above surface water (Figure 3). Debris Pile 2 (Figure 4) is approximately half the size, measuring approximately 100 ft in length and 25 feet wide.

The source of the debris material is unknown and there have been no previous investigations; therefore, there has been no determination as to whether the piles pose a risk to human health or the environment. Analytical results for sediment samples collected from Site 17 in the vicinity of the piles are comparable to results for samples from the center of the lagoon and do not indicate that the debris is an ongoing source of contaminants. However, visual inspection indicates that tidal action has eroded the edges of the piles, exposing debris material along the shoreline.

1.2 Task Description and Data Quality Objectives

The main objectives of this investigation were to identify the concentrations of potential contaminants in soils at Debris Pile 1, as described in the approved Work Plan (Battelle et al., 2005) and to provide a preliminary determination of the potential risk to human health and the environment. Data Quality Objectives (DQOs) were developed in accordance with the guidelines presented in U.S. Environmental Protection Agency's (EPA's) seven step DQO process (EPA, 2000) and are presented in Table 1. All tasks described were conducted in accordance with the Work Plan (Battelle et al., 2005).

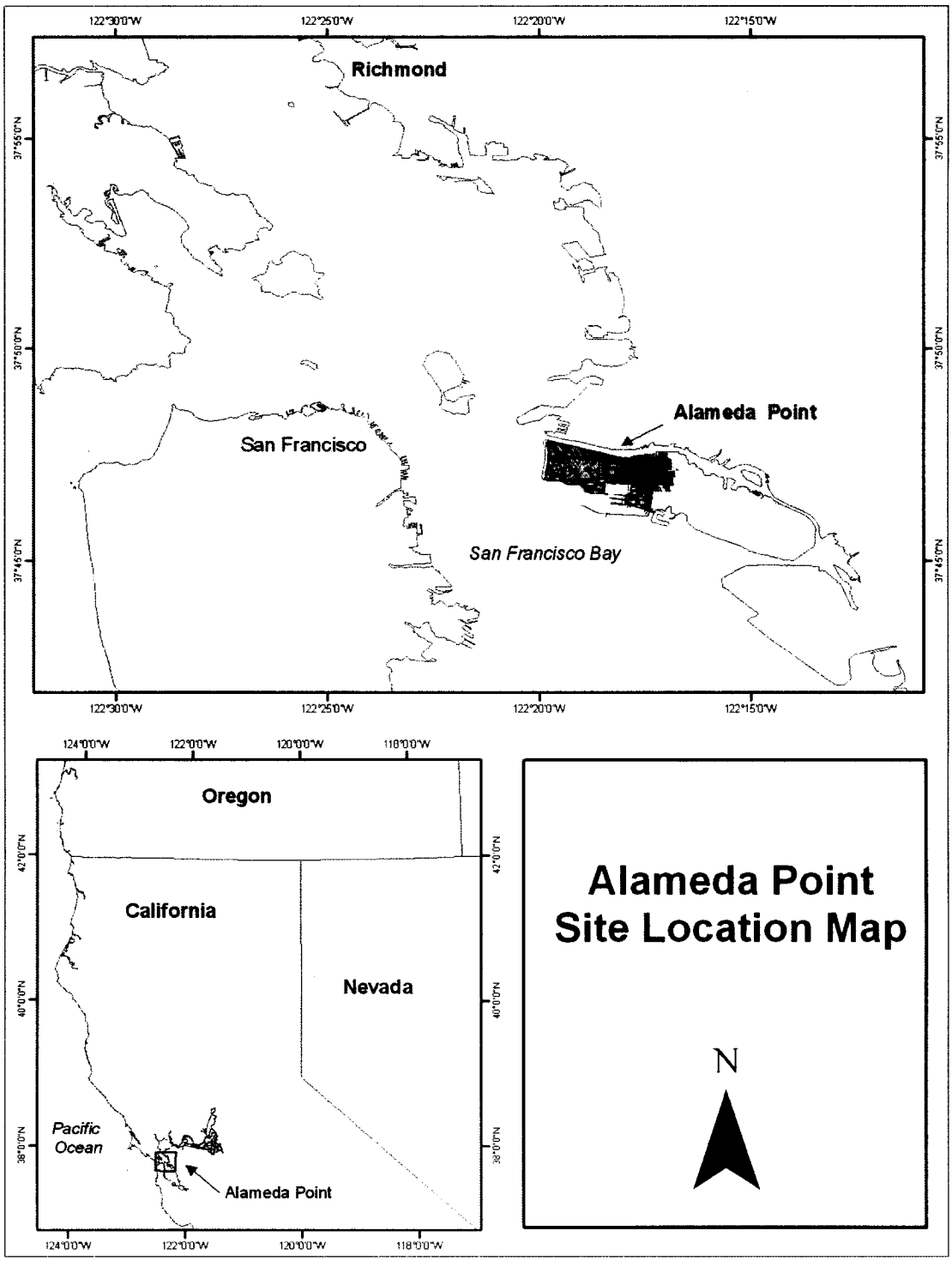

Figure 1. Alameda Point Site Location Map

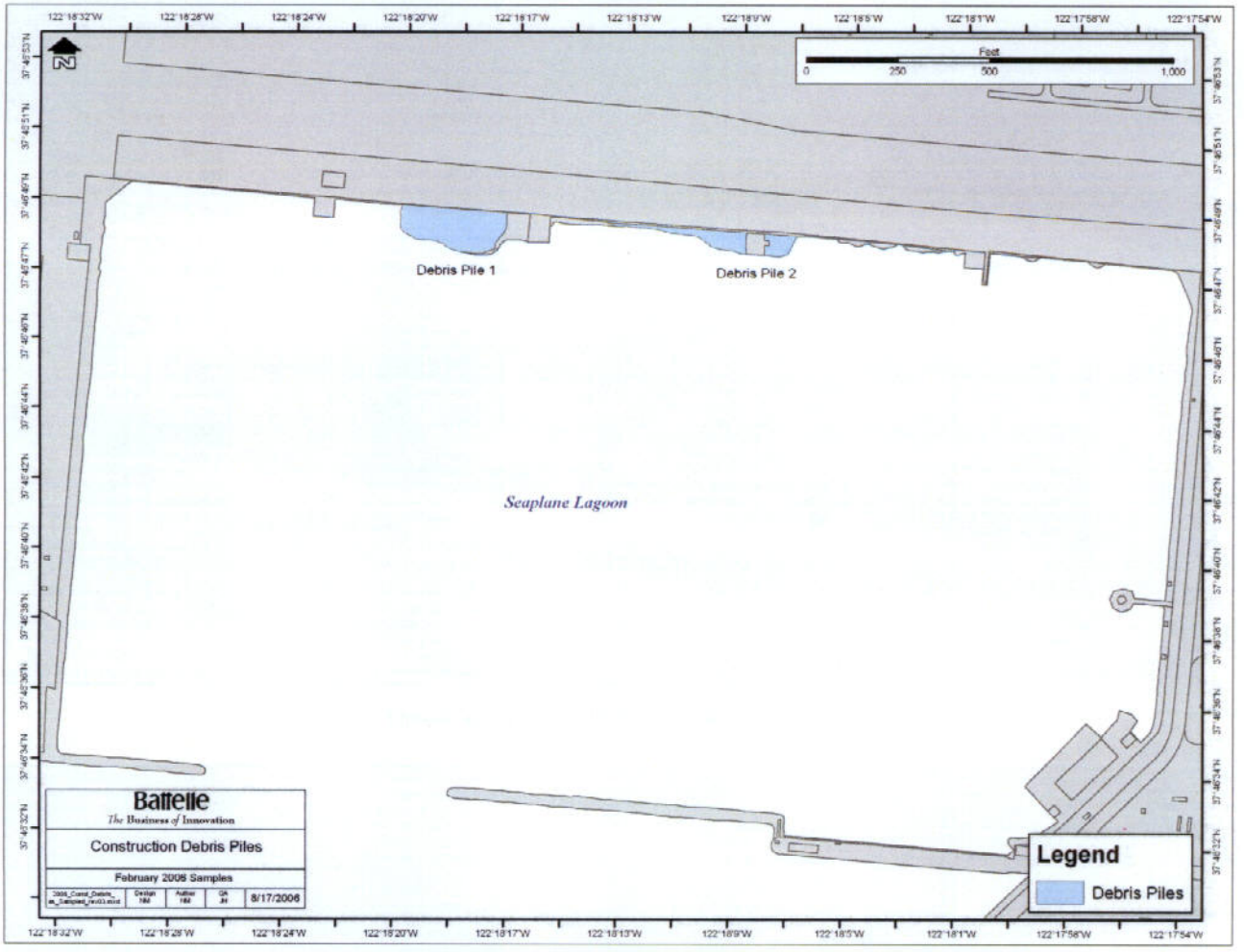

Figure 2. Location of Debris Piles Within Seaplane Lagoon (Site 17)

Figure 3. Debris Pile 1 (Facing West)

Figure 4. Debris Pile 2 (Facing West)

Table 1. Data Quality Objectives for the Construction Debris Pile

SOIL CHEMISTRY SAMPLING AT THE CONSTRUCTION DEBRIS PILE
STEP 1: State the Problem Seaplane Lagoon is located on the southeastern corner of Alameda Point. Four evenly spaced ramps are found along the north shore and a construction debris pile (Debris Pile 1) is located between the two most western ramps. Because there is no documented source of the materials placed in the debris pile, an initial field investigation is required to determine the type of materials deposited and the chemical mixtures within the pile in order to assess whether further analysis is required.
STEP 2: Identify the Decision Based on the initial site investigation, chemistry analysis (metals, polychlorinated biphenyls (PCBs), polycyclic aromatic hydrocarbons (PAHs), pesticides, volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), and total petroleum hydrocarbons (TPH) of the soil samples, and visual observations of the fill material, do the concentrations of inorganic and/or organic chemicals in the soil pose an unacceptable risk to human health or the environment based on comparisons to relevant screening levels (see Appendix A, Table A-10) and ambient background concentrations? This decision will be based on answers to the following subordinate questions: 1. Do the maximum observed concentrations in surface sediment exceed benchmark soil screening values? 2. Is the distribution of concentrations of any constituent significantly greater than ambient background concentration distributions?
STEP 3: Identify Inputs to the Decision 1. Dry weight soil contaminants of potential concern (COPC) concentrations in surface and subsurface samples. 2. Estimates of PCBs, PAHs, and pesticides, as well as individual constituents. 3. Station location, soil strata, and depth of sample below ground surface (bgs). 4. Regional and Alameda Point-specific soil background levels for metals and PAHs. 5. Screening levels for human health protection (EPA Region 9 preliminary remediation goals [PRGs]) and ecological protection (soil benchmarks). 6. Observations of the fill materials between each depth strata.
STEP 4: Define the Study Boundaries Study will represent the spatial boundaries of the construction debris pile, located between the two westernmost ramps on the northern boundary of Seaplane Lagoon. The pile extends approximately 300 ft in length, 50 ft in width, and 6 ft above surface water. Surface soil is defined as the top 1 ft and subsurface soil intervals will be sampled at 4 ft, 6 ft, and greater than 6 ft. Because additional source materials have not been added, there are no temporal boundaries.
STEP 5: Develop a Decision Rule 1. If the maximum concentrations of all COPCs in surface soil are lower than ecological or human health screening benchmarks, then conclude that there is acceptable risk and recommend no further action is required for the construction debris pile. If the maximum concentrations exceed screening thresholds in any location, then continue evaluation to determine the need for further assessment (see decision rule 2). 2. If the chemical concentrations exceed both screening criteria and ambient background levels, then additional samples may be collected to further define the lateral and vertical extent of contamination at the site. 3. If the initial soil chemistry data are significantly above screening levels and ambient background concentrations, conduct additional evaluation along the pile to further define the spatial and vertical extent of contamination; then perform a screening level risk assessment based on current and future site conditions.
STEP 6: Evaluate Decision Errors Data from the field investigation could over- or under-estimate potential risks to ecological and human receptors. In general, if risk is over-estimated (false positive), then a possible consequence is unnecessary additional fieldwork that may itself have detrimental impacts to the existing environment or expose subsurface contamination to the surface. If risk is under-estimated, a possible consequence is to fail to conclude that remedial action is required and the environment may continue to be detrimentally impacted in the future.

Table 1. Data Quality Objectives for the Construction Debris Pile (continued)

STEP 7: Optimize the Design for Obtaining Data
Because there is no prior knowledge as to the source of the construction material or the contents within the pile, it is recommended that three pits be dug equally spaced across the length of the pile to adequately determine the type and quantity of waste that was deposited. The pits will be excavated to a total depth of 6 ft and will be 9 ft in length. The width of the pit will be approximately the width of an excavation shovel. Lights will be used to illuminate the cut faces of the excavation and photographs will be taken from a variety of aspects to yield diverse perspectives of the debris. It is proposed that 12 samples be collected (4 samples from each pit) from the three test pits. A sample will be collected from each depth strata from 0 to 1 ft, 1 to 4 ft bgs, 4 to 6 ft bgs, and >6 ft.

2.0 METHODS

The data collection, analysis, and interpretation methods for the construction debris pile investigation are described below. All of these methods were implemented in accordance with the approach outlined in the approved Work Plan (Battelle et al., 2005).

2.1 Data Collection

Twelve unique soil samples were collected on February 22, 2006 from three text pits excavated at the construction debris pile (Figure 5). The pits were equally spaced through the debris pile and samples were collected at four intervals: surface (0-1 ft); 1-4 ft; 4-6 ft; and from 6-6.5 ft. Duplicate soil samples were collected from one depth interval in two pits, providing a total of 14 soil samples (Table 2).

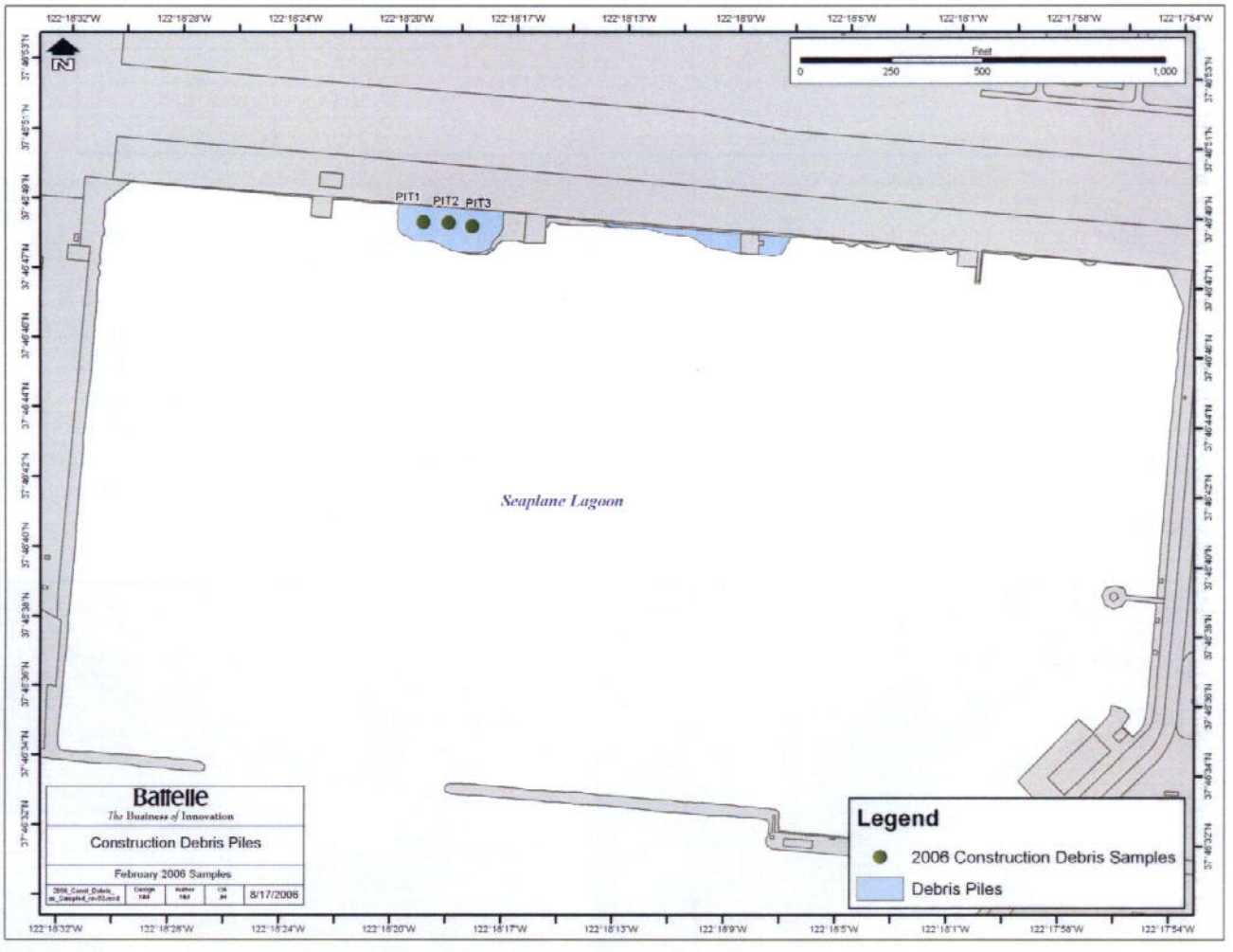

Figure 5. Sampling Locations at the Construction Debris Pile

Table 2. Sampling Station Information

Station ID	Latitude North (WGS 1984)	Longitude West (WGS 1984)	Date	Time (PST)	Depth from surface (ft)
PIT 1	37.780247	-122.305456	22-Feb-06	0958	0-1
				1019	1-4
				1044	4-6
				1115	6-6.5
PIT 2	37.780247	-122.305218	22-Feb-06	1615	0-1
				1555	1-4
				1450	4-6
				1420	6-6.5
PIT 3	37.780224	-122.304994	22-Feb-06	1220	0-1
				1330	1-4
				1305	4-6
				1240	6-6.5

Each of the test pits was dug and filled with a backhoe. The pits were approximately nine feet long, six and one half feet deep, and three feet wide. During the excavation process, sampling operations were documented with digital still photographs, some of which are presented below in Figures 6 through 8. Pit 2 and Pit 3 required multiple attempts to avoid large debris (concrete primarily) and reach the target depth of 6.5 ft. Material observed on the edges of the excavated pits was primarily hard packed soil (Figure 6; Pits 1 and 3) with primarily concrete and masonry debris. Evidence of construction debris is shown in Figure 7 (Pit 2). Observed debris material included concrete, masonry (e.g. pieces of bricks), asphalt, metal, and plastic. Debris was most obvious along the shore and edges of the debris pile were the edges are exposed to tidal action and erosion has removed the soil revealing whole pieces of construction debris material (Figure 8).

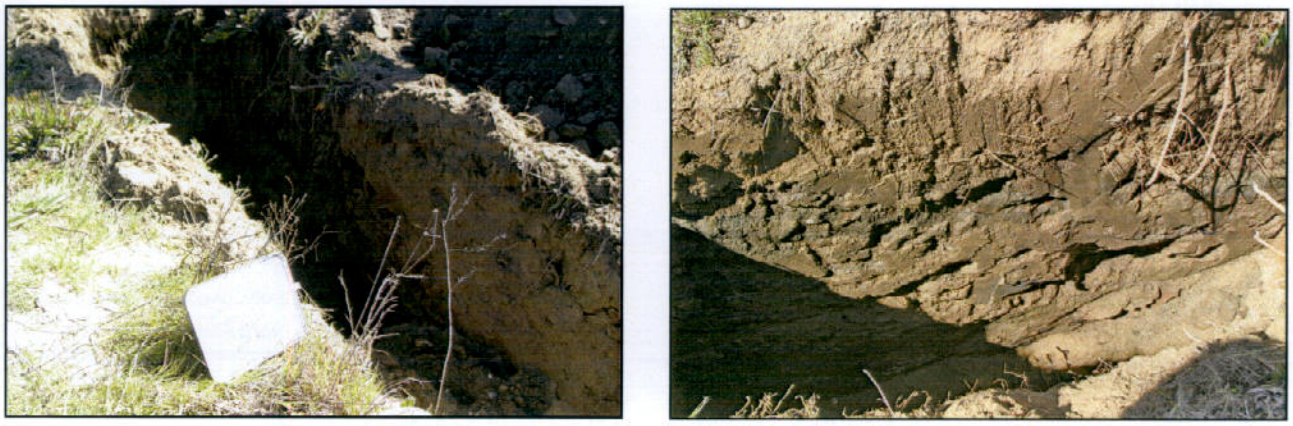

Figure 6. Pit 1 (Left) and Pit 3 (Right)

Figure 7. Pit 2 (Left) and Pit 2 Excavated Material (Right)

After each pit was excavated, soil was collected with a pre-cleaned stainless steel spoon from vertical or horizontal faces exposed by the backhoe. Soil was placed into a pre-cleaned stainless steel bowl. Prior to homogenization, samples for volatile compounds were collected. After collecting the volatile soil sample, the soil was homogenized to a uniform color and texture and distributed to the appropriate sample containers using a pre-cleaned stainless steel spoon. Soil samples were shipped with chain of custody forms to the laboratories for analysis of VOCs, SVOCs (including PAHs), TPH, PCBs, pesticides, metals, and tributyltin. The summary of samples collected and aliquots prepared for chemical analysis is presented in Table 3. A more detailed description of the field collection activities is provided in the *Field Sampling Summary Report for Construction Debris Pile Sampling at Seaplane Lagoon, Alameda Point, California*. (Battelle, 2006).

Figure 8. Construction Debris Pile Exposed Along the Southwestern Shoreline of Debris Pile 2

Table 3. Summary of Analyses for Samples Collected from the Seaplane Lagoon Construction Debris Pile

Station	Battelle Sample ID	Sections for Analysis (FT)	VOCs	SVOC (incl. PAH)	TPH	Metals	Tributyltin	PCB/Pesticides	Archive	Notes
PIT1	FAA-001	0-1	✓	✓	✓	✓	✓	✓	✓	
PIT1	FAA-002	1-4	✓	✓	✓	✓	✓	✓	✓	
PIT1	FAA-003	4-6	✓	✓	✓	✓	✓	✓	✓	
PIT1	FAA-004	6-6.5	✓	✓	✓	✓	✓	✓	✓	
PIT2	FAA-010	0-1	✓	✓	✓	✓	✓	✓	✓	
PIT2	FAA-011	0-1	✓	✓	✓	✓	✓	✓	✓	Duplicate
PIT2	FAA-012	1-4	✓	✓	✓	✓	✓	✓	✓	
PIT2	FAA-013	4-6	✓	✓	✓	✓	✓	✓	✓	
PIT2	FAA-014	6-6.5	✓	✓	✓	✓	✓	✓	✓	
PIT3	FAA-005	0-1	✓	✓	✓	✓	✓	✓	✓	
PIT3	FAA-006	1-4	✓	✓	✓	✓	✓	✓	✓	
PIT3	FAA-007	1-4	✓	✓	✓	✓	✓	✓	✓	Duplicate
PIT3	FAA-008	4-6	✓	✓	✓	✓	✓	✓	✓	
PIT3	FAA-009	6-6.5	✓	✓	✓	✓	✓	✓	✓	
Equipment Blank	FAA-015	NA	✓	✓	✓	✓	✓	✓	✓	
Trip Blank	FAA-016	NA	✓							

NA=Not analyzed

In addition to the collection of soil samples, the boundaries of the debris pile were recorded with a differential global positioning system (dGPS) during the sampling activities to develop a more accurate estimate of its size and shape. Based on the observations made, the pile has a vertical edge (~3 ft high) on the southern edge where erosion has occurred from tidal action (see Figures 3 and 9). On the western and eastern sides, the debris pile edge tapers essentially to grade following the slope of the seaplane ramps.

2.2 Laboratory Analysis

The soil samples collected from the debris pile were analyzed by Columbia Analytical Services for VOCs, SVOCs (including PAHs), TPH, metals, and tributyltin. Battelle Duxbury Operations analyzed the samples for PCBs and pesticides. The methods used for the analysis of soil samples, and the corresponding equipment blanks, are presented in Table 4.

2.3 Data Analysis

The primary focus of the data evaluation was to characterize the nature of the contaminants within the debris pile and to determine if there is a potential threat to human health and the environment. For the purpose of evaluating potential risks, screening level soil benchmark values were compiled. The values selected include risk-based human health and ecological benchmark values that represent safe concentrations based on assumed exposures to soil as well as site-specific background concentrations derived for Alameda Point. Specifically, maximum concentrations were compared to the following:

- Relevant human health benchmarks for soil
  - EPA Region 9 PRGs (EPA 2004)
- Relevant ecologically-based soil benchmarks
  - EPA Region 5 Eco-screen levels (EPA 1995)
- Site-Specific background soil concentrations
  - Background soil data from the Pink dataset for Alameda Point (TtEMI, 2001)

To enable comparisons to several of the benchmark values, it was necessary to generate summations representing standard chemical groups. Not all summations were derived using the exact same methods used to develop the benchmark values; however, they are as close as practical given the benchmark information available. Two rules were followed for summations when individual analytes were not detected: 1) if at least one of the summed analytes was present in a sample, non-detects were give a value of zero and 2) if no analytes were detected, the highest method detection limit (MDL) in the analyte set was used to represent the total. Summations were calculated for three analyte sets as follow:

- Xylenes (Total) defined as the sum of m,p,-Xylenes and o-Xylene
- Total DDTs defined as the sum of 2,4'-DDD, 2,4'-DDE, and 2,4'-DDT[1]
- Total PCB defined as 2 times the sum of 18 National Oceanic and Atmospheric Administration (NOAA) National Status and Trends Program (NS&T) congeners
  - Includes: IUPAC PCBs 8, 18, 28, 44, 52, 66, 101, 105, 118, 128, 138, 153, 170, 180, 187, 195, 206, and 209.

[1] DDT= Dichlorodiphenyltrichloroethane; DDD= Dichlorodiphenyldichloroethane; DDE= Dichlorodiphenyldichloroethene

Table 4. Methods for Laboratory Analysis

Parameter	Base Method	Lab	Laboratory SOP	Description[a]
		Soil		
VOC	SW-846 8260B	CAS	VOC-8260B	P&T GC/MS
SVOC PAHs	SW-846 8270C	CAS	SOC-8270s; EXT-3541	DCM Extraction GC/MS SIM
Tributyltin	Krone et al. (1989)	CAS	SOC-BUTYL; SOC-OSWT	GC/FPD
TPH(C_8 - C_{25})	SW-846 8015M	CAS	PET-SVF; PET-GRO	GC
Metals	EPA Methods 6010B/200.8	CAS	MET-ICP; MET-ICPMS; MET-3050	Acid digestion ICP-OES; ICP-MS
Metals (Se)	EPA Methods 7742	CAS	MET-7742	Acid digestion HGAA
Mercury (Hg)	EPA Method 1631	CAS	MET-1631	P&T-CVAFS
Grain size	ASTM D-422M/PSEP	CAS	GEN-PSP	Sieve /Pipette
TOC	ASTM D4129-82M/PSEP	CAS	GEN-ASTM	Acid digestion TOC analyzer
Pesticides PCB Congeners	Lauenstein and Cantillo (1993)[b]	BDO	5-192	ST GC/ECD
Pesticides/PCBs	SW-846 Shaker table/8081A/8082	BDO	5-128	DCM Extraction GC/ECD
		Water (Equipment Blanks)		
VOC	SW-846 8260B	CAS	VOC8260B	Purge & Trap GC/MS
SVOC PAHs	SW-846 8270C	CAS	SOC-8270L	DCM extraction LVI-GC/MS
Tributyltin	Krone et al. (1989)	CAS	SOC-BUTYL; SOC-OSWT	GC/FPD
TPH(C_8 - C_{25})	SW-846 8015B	CAS	PET-SVF; PET-GRO	GC
Metals (GFAA)	SW-846 7000	CAS	MET-GFAA; MET-DIG	GFAA; Acid Digestion
Metals (ICP-MS)	EPA Method 200.8	CAS	MET-ICPMS; MET-DIG	ICP-MS; Acid Digestion
Metals (Se, As)	EPA Method 7742	CAS	MET-7742	Acid digestion HGAA
Mercury (Hg)	SW-846 7470A	CAS	MET-7470A	CVAAS
PCBs/ Pesticides	SW-846 3510/8081A/8082	BDO	5-128	DCM Extraction GC/ECD

[a]Description:
AD = Acid digestion
CVAAS= Cold Vapor Atomic Absorption Spectroscopy
CVAFS= Cold Vapor Atomic Fluorescence Spectrometry Detection
DCM=Dichloromethane
ECD=Electron Capture Detector
FPD= Flame Photometric Detector
GC= Gas Chromatography
GFAA=Graphite Furnace Atomic Absorption
HGAA=Hydride Generation Atomic Absorption
ICP= Inductively-coupled plasma
LVI=Large Volume Injections
MS=Mass Spectrometry
OES=Optical Emission Spectrometer
P&T=Purge and Trap
SIM=Select Ion Mode
ST= Shaker table extraction
TOC=Total Organic Carbon

[b]Low-level NOAA NS&T methods are selected to achieve the required study detection limits.

Quality assurance data (e.g., field replicates, laboratory duplicates, laboratory spikes) are not included in the data evaluation process. As a conservative measure intended to include all possible data, soil concentrations qualified by the analytical laboratory as other than "U" are used in the data evaluation process and considered valid values. "U" qualified data are considered as non-detected results and are give a value of ½ the MDL for comparisons. All comparisons and manipulation of analytical chemical results were performed using SAS® version 9.1 running in batch mode under Microsoft Windows XP. COPC analytical data were provided by Battelle Duxbury Operations (BDO) and Columbia Analytical Services (CAS) as standardized electronic data deliverables.

3.0 RESULTS

Analytical results for all samples evaluated are presented in Appendix A. A comparison of the maximum contaminations for each analyte (or analyte group) by excavation pit to its associated benchmark values are presented in Table 5. Soil concentrations that exceed the human health risk-based benchmark (EPA, 2004) are highlighted in bold type face while those that exceed the ecological risk-based benchmark are italicized. Based on this comparison, the majority of the metals, eight SVOCs, three pesticides, and Total PCBs exceeded the ecological benchmarks in one or more pits. Arsenic and five of the high-molecular-weight PAHs exceeded the human health benchmark in one or more of the pits.

Table 6 provides a summary of the benchmark exceedances by analyte. The ecologically-based screening values were exceeded for most chemicals in almost all of the soil samples evaluated. Nine chemicals had concentrations in one or more samples that exceeded the human health benchmark. The Alameda Point background soil concentrations were exceeded for all metals in at least one sample.

Table 5. Comparison of Measured Maximum Soil Concentrations to Relevant Soil Benchmarks

Analyte	#Detected / #Evaluated			Maximum Value in Pit			Benchmark Values		
	Pit 1	Pit 2	Pit 3	Pit 1	Pit 2	Pit 3	Human Health[a]	Ecological[b]	Ambient[e]
Trace Metals (milligram/kilogram [mg/kg] dry wt.)									
Antimony	4/4	4/4	4/4	*11.6*	*104*	*69.4*	410[c]	0.27	9.5
Arsenic	4/4	4/4	4/4	**13.2**	***52.6***	***22.6***	1.6[c]	18	9.144
Cadmium	4/4	4/4	4/4	*2.19*	*9.95*	*1.28*	450[c]	0.36	1.716
Chromium	4/4	4/4	4/4	***477***	***645***	***891***	64	0.4	54.84
Copper	4/4	4/4	4/4	*868*	*2610*	*2560*	41000	5.4	39.14
Lead	4/4	4/4	4/4	*696*	***6160***	***1130***	800[c]	11	37.66
Mercury	4/4	4/4	4/4	*27.1*	*15.1*	*12.8*	62	0.1	0.52175
Nickel	4/4	4/4	4/4	*222*	*412*	*588*	20000	13.6	55.72
Selenium	2/4	4/4	4/4	*0.3*	*1*	*0.5*	5100	0.028	1.78
Silver	4/4	4/4	4/4	0.195	1.25	1.24	5100	4.04	2.216
Zinc	4/4	4/4	4/4	*1190*	*9020*	*5140*	100000	6.62	67.48
Low-Molecular-Weight PAHs (mg/kg dry wt.)									
2-Methylnaphthalene	4/4	4/4	4/4	0.04	0.47	1.7	NA	3.24	NA
Acenaphthene	4/4	4/4	4/4	0.022	1.1	0.4	29000	682	NA
Acenaphthylene	4/4	4/4	3/4	0.053	0.11	0.065	NA	682	NA
Anthracene	4/4	4/4	4/4	0.14	2.4	0.44	100000	1480	NA
Fluorene	4/4	4/4	4/4	0.026	1.1	0.69	26000	122	NA
Naphthalene	4/4	4/4	4/4	0.072	1	0.5	190	0.099	NA
Phenanthrene	4/4	4/4	4/4	0.53	8.2	2.4	NA	45.7	NA
High-Molecular-Weight PAHs (mg/kg dry wt.)									
Benz(a)anthracene	4/4	4/4	4/4	0.7	**5.7**	1.2	2.1	5.21	NA
Benzo(a)pyrene	4/4	4/4	4/4	**0.83**	**5.5**	**1.4**	0.21	1.52	NA
Benzo(b)fluoranthene	4/4	4/4	4/4	0.79	**4.5**	1.3	2.1	59.8	NA
Benzo(g,h,i)perylene	4/4	4/4	4/4	0.86	3.1	1.1	NA	119	NA
Benzo(k)fluoranthene	4/4	4/4	4/4	0.66	4.3	1.1	21	148	NA
Chrysene	4/4	4/4	4/4	0.87	6.7	1.8	210	4.73	NA

Table 5. Comparison of Measured Maximum Soil Concentrations to Relevant Soil Benchmarks, Continued

Analyte	#Detected / #Evaluated			Maximum Value in Pit			Human Health[a]	Ecological[b]	Ambient[c]
	Pit 1	Pit 2	Pit 3	Pit 1	Pit 2	Pit 3			
Dibenz(a,h)anthracene	4/4	4/4	4/4	0.2	**0.95**	**0.32**	0.21	18.4	NA
Fluoranthene	4/4	4/4	4/4	1.3	11	2.4	22000	122	NA
Indeno(1,2,3-c,d)pyrene	4/4	4/4	4/4	0.84	**3.4**	1.1	2.1	109	NA
Pyrene	4/4	4/4	4/4	1.2	9.5	2.5	29000	78.5	NA
SVOCs (mg/kg dry wt.)									
1,2,4-Trichlorobenzene	0/4	0/4	0/4	0.0165	0.1	0.0425	220	11.1	NA
1,2-Dichlorobenzene	0/4	1/4	2/4	0.0145	0.24	0.18	600	2.96	NA
1,3-Dichlorobenzene	0/4	0/4	0/4	0.0175	0.105	0.0455	600	37.7	NA
1,4-Dichlorobenzene	0/4	0/4	0/4	0.021	0.125	0.055	7.9	0.546	NA
2,4,6-Trichlorophenol	0/4	0/4	0/4	0.02	0.12	0.055	62	9.94	NA
2,4-Dichlorophenol	0/4	0/4	0/4	0.02	0.12	0.055	1800	87.5	NA
2,4-Dimethylphenol	0/4	0/4	0/4	0.065	0.355	0.16	12000	0.01	NA
2,4-Dinitrophenol	0/4	0/4	0/4	0.395	2.35	1.05	1200	0.0609	NA
2,4-Dinitrotoluene	0/4	0/4	0/4	0.031	0.185	0.08	1200	1.28	NA
2,6-Dinitrotoluene	0/4	0/4	0/4	0.031	*0.185*	*0.08*	620	0.0328	NA
2-Chloronaphthalene	0/4	0/4	0/4	*0.0395*	*0.235*	*0.105*	NA	0.0122	NA
2-Chlorophenol	0/4	0/4	0/4	0.019	0.11	0.0485	240	0.243	NA
2-Methyl-4,6-dinitrophenol	0/4	0/4	0/4	0.019	0.11	0.0485	62	0.144	NA
2-Methylphenol	0/4	0/4	0/4	0.0375	0.22	0.1	31000	40.4	NA
2-Nitroaniline	0/4	0/4	0/4	0.03	0.175	0.08	1800	74.1	NA
2-Nitrophenol	0/4	0/4	0/4	0.0285	0.17	0.075	NA	1.6	NA
3,3'-Dichlorobenzidine	0/4	0/4	0/4	0.0405	0.24	0.105	3.8	0.646	NA
3-Nitroaniline	0/4	0/4	0/4	0.0285	0.17	0.075	82	3.16	NA
4-Bromophenyl Phenyl Ether	0/4	0/4	0/4	0.0155	0.095	0.04	NA	NA	NA
4-Chloro-3-methylphenol	0/4	0/4	0/4	0.023	0.14	0.06	NA	7.95	NA
4-Chloroaniline	0/4	0/4	0/4	0.023	0.14	0.06	2500	1.1	NA
4-Chlorophenyl Phenyl Ether	0/4	0/4	0/4	0.022	0.13	0.06	NA	NA	NA
4-Methylphenol	0/4	0/4	0/4	0.032	0.19	0.085	3100	163	NA
4-Nitroaniline	0/4	0/4	0/4	0.0375	0.22	0.1	82	21.9	NA
4-Nitrophenol	0/4	0/4	0/4	0.33	1.95	0.85	NA	5.12	NA
Azobenzene	0/4	0/4	0/4	0.0265	*0.155*	*0.07*	16	0.04	NA
Benzoic Acid	0/4	0/4	0/4	1.05	6.5	2.75	100000	NA	NA
Benzyl Alcohol	0/4	0/4	0/4	0.0405	0.24	0.105	100000	65.8	NA
Bis (2-chloroethoxy) methane	0/4	0/4	0/4	0.0145	0.085	0.037	NA	0.302	NA
Bis (2-chloroethyl)Ether	0/4	0/4	0/4	0.0265	0.155	0.07	0.58	23.7	NA
Bis (2-chloroisopropyl)Ether	0/4	0/4	0/4	0.0135	0.08	0.034	7.4	19.9	NA
Bis (2-ethylhexyl) Phthalate	4/4	4/4	4/4	0.099	*1.1*	0.28	120	0.925	NA
Butyl Benzyl Phthalate	1/4	0/4	0/4	0.0165	0.1	0.0425	100000	0.239	NA

Table 5. Comparison of Measured Maximum Soil Concentrations to Relevant Soil Benchmarks, Continued

Analyte	#Detected / #Evaluated			Maximum Value in Pit			Human Health[a]	Ecological[b]	Ambient[c]
	Pit 1	Pit 2	Pit 3	Pit 1	Pit 2	Pit 3			
Carbazole	4/4	3/4	3/4	0.036	0.63	0.17	86	NA	NA
Dibenzofuran	3/4	3/4	1/4	0.036	0.25	0.042	1600	NA	NA
Diethyl Phthalate	0/4	0/4	0/4	0.0385	0.23	0.1	100000	24.8	NA
Dimethyl Phthalate	0/4	0/4	0/4	0.02	0.12	0.055	100000	734	NA
Di-n-butyl Phthalate	4/4	0/4	2/4	*0.21*	*0.17*	*0.51*	62000	0.15	NA
Di-n-octyl Phthalate	0/4	0/4	0/4	0.0135	0.08	0.034	25000	709	NA
Hexachlorobenzene	0/4	0/4	0/4	0.023	0.14	0.06	1.1	0.199	NA
Hexachlorobutadiene	0/4	0/4	0/4	0.0155	*0.095*	*0.04*	22	0.0398	NA
Hexachlorocyclopentadiene	0/4	0/4	0/4	0.165	*1*	0.425	3700	0.755	NA
Hexachloroethane	0/4	0/4	0/4	0.0245	0.145	0.065	120	0.596	NA
Isophorone	1/4	0/4	0/4	0.0175	0.105	0.0455	510	139	NA
Nitrobenzene	0/4	0/4	0/4	0.022	0.13	0.06	100	1.31	NA
N-Nitroso di-n-propylamine	0/4	0/4	0/4	0.035	0.21	0.095	0.25	0.544	NA
N-Nitrosodiphenylamine	0/4	0/4	0/4	0.0245	0.145	0.065	350	0.545	NA
Pentachlorophenol (PCP)	0/4	0/4	0/4	0.095	*0.55*	*0.245*	9	0.119	NA
Phenol	2/4	0/4	1/4	0.056	0.125	0.59	100000	120	NA
VOCs (mg/kg dry wt.)									
1,1-Dichloroethane	0/4	0/4	0/4	0.0006	0.00055	0.00045	1700	20.1	NA
Benzene	2/4	3/4	2/4	0.0033	0.0057	0.0018	1.4	0.255	NA
Chlorobenzene	0/4	0/4	0/4	0.00055	0.000455	0.0004	530	13.1	NA
cis-1,2-Dichloroethane	0/4	0/4	0/4	0.00065	0.00055	0.00047	0.6	21.2	NA
Dichlorodifluoromethane	0/4	0/4	0/4	0.00055	0.000455	0.0004	310	39.5	NA
Ethylbenzene	1/4	3/4	1/4	0.00093	0.0065	0.0017	400	5.16	NA
Toluene	2/4	3/4	0/4	0.0042	0.0076	0.00048	520	5.45	NA
Vinyl chloride	0/4	0/4	0/4	0.00046	0.0004	0.00036	0.75	0.646	NA
Xylenes (Total)	4/4	4/4	4/4	0.0023	0.031	0.006	420	10	NA
Pesticides (mg/kg dry wt.)									
2,4'-DDD	4/4	4/4	3/4	0.01534	0.06323	0.03199	10	NA	NA
2,4'-DDE	1/4	2/4	0/4	0.02837	0.02439	0.00002	7	NA	NA
2,4'-DDT	4/4	4/4	3/4	0.02087	0.04037	0.01191	7	NA	NA
4,4'-DDD	4/4	4/4	3/4	0.02471	0.02658	0.04564	10	0.758	NA
4,4'-DDE	4/4	4/4	4/4	0.01509	0.01987	0.0166	7	0.596	NA
4,4'-DDT	4/4	4/4	4/4	*0.04144*	*0.00565*	*0.0135*	7	0.0035	NA
Aldrin	0/4	0/4	0/4	2.5E-05	0.000025	0.00002	0.1	0.00332	NA
alpha-BHC	0/4	0/4	1/4	5.5E-05	0.00006	0.00909	0.36	0.0994	NA
alpha-Chlordane	4/4	4/4	2/4	0.00117	0.00183	0.00019	6.5	0.224	NA
Dieldrin	4/4	2/4	4/4	*0.00696*	*0.00312*	*0.01346*	0.11	0.00238	NA
Endosulfan I	0/4	0/4	0/4	0.00003	0.000035	0.00003	3700	0.119	NA
Endosulfan II	0/4	0/4	0/4	0.00003	0.00003	0.00003	NA	0.119	NA
Endosulfan sulfate	0/4	0/4	0/4	1.5E-05	0.000015	1.5E-05	NA	0.0358	NA

Table 5. Comparison of Measured Maximum Soil Concentrations to Relevant Soil Benchmarks, Continued

Analyte	#Detected / #Evaluated			Maximum Value in Pit			Human Health[a]	Ecological[b]	Ambient[e]
	Pit 1	Pit 2	Pit 3	Pit 1	Pit 2	Pit 3			
Endrin	0/4	0/4	0/4	2.5E-05	0.000025	2.5E-05	180	0.0101	NA
Endrin Aldehyde	1/4	0/4	0/4	0.00039	0.00003	0.00003	NA	0.0105	NA
gamma-BHC (Lindane)	0/4	0/4	2/4	0.00002	0.00002	0.00008	1.7	0.005	NA
gamma-Chlordane	4/4	3/4	1/4	0.00135	0.00074	0.00026	6.5	0.224	NA
Heptachlor	0/4	2/4	1/4	0.00002	*0.0047*	*0.0013*	0.38	0.00598	NA
Heptachlor Epoxide	0/4	0/4	0/4	0.00002	0.00002	0.00002	0.19	0.152	NA
Total DDTs	4/4	4/4	4/4	0.05302	0.11958	0.04390	NA	0.0035	NA
PCB (mg/kg dry wt.)									
Total PCBs	4/4	4/4	4/4	***2.45248***	***4.34736***	***4.85704***	0.74	0.371[d]	
Butyltins (mg/kg dry wt.)									
Tributyltin	4/4	4/4	2/4	0.011	0.00044	0.0015	180		

Bold = Concentration exceeds the human health benchmark.
Italics = Concentration exceeds the ecological health benchmark.
NA = Benchmark not available.

[a] PRG industrial - preliminary remediation goals for an industrial exposure scenario from EPA Region 9 (EPA, 2004).
[b] All values from obtained from EPA Region 5 unless otherwise noted (EPA, 1995).
[c] EPA, 2005.
[d] Efroymson et al., 1997.
e 95th quartile estimated for all background samples from the "Pink" dataset for Alameda Point using a nonparametric approach, based on rank ordering of the data (reported values used for all censored data) (TtEMI, 2001).

Table 6. Summary of Analytes Examined at the Debris Pile Relevant to Soil Benchmarks

Major Group	Analyte	Analyte Greater than Benchmark (No. Samples)[a]		
		PRG	Eco-Screen	Ambient
Trace Metals	Antimony		Yes (12)	Yes (7)
	Arsenic	Yes (12)	Yes (5)	Yes (9)
	Cadmium		Yes (11)	Yes (5)
	Chromium	Yes (10)	Yes (12)	Yes (11)
	Copper		Yes (12)	Yes (10)
	Lead	Yes (5)	Yes (12)	Yes (11)
	Mercury		Yes (11)	Yes (9)
	Nickel		Yes (12)	Yes (10)
	Selenium		Yes (12)	
	Zinc		Yes (12)	Yes (11)
Low-Molecular-Weight PAHs	Naphthalene		Yes (4)	
High-Molecular-Weight PAHs	Benz(a)anthracene	Yes (1)	Yes (1)	
	Benzo(a)pyrene	Yes (9)	Yes (2)	
	Benzo(b)fluoranthene	Yes (1)		
	Chrysene		Yes (1)	
	Dibenz(a,h)anthracene	Yes (4)		
	Indeno(1,2,3-c,d)pyrene	Yes (1)		
SVOCs	2,4-Dimethylphenol		Yes (12)	
	2,4-Dinitrophenol		Yes (12)	
	2,6-Dinitrotoluene		Yes (8)	
	2-Chloronaphthalene		Yes (12)	
	Azobenzene		Yes (8)	
	Bis (2-ethylhexyl) Phthalate		Yes (1)	
	Di-n-butyl Phthalate		Yes (7)	
	Hexachlorobutadiene		Yes (8)	
	Hexachlorocyclopentadiene		Yes (4)	
	Pentachlorophenol (PCP)		Yes (8)	
Pesticides	4,4'-DDT		Yes (7)	
	Dieldrin		Yes (6)	
	Total DDTs		Yes (10)	
PCB	Total PCBs	Yes (8)	Yes (9)	

[a] Numbers in parentheses indicate the number of samples in which the chemical exceeds the benchmark

4.0 SUMMARY AND RECOMMENDATIONS

The main objective of this investigation was to provide a preliminary characterization of contamination within the construction debris material. In addressing this objective it was first necessary to determine if concentrations of inorganic and/or organic chemicals in the soil pose an unacceptable risk to human or the environment based on comparisons to relevant screening levels and background concentrations. A one day field sampling project was thus conducted to ascertain the type of materials deposited and the chemical mixtures within the pile in order to assess whether further analysis would be required. Observations taken during the sampling event indicated that Debris Pile 1 is comprised of a mixture of hard packed soil and concrete, masonry, asphalt, metal and plastic debris. It was noted that the southern edge of the pile is subject to erosion from tidal action, potentially transporting materials into Seaplane Lagoon.

Comparison of soil concentrations to available risk-based soil benchmark values indicates that soils within the debris pile pose a potential threat to human health and the environment in both surface samples and in samples at depths. In addition, concentrations of metals exceed the site-specific ambient concentrations developed for NAS Alameda ("Pink" dataset reported by TtEMI, 2001). PCB concentrations in one or more samples from each pit also exceeded the remedial goals outlined in the Site 17 Record of Decision (ROD).

Based on the results of this preliminary evaluation, further investigation or response action is recommended.

5.0 REFERENCES

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APPENDIX A
CHEMICAL ANALYSIS OF 12 CONSTRUCTION DEBRIS PILE SOIL SAMPLES

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The following pages present chemical analytical data for 12 soil samples collected and processed in support of the Alameda Construction Debris Pile investigation. Information is provided separately for each exploratory pit (1-3) and vertical strata (0-1, 1-4, 4-6, 6-6.5 feet) and includes sample IDs. Where analytes were not detected (Qual = U), the MDL is provided as the Result concentration. All concentrations are in milligram/kilogram (mg/kg) dry weight. Data that have been qualified by the reporting laboratory are indicated with a single letter value in the Qual column. Qual definitions are as follows:

Qual	Description
A	Indicates that the TIC is a suspected aldol_condensation product
B	Analyte found in both sample and associated blank. The "B" will be reported on the result associated with the field samples, not the blank
C	Presence confirmed by GC/MS (Pesticides only)
D	Dilution run. Initial run outside linear range of instrument
E	Estimate, result outside linear range of instrument. GC/MS only
F	Matrix interference, concentration is an estimate
H	Value is estimated due to method holding time violation. For CAS Hydrocarbons, the chromatographic fingerprint of the sample resembles a petroleum product, but elution pattern indicates presence of < amount of heavier molecular weight constituents than calib std.
J	Estimated value, detected below the Reporting Limit
K	Estimated Maximum Possible Concentration
L	Elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
M	Duplicate inject precision did not agree
N	Spiked sample recovery not within control limits
O	For CAS PET Hydrocarbons, the chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
P	GC or HPLC confirmation criteria exceeded. Relative percent difference is greater than 40% between the two analytical results (25% for CLP Pest)
R	Rejected
S	Reported value determined by Method of Standard Additions (MSA)
T	Exceeded holding time from collection to extraction (depend upon storage conditions and matrix) or exceeds holding time from extraction to analysis.
U	The analyte was not detected
W	Post-digestion spike out of control limits
X	Indicates manual modification of result or EPA qualifier
Y	For CAS Hydrocarbons,chromatographic fingerprint of sample resembles petroleum product eluting in approx correct carbon range
Z	For CAS PET Hydrocarbons, the chromatographic fingerprint does not resemble a petroleum product.
a	Samples were quantified from TPT and percent recovery reported is TPT

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Major Analytical Group	Analyte (mg/kg)	PIT1 (0-1) FAA-001		PIT1 (1-4) FAA-002		PIT1 (4-6) FAA-003		PIT1 (6-6.5) FAA-004	
		Result	Qual	Result	Qual	Result	Qual	Result	Qual
Trace Metals	Antimony	0.66	N	6.58	N	11.6	N	10.4	N
	Arsenic	1.97		13.2		10.5		10.5	
	Cadmium	2.18		2.19		0.68		0.723	
	Chromium	63		367		477		445	
	Copper	20.8		868		456		470	
	Lead	696		666		398		416	
	Mercury	0.174		6.14		5.08		27.1	
	Nickel	33.5		193		188		222	
	Selenium	0.2	U	0.2	B	0.2	U	0.3	B
	Silver	0.061		0.195		0.156		0.12	
	Zinc	86.4		1190		653		668	
Low-Molecular-Weight PAHs	2-Methylnaphthalene	0.0021		0.029		0.023	D	0.04	D
	Acenaphthene	0.00078		0.022		0.015	D	0.016	D
	Acenaphthylene	0.0018		0.04		0.053	D	0.033	D
	Anthracene	0.0033		0.096		0.14	D	0.064	D
	Fluorene	0.00087		0.019		0.026	D	0.024	D
	Naphthalene	0.0019		0.028		0.024	D	0.072	D
	Phenanthrene	0.016		0.41		0.53	D	0.3	D
	Benz(a)anthracene	0.023		0.7		0.67	D	0.35	D
	Benzo(a)pyrene	0.033		0.82		0.83	D	0.4	D
	Benzo(b)fluoranthene	0.031		0.79		0.7	D	0.39	D
	Benzo(g,h,i)perylene	0.038		0.86		0.72	D	0.43	D
	Benzo(k)fluoranthene	0.028		0.64		0.66	D	0.34	D
	Chrysene	0.033		0.87		0.8	D	0.47	D
	Dibenz(a,h)anthracene	0.0073		0.2		0.16	D	0.097	D
	Fluoranthene	0.04		1	D	1.3	D	0.63	D
	Indeno(1,2,3-c,d)pyrene	0.034		0.84		0.67	D	0.38	D
	Pyrene	0.042		0.98		1.2	D	0.66	D

Major Analytical Group	Analyte (mg/kg)	PIT1 (0-1) FAA-001		PIT1 (1-4) FAA-002		PIT1 (4-6) FAA-003		PIT1 (6-6.5) FAA-004	
		Result	Qual	Result	Qual	Result	Qual	Result	Qual
SVOCs	1,2,4-Trichlorobenzene	0.0016	U	0.033	U	0.018	U	0.019	U
	1,2-Dichlorobenzene	0.0014	U	0.029	U	0.016	U	0.017	U
	1,3-Dichlorobenzene	0.0018	U	0.035	U	0.02	U	0.02	U
	1,4-Dichlorobenzene	0.0021	U	0.042	U	0.023	U	0.024	U
	2,4,6-Trichlorophenol	0.002	U	0.04	U	0.022	U	0.023	U
	2,4-Dichlorophenol	0.002	U	0.04	U	0.022	U	0.023	U
	2,4-Dimethylphenol	0.0059	U	0.13	U	0.066	U	0.069	U
	2,4-Dinitrophenol	0.039	U	0.79	U	0.43	U	0.45	U
	2,4-Dinitrotoluene	0.003	U	0.062	U	0.034	U	0.035	U
	2,6-Dinitrotoluene	0.003	U	0.062	U	0.034	U	0.035	U
	2-Chloronaphthalene	0.0039	U	0.079	U	0.043	U	0.045	U
	2-Chlorophenol	0.0019	U	0.038	U	0.021	U	0.022	U
	2-Methyl-4,6-dinitrophenol	0.0019	U	0.038	U	0.021	U	0.022	U
	2-Methylphenol	0.0037	U	0.075	U	0.041	U	0.043	U
	2-Nitroaniline	0.0029	U	0.06	U	0.033	U	0.034	U
	2-Nitrophenol	0.0028	U	0.057	U	0.031	U	0.033	U
	3,3'-Dichlorobenzidine	0.004	U	0.081	U	0.044	U	0.047	U
	3-Nitroaniline	0.0028	U	0.057	U	0.031	U	0.033	U
	4-Bromophenyl Phenyl Ether	0.0015	U	0.031	U	0.017	U	0.018	U
	4-Chloro-3-methylphenol	0.0023	U	0.046	U	0.025	U	0.027	U
	4-Chloroaniline	0.0023	U	0.046	U	0.025	U	0.027	U
	4-Chlorophenyl Phenyl Ether	0.0022	U	0.044	U	0.024	U	0.025	U
	4-Methylphenol	0.0031	U	0.064	U	0.035	U	0.037	U
	4-Nitroaniline	0.0037	U	0.075	U	0.041	U	0.043	U
	4-Nitrophenol	0.032	U	0.66	U	0.36	U	0.38	U
	Azobenzene	0.0026	U	0.053	U	0.029	U	0.03	U
	Benzoic Acid	0.11	U	2.1	U	1.2	U	1.2	U
	Benzyl Alcohol	0.004	U	0.081	U	0.044	U	0.047	U
	Bis (2-chloroethoxy) methane	0.0014	U	0.029	U	0.016	U	0.017	U

Major Analytical Group	Analyte (mg/kg)	PIT1 (0-1) FAA-001		PIT1 (1-4) FAA-002		PIT1 (4-6) FAA-003		PIT1 (6-6.5) FAA-004	
		Result	Qual	Result	Qual	Result	Qual	Result	Qual
	Bis (2-chloroethyl)Ether	0.0026	U	0.053	U	0.029	U	0.03	U
	Bis (2-chloroisopropyl)Ether	0.0013	U	0.027	U	0.015	U	0.015	U
	Bis (2-ethylhexyl) Phthalate	0.099	J	0.056	J	0.083	J	0.047	J
	Butyl Benzyl Phthalate	0.0051	J	0.033	U	0.018	U	0.019	U
	Carbazole	0.0047	J	0.033	J	0.036	J	0.024	J
	Di-n-butyl Phthalate	0.017		0.12	J	0.19	D	0.21	D
	Di-n-octyl Phthalate	0.0013	U	0.027	U	0.015	U	0.015	U
	Dibenzofuran	0.0016	J	0.029	U	0.022	J	0.036	J
	Diethyl Phthalate	0.0038	U	0.077	U	0.042	U	0.044	U
	Dimethyl Phthalate	0.002	U	0.04	U	0.022	U	0.023	U
	Hexachlorobenzene	0.0023	U	0.046	U	0.025	U	0.027	U
	Hexachlorobutadiene	0.0015	U	0.031	U	0.017	U	0.018	U
	Hexachlorocyclopentadiene	0.016	U	0.33	U	0.18	U	0.19	U
	Hexachloroethane	0.0024	U	0.049	U	0.027	U	0.028	U
	Isophorone	0.0052	J	0.035	U	0.02	U	0.02	U
	N-Nitroso di-n-propylamine	0.0035	U	0.07	U	0.039	U	0.04	U
	N-Nitrosodiphenylamine	0.0024	U	0.049	U	0.027	U	0.028	U
	Nitrobenzene	0.0022	U	0.044	U	0.024	U	0.025	U
	Pentachlorophenol (PCP)	0.0091	U	0.19	U	0.11	U	0.11	U
	Phenol	0.0089	J	0.056	J	0.023	U	0.024	U
VOCs	1,1-Dichloroethane	0.0012	U	0.00086	U	0.00093	U	0.00098	U
	Benzene	0.0012	U	0.00087	U	0.0011	J	0.0033	J
	Chlorobenzene	0.0011	U	0.00077	U	0.00084	U	0.00088	U
	Dichlorodifluoromethane	0.0011	U	0.00077	U	0.00084	U	0.00088	U
	Ethylbenzene	0.00085	U	0.00063	U	0.00068	U	0.00093	J
	Toluene	0.0013	U	0.001	J	0.001	U	0.0042	J
	Vinyl chloride	0.00092	U	0.00068	U	0.00074	U	0.00078	U
	cis-1,2-Dichloroethane	0.0013	U	0.00091	U	0.00099	U	0.0011	U
	Xylenes (Total)	0.0023	U	0.0017	U	0.0018	U	0.0019	U

Major Analytical Group	Analyte (mg/kg)	PIT1 (0-1) FAA-001		PIT1 (1-4) FAA-002		PIT1 (4-6) FAA-003		PIT1 (6-6.5) FAA-004	
		Result	Qual	Result	Qual	Result	Qual	Result	Qual
	2,4'-DDD	0.00032		0.01534		0.00937		0.01193	
	2,4'-DDE	0.00004	U	0.00004	U	0.00004	U	0.02837	
	2,4'-DDT	0.00024		0.02087		0.01317		0.01272	
	4,4'-DDD	0.00094		0.0206		0.01732		0.02471	
	4,4'-DDE	0.00053		0.01509		0.00635		0.00557	
	4,4'-DDT	0.00434		0.04144		0.01557		0.01107	
	Aldrin	0.00004	U	0.00004	U	0.00004	U	0.00005	U
	Dieldrin	0.00028		0.00696		0.00599		0.00575	
	Endosulfan I	0.00005	U	0.00006	U	0.00006	U	0.00006	U
	Endosulfan II	0.00005	U	0.00005	U	0.00006	U	0.00006	U
	Endosulfan sulfate	0.00002	U	0.00003	U	0.00003	U	0.00003	U
	Endrin	0.00004	U	0.00004	U	0.00005	U	0.00005	U
	Endrin Aldehyde	0.00039		0.00005	U	0.00006	U	0.00006	U
	Heptachlor	0.00003	U	0.00003	U	0.00004	U	0.00004	U
	Heptachlor Epoxide	0.00003	U	0.00004	U	0.00004	U	0.00004	U
	alpha-BHC	0.0001	U	0.0001	U	0.00011	U	0.00011	U
	alpha-Chlordane	0.00025		0.00117		0.00079		0.00059	
	gamma-BHC (Lindane)	0.00003	U	0.00003	U	0.00004	U	0.00004	U
	gamma-Chlordane	0.00029		0.00135		0.0009		0.00083	
	Total DDTs	0.00056		0.03621		0.02254		0.05302	
PCB Congeners	101 - 2,2',4,5,5'-Pentachlorobiphenyl (Cl5)	0.00293		0.14354	D	0.17053	D	0.18536	D
	105 - 2,3,3',4,4'-Pentachlorobiphenyl (Cl5)	0.00068		0.0404		0.05299		0.05398	
	110 - 2,3,3',4',6-Pentachlorobiphenyl (Cl5)	0.00575		0.17739	D	0.20516	D	0.21336	D
	118 - 2,3',4,4',5-Pentachlorobiphenyl (Cl5)	0.00194		0.09368	D	0.12796	D	0.13329	D
	126 - 3,3',4,4',5-Pentachlorobiphenyl (Cl5)	0.00012	U	0.00013	U	0.00014	U	0.00014	U
	128 - 2,2',3,3',4,4'-Hexachlorobiphenyl (Cl6)	0.00162		0.0353		0.03681		0.03601	
	129 - 2,2',3,3',4,5-Hexachlorobiphenyl (Cl6)	0.0003		0.01032		0.01067		0.01086	
	138 - 2,2',3,4,4',5'-Hexachlorobiphenyl (Cl6)	0.0081		0.18791	D	0.19324	D	0.19428	D
	153 - 2,2',4,4',5,5'-Hexachlorobiphenyl (Cl6)	0.00736		0.18024	D	0.17157	D	0.17703	D

Major Analytical Group	Analyte (mg/kg)	PIT1 (0-1) FAA-001		PIT1 (1-4) FAA-002		PIT1 (4-6) FAA-003		PIT1 (6-6.5) FAA-004	
		Result	Qual	Result	Qual	Result	Qual	Result	Qual
	170 - 2,2',3,3',4,4',5-Heptachlorobiphenyl (Cl7)	0.00199		0.03247		0.02189		0.02081	
	18 - 2,2',5-Trichlorobiphenyl (Cl3)	0.00012	U	0.00439		0.00343		0.0033	
	180 - 2,2',3,4,4',5,5'-Heptachlorobiphenyl (Cl7)	0.00584		0.05456	D	0.0349		0.03596	
	187 - 2,2',3,4',5,5',6-Heptachlorobiphenyl (Cl7)	0.00365		0.03621		0.01877		0.01836	
	195 - 2,2',3,3',4,4',5,6-Octachlorobiphenyl (Cl8)	0.00108		0.04211		0.00235		0.00209	
	206 - 2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl (Cl9)	0.00124		0.10192	D	0.00242		0.00176	
	209 - 2,2',3,3',4,4',5,5',6,6'-Decachlorobiphenyl (Cl10)	0.00621		0.02693		0.00243		0.00216	
	28 - 2,4,4'-Trichlorobiphenyl (Cl3)	0.00049	U	0.00301		0.00274		0.00296	
	44 - 2,2',3,5'-Tetrachlorobiphenyl (Cl4)	0.00025		0.02431		0.03259		0.03144	
	52 - 2,2',5,5'-Tetrachlorobiphenyl (Cl4)	0.00078		0.06291	D	0.08377	D	0.09059	D
	66 - 2,3',4,4'-Tetrachlorobiphenyl (Cl4)	0.00005	J	0.00815		0.01066		0.01105	
	77 - 3,3',4,4'-Tetrachlorobiphenyl (Cl4)	0.00005	U	0.00006	U	0.00006	U	0.00006	U
	8 - 2,4'-Dichlorobiphenyl (Cl2)	0.00024	U	0.001		0.00114		0.00159	
	Total PCBs	0.09954		2.5335		2.37204		2.45248	
Butyltins	Tributyltin	0.00058	J	0.0036		0.0018		0.011	

Major Analytical Group	Analyte (mg/kg)	PIT2 (0-1) FAA-010 Result	Qual	PIT2 (1-4) FAA-012 Result	Qual	PIT2 (4-6) FAA-013 Result	Qual	PIT2 (6-6.5) FAA-014 Result	Qual
Trace Metals	Antimony	4.33	N	16.5	N	48.5	N	104	N
	Arsenic	20.7		52.6		42.8		48.1	
	Cadmium	0.603		3.25		9.22		9.95	
	Chromium	124		328		610		645	
	Copper	157		1110		2610		1860	
	Lead	306		1220		6160		3650	
	Mercury	0.146		13.3		15.1		11.6	
	Nickel	119		235		412		391	
	Selenium	0.3	B	0.6	B	0.9	B	1	B
	Silver	0.122		0.481		1.11		1.25	
	Zinc	629		3440		9020		7570	
Low-Molecular-Weight PAHs	2-Methylnaphthalene	0.0079		0.21	D	0.27	D	0.47	D
	Acenaphthene	0.0049		0.14	D	0.29	D	1.1	D
	Acenaphthylene	0.012		0.047	D	0.11	D	0.073	D
	Anthracene	0.018		0.2	D	0.46	D	2.4	D
	Fluorene	0.0076		0.19	D	0.33	D	1.1	D
	Naphthalene	0.01		0.41	D	0.68	D	1	D
	Phenanthrene	0.068		1	D	2.2	D	8.2	D
	Benz(a)anthracene	0.073		0.76	D	1.5	D	5.7	D
	Benzo(a)pyrene	0.1		0.81	D	1.8	D	5.5	D
	Benzo(b)fluoranthene	0.089		0.79	D	1.5	D	4.5	D
	Benzo(g,h,i)perylene	0.17		0.66	D	1.3	D	3.1	D
	Benzo(k)fluoranthene	0.081		0.66	D	1.2	D	4.3	D
	Chrysene	0.099		1	D	1.9	D	6.7	D
	Dibenz(a,h)anthracene	0.031		0.16	D	0.32	D	0.95	D
	Fluoranthene	0.13		1.3	D	3	D	11	D
	Indeno(1,2,3-c,d)pyrene	0.12		0.6	D	1.2	D	3.4	D
	Pyrene	0.11		1.4	D	3	D	9.5	D

Major Analytical Group	Analyte (mg/kg)	PIT2 (0-1) FAA-010		PIT2 (1-4) FAA-012		PIT2 (4-6) FAA-013		PIT2 (6-6.5) FAA-014	
		Result	Qual	Result	Qual	Result	Qual	Result	Qual
SVOCs	1,2,4-Trichlorobenzene	0.017	U	0.085	U	0.19	U	0.2	U
	1,2-Dichlorobenzene	0.014	U	0.24	J	0.17	U	0.17	U
	1,3-Dichlorobenzene	0.018	U	0.09	U	0.2	U	0.21	U
	1,4-Dichlorobenzene	0.021	U	0.11	U	0.24	U	0.25	U
	2,4,6-Trichlorophenol	0.02	U	0.21	U	0.23	U	0.24	U
	2,4-Dichlorophenol	0.02	U	0.11	U	0.23	U	0.24	U
	2,4-Dimethylphenol	0.06	U	0.31	U	0.69	U	0.71	U
	2,4-Dinitrophenol	0.39	U	4.1	U	4.5	U	4.7	U
	2,4-Dinitrotoluene	0.031	U	0.32	U	0.35	U	0.37	U
	2,6-Dinitrotoluene	0.031	U	0.32	U	0.35	U	0.37	U
	2-Chloronaphthalene	0.039	U	0.41	U	0.45	U	0.47	U
	2-Chlorophenol	0.019	U	0.096	U	0.22	U	0.22	U
	2-Methyl-4,6-dinitrophenol	0.019	U	0.2	U	0.22	U	0.22	U
	2-Methylphenol	0.037	U	0.2	U	0.43	U	0.44	U
	2-Nitroaniline	0.029	U	0.31	U	0.34	U	0.35	U
	2-Nitrophenol	0.028	U	0.15	U	0.33	U	0.34	U
	3,3'-Dichlorobenzidine	0.04	U	0.21	U	0.46	U	0.48	U
	3-Nitroaniline	0.028	U	0.3	U	0.33	U	0.34	U
	4-Bromophenyl Phenyl Ether	0.016	U	0.16	U	0.18	U	0.19	U
	4-Chloro-3-methylphenol	0.023	U	0.12	U	0.27	U	0.28	U
	4-Chloroaniline	0.023	U	0.12	U	0.27	U	0.28	U
	4-Chlorophenyl Phenyl Ether	0.022	U	0.23	U	0.25	U	0.26	U
	4-Methylphenol	0.032	U	0.17	U	0.36	U	0.38	U
	4-Nitroaniline	0.037	U	0.39	U	0.43	U	0.44	U
	4-Nitrophenol	0.33	U	3.4	U	3.8	U	3.9	U
	Azobenzene	0.026	U	0.27	U	0.3	U	0.31	U
	Benzoic Acid	1.1	U	5.4	U	12	U	13	U
	Benzyl Alcohol	0.04	U	0.21	U	0.46	U	0.48	U
	Bis (2-chloroethoxy) methane	0.014	U	0.073	U	0.17	U	0.17	U

Major Analytical Group	Analyte (mg/kg)	PIT2 (0-1) FAA-010 Result	Qual	PIT2 (1-4) FAA-012 Result	Qual	PIT2 (4-6) FAA-013 Result	Qual	PIT2 (6-6.5) FAA-014 Result	Qual
	Bis (2-chloroethyl)Ether	0.026	U	0.14	U	0.3	U	0.31	U
	Bis (2-chloroisopropyl)Ether	0.013	U	0.068	U	0.15	U	0.16	U
	Bis (2-ethylhexyl) Phthalate	0.065	J	1.1	J	0.64	J	0.5	J
	Butyl Benzyl Phthalate	0.017	U	0.085	U	0.19	U	0.2	U
	Carbazole	0.37	D	0.63	J	0.17	U	0.2	J
	Di-n-butyl Phthalate	0.028	U	0.3	U	0.33	U	0.34	U
	Di-n-octyl Phthalate	0.013	U	0.068	U	0.15	U	0.16	U
	Dibenzofuran	0.064	J	0.17	J	0.17	U	0.25	J
	Diethyl Phthalate	0.038	U	0.4	U	0.44	U	0.46	U
	Dimethyl Phthalate	0.02	U	0.21	U	0.23	U	0.24	U
	Hexachlorobenzene	0.023	U	0.24	U	0.27	U	0.28	U
	Hexachlorobutadiene	0.016	U	0.079	U	0.18	U	0.19	U
	Hexachlorocyclopentadiene	0.17	U	1.7	U	1.9	U	2	U
	Hexachloroethane	0.024	U	0.13	U	0.28	U	0.29	U
	Isophorone	0.018	U	0.09	U	0.2	U	0.21	U
	N-Nitroso di-n-propylamine	0.035	U	0.18	U	0.4	U	0.42	U
	N-Nitrosodiphenylamine	0.024	U	0.25	U	0.28	U	0.29	U
	Nitrobenzene	0.022	U	0.12	U	0.25	U	0.26	U
	Pentachlorophenol (PCP)	0.092	U	0.96	U	1.1	U	1.1	U
	Phenol	0.021	U	0.11	U	0.24	U	0.25	U
VOCs	1,1-Dichloroethane	0.00084	U	0.00097	U	0.00099	U	0.0011	U
	Benzene	0.00085	U	0.0057	J	0.0047	J	0.0033	J
	Chlorobenzene	0.00076	U	0.00088	U	0.00089	U	0.00091	U
	Dichlorodifluoromethane	0.00076	U	0.00088	U	0.00089	U	0.00091	U
	Ethylbenzene	0.00062	U	0.0065		0.0015	J	0.0013	J
	Toluene	0.00091	U	0.0076		0.0037	J	0.0028	J
	Vinyl chloride	0.00067	U	0.00078	U	0.00079	U	0.0008	U
	cis-1,2-Dichloroethane	0.0009	U	0.0011	U	0.0011	U	0.0011	U
	Xylenes (Total)	0.0017	U	0.031		0.0019	U	0.0035	

Major Analytical Group	Analyte (mg/kg)	PIT2 (0-1) FAA-010 Result	Qual	PIT2 (1-4) FAA-012 Result	Qual	PIT2 (4-6) FAA-013 Result	Qual	PIT2 (6-6.5) FAA-014 Result	Qual
	2,4'-DDD	0.00241		0.00751		0.02115		0.06323	
	2,4'-DDE	0.00004	U	0.00004	U	0.02439		0.01598	
	2,4'-DDT	0.00161		0.00298		0.00758		0.04037	
	4,4'-DDD	0.00308		0.00844		0.09327	D	0.02658	
	4,4'-DDE	0.00389		0.00338		0.01444		0.01987	
	4,4'-DDT	0.00308		0.00065		0.00565		0.00165	
	Aldrin	0.00004	U	0.00004	U	0.00005	U	0.00005	U
	Dieldrin	0.00076		0.00003	U	0.00312		0.00004	U
	Endosulfan I	0.00006	U	0.00006	U	0.00007	U	0.00007	U
	Endosulfan II	0.00005	U	0.00005	U	0.00006	U	0.00006	U
	Endosulfan sulfate	0.00003	U	0.00003	U	0.00003	U	0.00003	U
	Endrin	0.00004	U	0.00004	U	0.00005	U	0.00005	U
	Endrin Aldehyde	0.00005	U	0.00005	U	0.00006	U	0.00006	U
	Heptachlor	0.00039		0.00003	U	0.00004	U	0.0047	
	Heptachlor Epoxide	0.00004	U	0.00004	U	0.00004	U	0.00004	U
	alpha-BHC	0.0001	U	0.0001	U	0.00012	U	0.00012	U
	alpha-Chlordane	0.00073		0.00031		0.00183		0.00096	
	gamma-BHC (Lindane)	0.00003	U	0.00003	U	0.00004	U	0.00004	U
	gamma-Chlordane	0.00074		0.00042		0.0004		0.00003	U
	Total DDTs	0.00402		0.01049		0.05312		0.11958	
PCB Congeners	101 - 2,2',4,5,5'-Pentachlorobiphenyl (Cl5)	0.00621		0.09407	D	0.2733	D	0.40796	D
	105 - 2,3,3',4,4'-Pentachlorobiphenyl (Cl5)	0.00113		0.00902		0.02422		0.01398	
	110 - 2,3,3',4',6-Pentachlorobiphenyl (Cl5)	0.01688		0.09225	D	0.25814	D	0.19152	D
	118 - 2,3',4,4',5-Pentachlorobiphenyl (Cl5)	0.00398		0.03858		0.16088	D	0.06089	
	126 - 3,3',4,4',5-Pentachlorobiphenyl (Cl5)	0.00013	U	0.00013	U	0.00015	U	0.00015	U
	128 - 2,2',3,3',4,4'-Hexachlorobiphenyl (Cl6)	0.00302		0.00755		0.0147		0.00815	
	129 - 2,2',3,3',4,5-Hexachlorobiphenyl (Cl6)	0.00062		0.00181		0.0039		0.00236	
	138 - 2,2',3,4,4',5'-Hexachlorobiphenyl (Cl6)	0.01973		0.08509	D	0.24448	D	0.28943	D
	153 - 2,2',4,4',5,5'-Hexachlorobiphenyl (Cl6)	0.01907		0.10202	D	0.29862	D	0.54157	D

Major Analytical Group	Analyte (mg/kg)	PIT2 (0-1) FAA-010 Result	Qual	PIT2 (1-4) FAA-012 Result	Qual	PIT2 (4-6) FAA-013 Result	Qual	PIT2 (6-6.5) FAA-014 Result	Qual
	170 - 2,2',3,3',4,4',5-Heptachlorobiphenyl (Cl7)	0.00521		0.01235		0.01727		0.01784	
	18 - 2,2',5-Trichlorobiphenyl (Cl3)	0.00061		0.01176		0.01939		0.01311	
	180 - 2,2',3,4,4',5,5'-Heptachlorobiphenyl (Cl7)	0.01116		0.02993		0.12489	D	0.0605	
	187 - 2,2',3,4',5,5',6-Heptachlorobiphenyl (Cl7)	0.00767		0.02094		0.04579		0.29937	D
	195 - 2,2',3,3',4,4',5,6-Octachlorobiphenyl (Cl8)	0.00423		0.00499		0.00396		0.00552	
	206 - 2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl (Cl9)	0.00849		0.00957		0.00662		0.00778	
	209 - 2,2',3,3',4,4',5,5',6,6'-Decachlorobiphenyl (Cl10)	0.00966		0.01518		0.00846		0.00674	
	28 - 2,4,4'-Trichlorobiphenyl (Cl3)	0.0005		0.01531		0.02196		0.01087	
	44 - 2,2',3,5'-Tetrachlorobiphenyl (Cl4)	0.00148		0.02982		0.09629	D	0.03086	
	52 - 2,2',5,5'-Tetrachlorobiphenyl (Cl4)	0.00328		0.07386	D	0.18765	D	0.17786	D
	66 - 2,3',4,4'-Tetrachlorobiphenyl (Cl4)	0.00098		0.02716		0.04016		0.02304	
	77 - 3,3',4,4'-Tetrachlorobiphenyl (Cl4)	0.00006	U	0.00006	U	0.00007	U	0.00007	U
	8 - 2,4'-Dichlorobiphenyl (Cl2)	0.00009		0.00251		0.0059		0.00433	
	Total PCBs	0.248		1.36754		3.71316		4.34736	
Butyltins	Tributyltin	0.00027	J	0.00036	J	0.00029	J	0.00044	J

Major Analytical Group	Analyte (mg/kg)	PIT3 (0-1) FAA-005 Result	Qual	PIT3 (1-4) FAA-006 Result	Qual	PIT3 (4-6) FAA-008 Result	Qual	PIT3 (6-6.5) FAA-009 Result	Qual
Trace Metals	Antimony	0.5	N	33.7	N	4.61	N	69.4	N
	Arsenic	2.83		13.2		8.08		22.6	
	Cadmium	0.208		0.79		0.797		1.28	
	Chromium	29.4		396		891		337	
	Copper	14.3		451		2560		1100	
	Lead	29.1		1130		470		910	
	Mercury	0.063		1.42		4.93		12.8	
	Nickel	24.6		289		588		199	
	Selenium	0.2	B	0.5	B	0.4	B	0.5	B
	Silver	0.039		1.24		0.157		0.332	
	Zinc	39.5		5140		1190		2490	
Low-Molecular-Weight PAHs	2-Methylnaphthalene	0.0012		0.0075	D	0.059	D	1.7	D
	Acenaphthene	0.00029	J	0.004	D	0.027	D	0.4	D
	Acenaphthylene	0.0018		0.028	D	0.065	D	0.0019	U
	Anthracene	0.0024		0.033	D	0.093	D	0.44	D
	Fluorene	0.00059		0.0069	D	0.044	D	0.69	D
	Naphthalene	0.0021		0.01	D	0.024	D	0.5	D
	Phenanthrene	0.013		0.18	D	0.3	D	2.4	D
	Benz(a)anthracene	0.017		0.22	D	0.61	D	1.2	D
	Benzo(a)pyrene	0.026		0.26	D	0.94	D	1.4	D
	Benzo(b)fluoranthene	0.02		0.25	D	0.88	D	1.3	D
	Benzo(g,h,i)perylene	0.026		0.25	D	1	D	1.1	D
	Benzo(k)fluoranthene	0.018		0.23	D	0.77	D	1.1	D
	Chrysene	0.025		0.26	D	0.76	D	1.8	D
	Dibenz(a,h)anthracene	0.004		0.057	D	0.24	D	0.32	D
	Fluoranthene	0.04		0.4	D	0.79	D	2.4	D
	Indeno(1,2,3-c,d)pyrene	0.023		0.23	D	0.94	D	1.1	D
	Pyrene	0.045		0.37	D	0.7	D	2.5	D
SVOCs	1,2,4-Trichlorobenzene	0.0016	U	0.016	U	0.017	U	0.085	U
	1,2-Dichlorobenzene	0.0014	U	0.014	U	0.027	J	0.18	J
	1,3-Dichlorobenzene	0.0017	U	0.017	U	0.019	U	0.091	U
	1,4-Dichlorobenzene	0.0021	U	0.02	U	0.022	U	0.11	U

Major Analytical Group	Analyte (mg/kg)	PIT3 (0-1) FAA-005		PIT3 (1-4) FAA-006		PIT3 (4-6) FAA-008		PIT3 (6-6.5) FAA-009	
		Result	Qual	Result	Qual	Result	Qual	Result	Qual
	2,4,6-Trichlorophenol	0.002	U	0.019	U	0.021	U	0.11	U
	2,4-Dichlorophenol	0.002	U	0.019	U	0.021	U	0.11	U
	2,4-Dimethylphenol	0.0059	U	0.058	U	0.063	U	0.32	U
	2,4-Dinitrophenol	0.039	U	0.38	U	0.41	U	2.1	U
	2,4-Dinitrotoluene	0.003	U	0.03	U	0.032	U	0.16	U
	2,6-Dinitrotoluene	0.003	U	0.03	U	0.032	U	0.16	U
	2-Chloronaphthalene	0.0039	U	0.038	U	0.041	U	0.21	U
	2-Chlorophenol	0.0018	U	0.018	U	0.02	U	0.097	U
	2-Methyl-4,6-dinitrophenol	0.0018	U	0.018	U	0.02	U	0.097	U
	2-Methylphenol	0.0036	U	0.036	U	0.039	U	0.2	U
	2-Nitroaniline	0.0029	U	0.029	U	0.031	U	0.16	U
	2-Nitrophenol	0.0028	U	0.028	U	0.03	U	0.15	U
	3,3'-Dichlorobenzidine	0.004	U	0.039	U	0.042	U	0.21	U
	3-Nitroaniline	0.0028	U	0.028	U	0.03	U	0.15	U
	4-Bromophenyl Phenyl Ether	0.0015	U	0.015	U	0.016	U	0.08	U
	4-Chloro-3-methylphenol	0.0023	U	0.023	U	0.024	U	0.12	U
	4-Chloroaniline	0.0023	U	0.023	U	0.024	U	0.12	U
	4-Chlorophenyl Phenyl Ether	0.0022	U	0.022	U	0.023	U	0.12	U
	4-Methylphenol	0.0031	U	0.031	U	0.033	U	0.17	U
	4-Nitroaniline	0.0036	U	0.036	U	0.039	U	0.2	U
	4-Nitrophenol	0.032	U	0.32	U	0.34	U	1.7	U
	Azobenzene	0.0026	U	0.026	U	0.028	U	0.14	U
	Benzoic Acid	0.11	U	1.1	U	1.1	U	5.5	U
	Benzyl Alcohol	0.004	U	0.039	U	0.042	U	0.21	U
	Bis (2-chloroethoxy) methane	0.0014	U	0.014	U	0.015	U	0.074	U
	Bis (2-chloroethyl)Ether	0.0026	U	0.026	U	0.028	U	0.14	U
	Bis (2-chloroisopropyl)Ether	0.0013	U	0.013	U	0.014	U	0.068	U
	Bis (2-ethylhexyl) Phthalate	0.01	J	0.046	J	0.15	J	0.28	J
	Butyl Benzyl Phthalate	0.0016	U	0.016	U	0.017	U	0.085	U
	Carbazole	0.0014	U	0.015	J	0.05	J	0.17	J
	Di-n-butyl Phthalate	0.0068	J	0.51	D	0.03	U	0.15	U
	Di-n-octyl Phthalate	0.0013	U	0.013	U	0.014	U	0.068	U

Major Analytical Group	Analyte (mg/kg)	PIT3 (0-1) FAA-005		PIT3 (1-4) FAA-006		PIT3 (4-6) FAA-008		PIT3 (6-6.5) FAA-009	
		Result	Qual	Result	Qual	Result	Qual	Result	Qual
	Dibenzofuran	0.0014	U	0.014	U	0.042	J	0.074	U
	Diethyl Phthalate	0.0037	U	0.037	U	0.04	U	0.2	U
	Dimethyl Phthalate	0.002	U	0.019	U	0.021	U	0.11	U
	Hexachlorobenzene	0.0023	U	0.023	U	0.024	U	0.12	U
	Hexachlorobutadiene	0.0015	U	0.015	U	0.016	U	0.08	U
	Hexachlorocyclopentadiene	0.016	U	0.16	U	0.17	U	0.85	U
	Hexachloroethane	0.0024	U	0.024	U	0.025	U	0.13	U
	Isophorone	0.0017	U	0.017	U	0.019	U	0.091	U
	N-Nitroso di-n-propylamine	0.0034	U	0.034	U	0.037	U	0.19	U
	N-Nitrosodiphenylamine	0.0024	U	0.024	U	0.025	U	0.13	U
	Nitrobenzene	0.0022	U	0.022	U	0.023	U	0.12	U
	Pentachlorophenol (PCP)	0.009	U	0.09	U	0.097	U	0.49	U
	Phenol	0.0021	U	0.02	U	0.59	D	0.11	U
VOCs	1,1-Dichloroethane	0.00083	U	0.00083	U	0.00089	U	0.00089	U
	Benzene	0.00084	U	0.00084	U	0.00096	J	0.0018	J
	Chlorobenzene	0.00074	U	0.00074	U	0.0008	U	0.0008	U
	Dichlorodifluoromethane	0.00074	U	0.00074	U	0.0008	U	0.0008	U
	Ethylbenzene	0.00061	U	0.0006	U	0.00065	U	0.0017	J
	Toluene	0.00089	U	0.00089	U	0.00096	U	0.00096	U
	Vinyl chloride	0.00066	U	0.00066	U	0.00071	U	0.00071	U
	cis-1,2-Dichloroethane	0.00088	U	0.00088	U	0.00094	U	0.00094	U
	Xylenes (Total)	0.0016	U	0.0016	U	0.0014		0.006	
	2,4'-DDD	0.00002	U	0.00333		0.01103		0.03199	
	2,4'-DDE	0.00004	U	0.00004	U	0.00004	U	0.00004	U
	2,4'-DDT	0.00002	U	0.0068		0.00824		0.01191	
	4,4'-DDD	0.00005	U	0.00566		0.01853		0.04564	
	4,4'-DDE	0.00003	J	0.00241		0.00444		0.0166	
	4,4'-DDT	0.0006		0.01102		0.0135		0.00141	
	Aldrin	0.00004	U	0.00004	U	0.00004	U	0.00004	U
	Dieldrin	0.00002	J	0.00091		0.00334		0.01346	
	Endosulfan I	0.00005	U	0.00005	U	0.00006	U	0.00006	U
	Endosulfan II	0.00005	U	0.00005	U	0.00006	U	0.00006	U

Major Analytical Group	Analyte (mg/kg)	PIT3 (0-1) FAA-005 Result	Qual	PIT3 (1-4) FAA-006 Result	Qual	PIT3 (4-6) FAA-008 Result	Qual	PIT3 (6-6.5) FAA-009 Result	Qual
	Endosulfan sulfate	0.00002	U	0.00002	U	0.00003	U	0.00003	U
	Endrin	0.00004	U	0.00004	U	0.00005	U	0.00005	U
	Endrin Aldehyde	0.00005	U	0.00005	U	0.00006	U	0.00006	U
	Heptachlor	0.00003	U	0.00003	U	0.00003	U	0.0013	
	Heptachlor Epoxide	0.00003	U	0.00004	U	0.00004	U	0.00004	U
	alpha-BHC	0.0001	U	0.0001	U	0.0001	U	0.00909	
	alpha-Chlordane	0.00004	U	0.00019		0.00009		0.00004	U
	gamma-BHC (Lindane)	0.00008	J	0.00008	J	0.00003	U	0.00004	U
	gamma-Chlordane	0.00002	U	0.00026		0.00002	U	0.00002	U
	Total DDTs	0.00004	U	0.01013		0.01927		0.0439	
PCB Congeners	101 - 2,2',4,5,5'-Pentachlorobiphenyl (Cl5)	0.00002	J	0.038		0.06178	D	0.35518	D
	105 - 2,3,3',4,4'-Pentachlorobiphenyl (Cl5)	0.00003	U	0.00292		0.0139		0.02881	
	110 - 2,3,3',4',6-Pentachlorobiphenyl (Cl5)	0.00015		0.03158		0.09579	D	0.51722	D
	118 - 2,3',4,4',5-Pentachlorobiphenyl (Cl5)	0.00008	J	0.0135		0.04614		0.29084	D
	126 - 3,3',4,4',5-Pentachlorobiphenyl (Cl5)	0.00012	U	0.00012	U	0.00013	U	0.00014	U
	128 - 2,2',3,3',4,4'-Hexachlorobiphenyl (Cl6)	0.00013		0.00898		0.01438		0.03332	
	129 - 2,2',3,3',4,5-Hexachlorobiphenyl (Cl6)	0.00005	U	0.00217		0.00421		0.00639	
	138 - 2,2',3,4,4',5'-Hexachlorobiphenyl (Cl6)	0.00092		0.07563	D	0.08027		0.1965	D
	153 - 2,2',4,4',5,5'-Hexachlorobiphenyl (Cl6)	0.00068		0.07443	D	0.08447	D	0.30098	D
	170 - 2,2',3,3',4,4',5-Heptachlorobiphenyl (Cl7)	0.00037		0.02017		0.01257		0.01323	
	18 - 2,2',5-Trichlorobiphenyl (Cl3)	0.00012	U	0.00082		0.00138		0.00518	
	180 - 2,2',3,4,4',5,5'-Heptachlorobiphenyl (Cl7)	0.00074		0.03573		0.02069		0.02646	
	187 - 2,2',3,4',5,5',6-Heptachlorobiphenyl (Cl7)	0.00046		0.01941		0.01153		0.02099	
	195 - 2,2',3,3',4,4',5,6-Octachlorobiphenyl (Cl8)	0.00014		0.00213		0.00164		0.00353	
	206 - 2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl (Cl9)	0.0001		0.00121		0.00119		0.00287	
	209 - 2,2',3,3',4,4',5,5',6,6'-Decachlorobiphenyl (Cl10)	0.0006		0.0011		0.00184		0.01313	
	28 - 2,4,4'-Trichlorobiphenyl (Cl3)	0.00049	U	0.00069		0.00161		0.01051	
	44 - 2,2',3,5'-Tetrachlorobiphenyl (Cl4)	0.00009	U	0.00277		0.01123		0.11505	D
	52 - 2,2',5,5'-Tetrachlorobiphenyl (Cl4)	0.00007	U	0.00767		0.0282		0.31027	D
	66 - 2,3',4,4'-Tetrachlorobiphenyl (Cl4)	0.0001	U	0.00143		0.00752		0.16618	D
	77 - 3,3',4,4'-Tetrachlorobiphenyl (Cl4)	0.00005	U	0.00005	U	0.00006	U	0.00006	U
	8 - 2,4'-Dichlorobiphenyl (Cl2)	0.00024	U	0.00018		0.00063		0.01188	

Major Analytical Group	Analyte (mg/kg)	PIT3 (0-1) FAA-005		PIT3 (1-4) FAA-006		PIT3 (4-6) FAA-008		PIT3 (6-6.5) FAA-009	
		Result	Qual	Result	Qual	Result	Qual	Result	Qual
	Total PCBs	0.00878		0.68104		1.00194		4.85704	
Butyltins	Tributyltin	0.0003	U	0.00088	J	0.0015		0.000064	U

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