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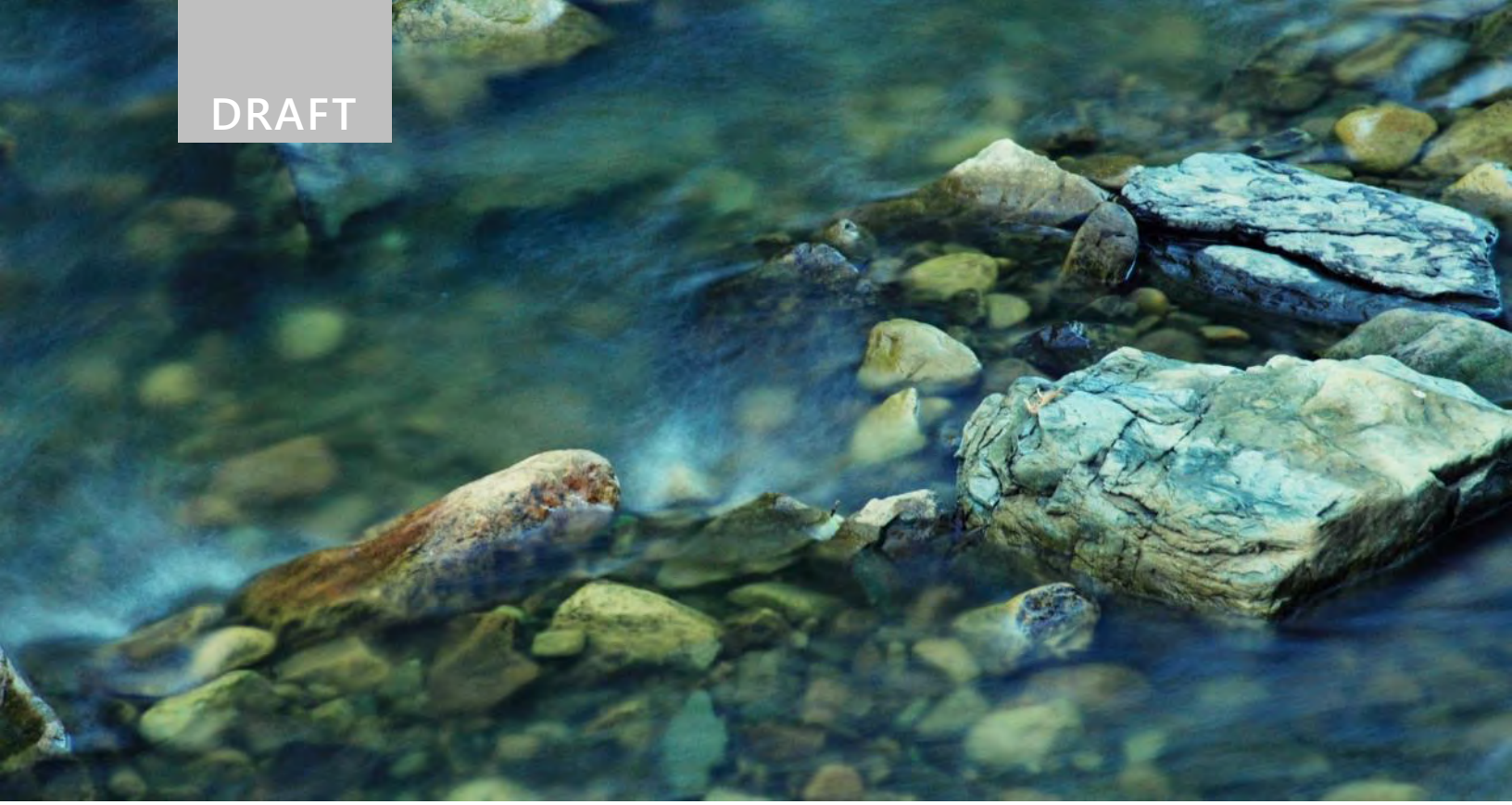

August 2017
Oakland Bay Restoration Project

ANCHOR QEA

Soil Characterization Data Report

Prepared for South Puget Sound Salmon Enhancement Group

DRAFT

August 2017
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Prepared for
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ABBREVIATIONS

AET	Apparent Effects Threshold
ARI	Analytical Resources, Inc.
bgs	below ground surface
COC	chemical of concern
CSL	Cleanup Screening Level
Ecology	Washington State Department of Ecology
D/F	dioxin/furan
DGPS	differential global positioning system
DMMP	Dredged Material Management Program
Holocene	Holocene Drilling, Inc.
MS/MSD	matrix spike and matrix spike duplicate
MTCA	Model Toxics Control Act
ng/kg	nanograms per kilogram
PAH	polycyclic aromatic hydrocarbon
PCB	polychlorinated biphenyl
PID	photoionization detector
Project	Oakland Bay Restoration Project
PS-SRM	Puget Sound Sediment Reference Material
QC	quality control
RPD	relative percent difference
SAP	Sampling and Analysis Plan
SCO	Sediment Cleanup Objective
SMS	Sediment Management Standards
SPSSEG	South Puget Sound Salmon Enhancement Group
TEQ	toxic equivalent quotient
TOC	total organic carbon
µg/kg	micrograms per kilogram

1 Introduction

The South Puget Sound Salmon Enhancement Group (SPSSEG) is working with the Squaxin Island Tribe, Simpson Timber Company, Sierra Pacific, Port of Shelton, City of Shelton, and others to restore salt marsh and estuary conditions within Oakland Bay, Washington (Figure 1). This Data Report presents the soil characterization results for the Oakland Bay Restoration Project (Project). Soil samples were collected and analyzed in accordance with the Dredged Material Management Program (DMMP) and Washington State Department of Ecology (Ecology)-approved Sampling and Analysis Plan (SAP; Anchor QEA 2017).

The following specific information is provided in this Data Report:

- Summary of sampling activities
- Deviations from the SAP
- Data quality assessments
- Analytical results compared to various Washington State screening criteria

This soil characterization effort was conducted by Anchor QEA, LLC. The Project team also consisted of Holocene Drilling, Inc. (Holocene) for soil boring, Analytical Resources, Inc. (ARI) for chemical analysis, and Laboratory Data Consultants for data validation.

1.1 Project Summary

The purpose of the Project is to improve habitat conditions at the mouths of the Goldsborough and Shelton Creeks. To support Project design, soils from the existing timber railway area that were proposed for potential removal and beneficial reuse as fill material in Shelton Harbor (i.e., below mean higher high water and potentially also below habitat material confining layers) were sampled and analyzed for DMMP chemicals of concern (COCs). Two potential excavation footprints (eastern and western areas of the spit) were characterized for beneficial reuse. Three subsurface soil borings were collected from each characterization area as shown in Table 1 and Figure 1. These borings were sampled at discrete intervals below ground surface (bgs) and composited together to represent the potential soil reuse volumes (Table 2). In addition, surface soil grab samples were collected, screened, and analyzed for potential contaminants associated with historical railway materials and use (e.g., polycyclic aromatic hydrocarbons [PAHs] from treated railroad timbers). Table 3 provides a summary of the collected soil grab samples.

The analytical results of the soil samples were compared to the DMMP screening criteria (Section 4, Tables 4 through 5). Soil characterization results indicated the presence of wood debris and elevated concentrations of dioxins/furans (D/Fs). Other COCs were below DMMP regulatory criteria except for PAHs, which were elevated in one soil grab sample near the timber railway.

1.2 Report Organization

The remainder of this document includes the following:

- Section 2.0, Sampling Summary: This section describes the sampling methods used in this program and any field deviations from the SAP.
- Section 3.0, Data Quality Assessment: This section describes information on data quality including sample completeness, quality control (QC) measures, and a summary of data validation findings.
- Section 4.0, Sample Investigation Results: This section describes analytical chemistry results and comparisons to applicable screening criteria.
- Section 5.0, References: This section provides bibliographic citations used in this Data Report.

2 Sampling Summary

Sampling was conducted in accordance with the approved SAP (Anchor QEA 2017). The SAP provides the sample design, target sampling locations, procedures for sample collection and processing, data QC, and data reporting requirements. The SAP was approved by DMMP and Ecology prior to sampling. Any deviations from the SAP are discussed in this section.

Six soil borings (three each from the eastern and western soil characterization areas) were collected by direct push methodology. Twelve surface grabs were collected with hand tools. Cores and surface grabs were processed and physically characterized on site. Samples were then transported to ARI and submitted for analysis. Daily field activity logs are provided in Appendix A.

2.1 Sample Collection and Navigation

Holocene Drilling Inc. collected soil borings using Geoprobe® direct push sampling methods on May 24, 2017. Drilling activities were performed under the direction of the Anchor QEA field lead. Cores were collected from six discrete locations and drilled down to the target depth or to refusal. Drilling methods consisted of inserting an outer casing and then drilling continuous 4-foot sections. In conjunction with Ecology, the Anchor QEA field lead decided not to apply compaction correction because compaction is unlikely to occur in the primarily sandy material, and because the outer casing assures accuracy of the start and end depths of each 4-foot segment. Table 1 and Figure 1 show target locations and soil boring collection information. One boring attempt was made at stations SB-01, SB-02, SB-03, and SB-04, and, due to difficulty reaching target depth, two attempts were made at stations SB-05 and SB-06. Attempts with the best sample recovery were retained from each station. After the completion of drilling and sampling activities, each temporary boring was abandoned with hydrated bentonite.

Surface soil grabs were collected by Anchor QEA field personnel using a decontaminated stainless steel trowel.

A hand-held differential global positioning system (DGPS) was used to navigate to the proposed sampling stations and record the actual sampling position at the time of sampling. Actual coordinates were recorded digitally. All stations were within 10 feet of the proposed locations except for stations SB-05 and SB-06, which were relocated due to large debris (metal pipes, etc.). SB-05 was 13 feet away from the proposed location and SB-06 was moved 35 feet from the proposed location. Ecology approved these moves during an on-site visit the day of sampling.

Actual locations, collection date, and sample identifications are provided in Tables 1 through 3.

2.2 Sample Processing

Sample processing was conducted in accordance with the SAP in order to determine potential reuse suitability at various depths within the spit. Sample collection summaries for all borings and grabs are provided in Tables 2 and 3, respectively.

The soil borings were cut longitudinally by Holocene and split with decontaminated stainless steel knives and spatulas into two halves for logging and sampling. Borings were logged for major lithological features, classified according to the Unified Soil Classification System, and photographed (Appendix A). Samples were collected at 2.5-foot intervals with three intervals in the western soil characterization area (to a maximum depth of 7.5 feet) and four sampling intervals in the eastern soil characterization area (to a maximum depth of 10 feet). Corresponding 2.5-foot intervals from the three core locations within the soil characterization area were processed and composited together with exceptions described in Section 2.3. Additionally, archives of each individual interval were collected.

The surface soil grabs were logged for major lithological features, classified according to the Unified Soil Classification System, and photographed (Appendix A). Field screening included visual screening, photoionization detector (PID) monitoring, and sheen testing in accordance with the procedures outlined in Ecology's *Guidance for Remediation of Petroleum Contaminated Sites* (Ecology 2016). Samples were collected from the 0 to 0.5-foot interval. Samples from three locations were processed and composited together yielding four surface soil composite samples, and archives of each individual interval were collected (Table 3).

Samples were placed in decontaminated stainless steel bowls and mixed until homogenous in color and texture using a decontaminated stainless steel mixing spoon. The soil was then spooned into laboratory-supplied jars for analyses. Sulfide samples were taken prior to homogenization from each corresponding interval, placed in jars with 5 milliliters of 2-Normal zinc acetate per 30 grams, and shaken vigorously to preserve the samples. A chain-of-custody form was logged by processing staff and relinquished to the laboratory staff (Appendix A).

2.3 SAP Deviations

The following deviations from the SAP were noted:

- Two soil borings (SB-05 and SB-06) were short of the intended Project depth. For SB-05, the target end of core was 10.0 feet bgs, and actual end of core was 9.5 feet bgs. For SB-06, the target end of core was 10.0 feet bgs, and actual end of core was 7.0 feet bgs. The eastern portion of the spit had more riprap, making drilling difficult. Multiple attempts were made at these locations.

- One interval (SB-06 from 5.0–7.5 feet bgs) was mistakenly composited with deeper interval material (the 7.5–10-foot composite from the eastern soil characterization area; COMP-02ZB). Chemical concentrations between the COMP-02ZA (5.0–7.5 feet) and COMP-02ZB (7.5–10 feet) intervals were comparable and indicate similar chemical profiles at these two depths. Characterization objectives were not impacted by this deviation.
- In one run from one core (the 4–8 feet run from SB05), the drill run was a full 4 feet with no refusal with 3 feet of recovered material. There was no indication of loss of material from the bottom of the core and no possibility of sloughed material due to the cased and continuous drilling methods. In this core segment, compaction correction was applied based on a recovery of 75%. Ecology approved the use of compaction correction for this interval via a telephone call.
- Stations SB-05 and SB-06 were moved 13 feet and 35 feet, respectively, away from the proposed locations due to access issues. Ecology approved these moves during their on-site visit. Adequate spatial distribution was still maintained despite these modifications.

These deviations do not impact overall data usability or data quality objectives.

3 Data Quality Assessment

This section provides information on data quality, including field and laboratory QC measures, Puget Sound Sediment Reference Material (PS-SRM) results, data validation findings, and completeness. The laboratory data reports are provided in Appendix B. A detailed data validation report is provided in Appendix C.

3.1 Field Data Quality

All samples arrived at the laboratory within temperature requirements. As required in the SAP (Anchor QEA 2017), extra volume was provided for matrix spike and matrix spike duplicate (MS/MSD) samples and a field duplicate was collected for each sampling type (core composites, soil grabs). Field duplicate relative percent differences (RPDs) were under 50% for all parameters except dioxin/furans, which had high RPDs for several congeners.

3.2 Analytical Data Quality

Data quality objectives and quality assurance procedures are provided in the SAP. The data package was validated by Laboratory Data Consultants in Carlsbad, California. All data qualifiers applied to the data during final validation have been incorporated into the database for this Project. Data qualifiers assigned during data validation include the following:

- "J" indicates the associated numerical value is an estimated concentration.
- "U" indicates a reporting limit below which the analyte was not detected.
- "UJ" indicates an approximate reporting limit below which the analyte was not detected.
- "R" indicates a rejected result due to laboratory quality control sample failure.

The validation process resulted in some J-qualified data (estimated values) based on a specified protocol or technical advisory, as stated in the data validation reports, including the following key findings:

- Several matrix spike samples (semivolatiles, pesticides, metals, conventionals) were outside of accuracy performance criteria, suggesting matrix interference issues.
- Due to method blank contamination, a few D/F results were qualified as non-detect at raised reporting limits; however, sensitivity goals were still met.
- The D/F laboratory duplicate resulted in two congeners with RPDs greater than 30%.
- D/F results with estimated maximum potential concentration "EMPC" qualifiers were converted to "J" qualifiers to indicate potential presence of these compounds.

The validation process also resulted in some rejected data including the following:

- Due to very low laboratory matrix spike sample percent recovery, six antimony results were rejected.

- Due to very low laboratory matrix spike sample percent recovery, five sulfide results were rejected.

3.3 Puget Sound Reference Material Results

The Puget Sound Standard Reference Material (PS-SRM) is used to evaluate measurement accuracy and laboratory performance for D/Fs and polychlorinated biphenyl (PCB) analyses of sediment collected in Puget Sound. Laboratory results for these analyses were within the DMMP acceptance limits, with the exception of 1,2,3,7,8,9-HxCDF, which recovered high. The PS-SRM was reanalyzed in the same analytical batch and resulted in concentrations within the performance limits.

3.4 Project Data Quality Objectives

Overall Project data quality objectives were met. Despite some matrix interference issues, results provide sufficient information to characterize the chemical quality of the upland soils sampled.

Data completeness for Oakland Bay soil characterization includes collection of required samples in the field, and laboratory analysis for target chemicals as outlined in the Project SAP (Appendix A). The deepest interval (7.5–10 feet) at location SB-06 was not collected due to refusal. All other target samples were collected and submitted for the full suite of physical and chemical testing.

Laboratory data completeness was measured by percentage of results reported by the analytical laboratory. Data completeness levels were set at 95% for all parameters, according to data quality objectives specified in the SAP. Some antimony and sulfide results were rejected but Project decisions were not impacted, and overall completeness was measured at 98%.

4 Sample Investigation Results

This section summarizes analytical results for conventional analyses, DMMP standard COCs, and D/Fs, including any exceedances of applicable screening criteria. Tables 4 and 5 provide the soil boring composite sampling results and soil grab sampling results, respectively.

4.1 Field Data

Field screening of surface soil grabs consisted of visual observations of staining, sheen tests, and PID scans. No samples exhibited stained soils, visible sheen, and/or a PID reading above background levels.

4.2 Soil Boring Chemical Screening

Conventional analyses analyzed on soil borings indicate that soils were primarily sand and gravel. Total solids were high in the surface intervals and lower (around 50%) in deeper intervals. Total organic carbon (TOC) content ranged between 0.5 and 3.5% in surface samples, with higher concentrations in deeper intervals associated with the presence of woody debris. Visual observations and loss on ignition (total volatile solids) testing indicated abundant wood debris in deeper intervals (5 feet bgs and deeper).

As summarized in Table 4, analytical results were compared to various sediment screening criteria to evaluate potential suitability for beneficial reuse as in-water fill. These criteria included the following:

- DMMP Criteria (Screening Level, Bioaccumulation Trigger, and Maximum Level)
- Sediment Management Standards (SMS) Marine Sediment Criteria, Sediment Cleanup Objectives (SCO), and Cleanup Screening Level (CSL) for samples with TOC within 0.5–3.5%.
- Marine SMS Apparent Effects Threshold (AET) SCO and CSL, for samples with TOC outside of 0.5–3.5%.
- Draft regional background Levels for South Puget Sound, which are potentially applicable to prospective Shelton Harbor in-water fill areas (Ecology 2017; applied to surface sediments as a harbor-wide surface weighted average concentration).

There were no exceedances of screening levels except for D/Fs, which exceeded the draft regional background level (19 nanograms per kilogram [ng/kg] toxic equivalent quotient [TEQ]) in all soil boring composites, and carcinogenic PAHs, which exceeded the draft regional background level (78 micrograms per kilogram [µg/kg] TEQ) in one soil boring composite.

4.3 Soil Grab Chemical Screening

As shown in Table 5, carcinogenic PAH concentrations were above the draft regional background level (78 µg/kg TEQ) in all soil grab composite samples. However, PAH concentrations were below

DMMP and SMS screening criteria except for an elevated detection of chrysene in one sample composite. Consistent with the SAP, no other chemical testing was performed on soil grab samples.

4.4 Upland Screening

As a further screening, upland soil boring samples were also compared with Washington State Model Toxics Control Act (MTCA) soil cleanup levels for industrial properties, consistent with the current site use. The most stringent of MTCA Method A or Method C criteria were applied in this screening for each tested analyte. Based on this comparison, all analyte concentrations were well below upland industrial use cleanup soil screening levels.

4.5 Conclusions

Due to the presence of wood debris and concentrations of D/Fs and carcinogenic PAHs that exceed draft regional background concentrations, the Project team determined that soils from the existing timber railway area are likely unsuitable for beneficial reuse as in-water fill. These existing soils, which are currently protected by riprap and other shoreline stabilization materials, will not be disturbed by the Project design. The need for potential future source control measures in this area will be assessed as part of the Shelton Harbor cleanup study currently being performed by the Simpson Timber Company and Ecology.

5 References

Anchor QEA (Anchor QEA, LLC), 2017. *Memorandum Re: Sampling and Analysis Plan: Oakland Bay Restoration Project*. March 29, 2017.

Ecology (Washington State Department of Ecology), 2016. *Guidance for Remediation of Petroleum Contaminated Sites*. Toxics Cleanup Program Publication 10-09-057. Revised June 2016.

Ecology, 2017. *South Puget Sound Regional Background, Draft Final Data Evaluation and Summary Report*. Toxics Cleanup Program Publication 17-09-130. 2017.

Tables

Table 1

Soil Boring Collection Summary

Station ID	Date	Spit Area	Actual Coordinates[1]		Sample Method	Drive Penetration (feet)	Recovery Measurement (%)	Refusal hit
			Easting (X)	Northing (Y)				
SB-01	5/24/2017	Western	996351	694808	Geoprobe®	0-4	100	No
						4-8	100	No
SB-02			996509	694810		0-4	100	No
						4-8	100	No
SB-03			996658	694809		0-4	100	No
						4-8	100	No
SB-04		Eastern	996775	694815		0-4	100	No
						4-8	100	No
						8-12	100	No
SB-05			996929	694813		0-4	100	No
						4-8	75	No
						8-9.5	100	Yes
SB-06			997096	694792		0-4	100	No
						4-7	100	Yes

Notes:

1. Washington State Plane South, North American Datum of 1983 (NAD 83), U.S. Survey Feet

Table 2

Soil Boring Sample Collection Summary

Station ID	Spit Area	Sample Intervals	Individual Sample ID[1]	Composite Sample ID[4]	Analytical Testing
SB-01	Western	0 to 2.5 feet bgs	SB-01-0-2.5-170524	SB-COMP-1A-0-2.5	TS, TVS, TOC, Ammonia, Sulfide, Grain Size, Metals, PAHs, SVOCs, Pesticides, PCBs, and D/F
		2.5 to 5 feet bgs	SB-01-2.5-5-170524	SB-COMP-1B-2.5-5	
		5 to 7.5 feet bgs	SB-01-5-7.5-170524	SB-COMP-1ZA-5-7.5	
SB-02		0 to 2.5 feet bgs	SB-02-0-2.5-170524	SB-COMP-1A-0-2.5	
		2.5 to 5 feet bgs	SB-02-2.5-5-170524	SB-COMP-1B-2.5-5	
		5 to 7.5 feet bgs	SB-02-5-7.5-170524	SB-COMP-1ZA-5-7.5	
SB-03		0 to 2.5 feet bgs	SB-03-0-2.5-170524	SB-COMP-1A-0-2.5	
		2.5 to 5 feet bgs	SB-03-2.5-5-170524	SB-COMP-1B-2.5-5	
		5 to 7.5 feet bgs	SB-03-5-7.5-170524	SB-COMP-1ZA-5-7.5	
SB-04	Eastern	0 to 2.5 feet bgs	SB-04-0-2.5-170524	SB-COMP-2A-0-2.5	
		2.5 to 5 feet bgs	SB-04-2.5-5-170524	SB-COMP-2B-2.5-5	
		5 to 7.5 feet bgs	SB-04-5-7.5-170524	SB-COMP-2ZA-5-7.5	
		7.5 to 10 feet bgs	SB-04-7.5-10-170524	SB-COMP-2ZB-7.5-10	
SB-05		0 to 2.5 feet bgs	SB-05-0-2.5-170524	SB-COMP-2A-0-2.5	
		2.5 to 5 feet bgs	SB-05-2.5-5-170524	SB-COMP-2B-2.5-5	
		5 to 7.5 feet bgs	SB-05-5-7.5-170524	SB-COMP-2ZA-5-7.5	
		7.5 to 9.5 feet bgs	SB-05-7.5-10-170524	SB-COMP-2ZB-7.5-10	
SB-06		0 to 2.5 feet bgs	SB-06-0-2.5-170524	SB-COMP-2A-0-2.5	
		2.5 to 5 feet bgs	SB-06-2.5-5-170524	SB-COMP-2B-2.5-5	
		5 to 7.0 feet bgs	SB-06-5-7.5-170524	SB-COMP-2ZB-7.5-10[2]	
Field Duplicate		--	--	SB-COMP-102B-2.5-5[3]	
Puget Sound SRM		--	--	--	D/F and PCBs

Notes:

1. Archived samples
2. Interval (5–7.0 feet bgs) composited with deeper material (7.5–10 feet bgs)
3. Field duplicate of SB-COMP-2B-2.5-5
4. Sample IDs are color coded by composite.

Metals: antimony, arsenic, cadmium, chromium, copper, lead, mercury, selenium, silver, and zinc
bgs: below ground surface
D/F: dioxins/furans
PAH: polycyclic aromatic hydrocarbon
PCBs: polychlorinated biphenyl
SRM: Sediment Reference Material
SVOC: semivolatile organic compound
TOC: total organic carbon
TS: total solids
TVS: total volatile solids

Table 3

Soil Grab Sample Collection Summary

Station ID	Date	Actual Coordinates[1]		Sample Method	Sample Intervals	Archived Sample ID	Composite Sample ID	Analytical Testing
		Easting (X)	Northing (Y)					
GS-01	5/24/2017	996344	694780	Grab	0 to 0.5 feet bgs	GS-01-0-0.5-170524	GS-COMP-01-0-0.5	PAHs
GS-03		996455	694784			GS-03-0-0.5-170524		
GS-05		996590	694790			GS-05-0-0.5-170524		
GS-02		996393	694825			GS-02-0-0.5-170524	GS-COMP-02-0-0.5	
GS-04		996520	694826			GS-04-0-0.5-170524		
GS-06		996664	694830			GS-06-0-0.5-170524		
GS-07		996729	694784			GS-07-0-0.5-170524	GS-COMP-03-0-0.5	
GS-09		996890	694786			GS-09-0-0.5-170524		
GS-11		997023	694793			GS-11-0-0.5-170524		
GS-08		996811	694827			GS-08-0-0.5-170524	GS-COMP-04-0-0.5	
GS-10		996968	694821			GS-10-0-0.5-170524		
GS-12		997133	694791			GS-12-0-0.5-170524		
Field Duplicate		--	--	--	--	--	GS-COMP-103-0-0.5	

Notes:

1. Washington State Plane South, North American Datum of 1983 (NAD 83), U.S. Survey Feet

bgs: below ground surface

PAH: polycyclic aromatic hydrocarbon

Table 4
Soil Boring Composite Analytical Results and Screening

									Sample ID	SB-COMP-01A-0-2.5[1]	SB-COMP-01B-2.5-5	SB-COMP-01ZA-5-7.5	SB-COMP-02A-0-2.5[1]
									Sample Date	5/24/2017	5/24/2017	5/24/2017	5/24/2017
									Depth	0 - 2.5 ft	2.5 - 5 ft	5 - 7.5 ft	0 - 2.5 ft
									Sample Type	N	N	N	N
									Matrix	SO	SO	SO	SO
		Draft Regional Background[3]	DMMP SL	DMMP BT	DMMP ML	SMS Marine Sediment SCO	SMS Marine Sediment CSL	Marine Sediment AET SCO	Marine Sediment AET CSL				
Conventional Parameters (mg/kg)													
Ammonia as nitrogen	SM4500NH3H	--	--	--	--	--	--	--	--	**1.33**	**21.6**	**16.1**	**1.65**
Sulfide	SM4500S2D	--	--	--	--	--	--	--	--	**-- R**	**-- R**	**1.16 J**	**-- R**
Conventional Parameters (pct)													
Loss on ignition	PSEP	--	--	--	--	--	--	--	--	**7.7**	**28.7**	**23.2**	**4.1**
Moisture (water) content	D2216	--	--	--	--	--	--	--	--	**20.4**	**89.4**	**78.6**	**16.3**
Total organic carbon	Plumb 1981	--	--	--	--	--	--	--	--	**3.17 J**	**12.7 J**	**10.7 J**	**2.02 J**
Total solids	SM2540G	--	--	--	--	--	--	--	--	**85.74**	**55.93**	**48.1**	**87.1**
Grain Size (pct)													
Gravel	PSEP	--	--	--	--	--	--	--	--	**55.4**	**46.9**	**49.8**	**63.7**
Sand, very coarse	PSEP	--	--	--	--	--	--	--	--	**10.8**	**9.7**	**7.3**	**8.4**
Sand, coarse	PSEP	--	--	--	--	--	--	--	--	**9.3**	**8.9**	**8.6**	**7.7**
Sand, medium	PSEP	--	--	--	--	--	--	--	--	**8.4**	**10**	**9.2**	**5.6**
Sand, fine	PSEP	--	--	--	--	--	--	--	--	**5.2**	**7.4**	**7**	**3.9**
Sand, very fine	PSEP	--	--	--	--	--	--	--	--	**3.1**	**4.7**	**2.4**	**2.5**
Silt, coarse	PSEP	--	--	--	--	--	--	--	--	**1**	**2.7**	**4**	**1.1**
Silt, medium	PSEP	--	--	--	--	--	--	--	--	**2.2**	**3.6**	**5.4**	**2.2**
Silt, fine	PSEP	--	--	--	--	--	--	--	--	**1.6**	**2.3**	**2.7**	**1.5**
Silt, very fine	PSEP	--	--	--	--	--	--	--	--	**1.2**	**1.5**	**1.4**	**1.3**
Clay, coarse	PSEP	--	--	--	--	--	--	--	--	**0.7**	**0.7**	**0.5**	**0.8**
Clay, medium	PSEP	--	--	--	--	--	--	--	--	**0.5**	**0.6**	**0.4**	**0.6**
Clay, fine	PSEP	--	--	--	--	--	--	--	--	**0.6**	**1**	**1.4**	**0.6**
Total Gravel	PSEP	--	--	--	--	--	--	--	--	**55.4**	**46.9**	**49.8**	**63.7**
Total Sand	PSEP	--	--	--	--	--	--	--	--	**36.8**	**40.7**	**34.5**	**28.1**
Total Silt	PSEP	--	--	--	--	--	--	--	--	**6**	**10.1**	**13.5**	**6.1**
Total Clay	PSEP	--	--	--	--	--	--	--	--	**1.8**	**2.3**	**2.3**	**2**
Total Fines (silt + clay)	PSEP	--	--	--	--	--	--	--	--	**7.8**	**12.4**	**15.8**	**8.1**
Metals (mg/kg)													
Antimony	SW6020A	--	150	--	200	--	--	--	--	**0.37 J**	0.35 UJ	**-- R**	**-- R**
Arsenic	SW6020A	--	57	507.1	700	57	93	57	93	**8.37 J**	**1.96 J**	**2.45 J**	**2.82 J**
Cadmium	SW6020A	--	5.1	11.3	14	5.1	6.7	5.1	6.7	**0.32**	**0.09 J**	**0.16 J**	**0.16**
Chromium	SW6020A	--	260	260	--	260	270	260	270	**39.5 J**	**28.7 J**	**68.5 J**	**36.2 J**
Copper	SW6020A	--	390	1027	1300	390	390	390	390	**189 J**	**83.4 J**	**87.9 J**	**91.6 J**
Lead	SW6020A	--	450	975	1200	450	530	450	530	**199**	**10.1**	**7.97**	**9.89**
Mercury	SW7471B	--	0.41	1.5	2.3	0.41	0.59	0.41	0.59	**0.05306**	**0.0651**	**0.05439**	**0.0229**
Selenium	SW6020A	--		3	--	--	--	--	--	**1.48**	**1.11**	**1.67**	**1.71**
Silver	SW6020A	--	6.1	6.1	8.4	6.1	6.1	6.1	6.1	**0.15 J**	**0.12 J**	**0.16 J**	**0.19 J**
Zinc	SW6020A	--	410	2783	3800	410	960	410	960	**192**	**69**	**71.8**	**92.1**
Semivolatile Organics (µg/kg)													
1,2,4-Trichlorobenzene	SW8270DSIM	--	31	--	64	--	--	31	51	4.7 U	4.8 U	4.9 U	14.8 U
1,2-Dichlorobenzene	SW8270DSIM	--	35	--	110	--	--	35	50	4.7 U	4.8 U	4.9 U	14.8 U
1,4-Dichlorobenzene	SW8270DSIM	--	110	--	120	--	--	110	110	4.7 U	4.8 U	4.9 U	14.8 U
2,4-Dimethylphenol	SW8270D	--	29	--	210	29	29	29	29	25.2 UJ[2]	26 UJ[2]	26.5 UJ[2]	79.3 UJ[2]
2-Methylphenol (o-Cresol)	SW8270DSIM	--	63	--	77	63	63	63	63	**3 J**	4.8 U	**3.2 J**	14.8 U
4-Methylphenol (p-Cresol)	SW8270DSIM	--	670	--	3600	670	670	670	670	**7.5**	**126**	**105**	14.8 U
Benzoic acid	SW8270D	--	650	--	760	650	650	650	650	**66.8 J**	**189 J**	**110 J**	592 UJ
Benzyl alcohol	SW8270D	--	57	--	870	57	73	57	73	18.8 U	19.4 U	19.8 U	59.2 U
bis(2-Ethylhexyl)phthalate	SW8270D	--	1300	--	8300	--	--	1300	3100	**102**	48.5 U	49.4 U	148 U
Butylbenzyl phthalate	SW8270DSIM	--	63	--	970	--	--	63	900	**6.5**	**13.8**	4.9 U	14.8 U
Diethyl phthalate	SW8270DSIM	--	200	--	1200	--	--	200	1200	**49.1**	19.4 U	19.8 U	59.2 U
Dimethyl phthalate	SW8270DSIM	--	71	--	1400	--	--	71	160	4.7 U	4.8 U	4.9 U	14.8 U
Di-n-butyl phthalate	SW8270D	--	1400	--	5100	--	--	1400	1400	18.8 U	19.4 U	19.8 U	59.2 U
Di-n-octyl phthalate	SW8270D	--	6200	--	6200	--	--	6200	6200	18.8 U	19.4 U	19.8 U	59.2 U
Hexachlorobenzene	SW8270DSIM	--	22	168	230	--	--	22	70	4.7 U	4.8 U	4.9 U	14.8 U
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	SW8270DSIM	--	11	--	270	--	--	11	120	4.7 U	4.8 U	4.9 U	14.8 U

Table 4
Soil Boring Composite Analytical Results and Screening

									Sample ID	SB-COMP-01A-0-2.5[1]	SB-COMP-01B-2.5-5	SB-COMP-01ZA-5-7.5	SB-COMP-02A-0-2.5[1]
									Sample Date	5/24/2017	5/24/2017	5/24/2017	5/24/2017
									Depth	0 - 2.5 ft	2.5 - 5 ft	5 - 7.5 ft	0 - 2.5 ft
									Sample Type	N	N	N	N
									Matrix	SO	SO	SO	SO
		Draft Regional Background[3]	DMMP SL	DMMP BT	DMMP ML	SMS Marine Sediment SCO	SMS Marine Sediment CSL	Marine Sediment AET SCO	Marine Sediment AET CSL				
n-Nitrosodiphenylamine	SW8270D	--	28	--	130	--	--	28	40	18.8 U	19.4 U	19.8 U	28.3 U[2]
Pentachlorophenol	SW8270D	--	400	504	690	360	690	360	690	**216**	**82 J**	**104**	296 U
Phenol	SW8270DSIM	--	420	--	1200	420	1200	420	1200	**14.9**	4.8 U	**58.5**	**15**
Semivolatile Organics (mg/kg-OC)													
1,2,4-Trichlorobenzene	SW8270DSIM	--	--	--	--	0.81	1.8	--	--	0.1483 U	0.0378 U	0.0458 U	0.7327 U
1,2-Dichlorobenzene	SW8270DSIM	--	--	--	--	2.3	2.3	--	--	0.1483 U	0.0378 U	0.0458 U	0.7327 U
1,4-Dichlorobenzene	SW8270DSIM	--	--	--	--	3.1	9	--	--	0.1483 U	0.0378 U	0.0458 U	0.7327 U
bis(2-Ethylhexyl)phthalate	SW8270D	--	--	--	--	47	78	--	--	**3.218**	0.3819 U	0.4617 U	7.327 U
Butylbenzyl phthalate	SW8270DSIM	--	--	--	--	4.9	64	--	--	**0.205**	**0.1087**	0.0458 U	0.7327 U
Diethyl phthalate	SW8270DSIM	--	--	--	--	61	110	--	--	**1.5489**	0.1528 U	0.185 U	2.9307 U
Dimethyl phthalate	SW8270DSIM	--	--	--	--	53	53	--	--	0.1483 U	0.0378 U	0.0458 U	0.7327 U
Di-n-butyl phthalate	SW8270D	--	--	--	--	220	1700	--	--	0.5931 U	0.1528 U	0.185 U	2.9307 U
Di-n-octyl phthalate	SW8270D	--	--	--	--	58	4500	--	--	0.5931 U	0.1528 U	0.185 U	2.9307 U
Hexachlorobenzene	SW8270DSIM	--	--	--	--	0.38	2.3	--	--	0.1483 U	0.0378 U	0.0458 U	0.7327 U
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	SW8270DSIM	--	--	--	--	3.9	6.2	--	--	0.1483 U	0.0378 U	0.0458 U	0.7327 U
n-Nitrosodiphenylamine	SW8270D	--	--	--	--	11	11	--	--	0.5931 U	0.1528 U	0.185 U	2.9307 U
Polycyclic Aromatic Hydrocarbons (µg/kg)													
2-Methylnaphthalene	SW8270D	--	670	--	1900	--	--	670	670	**16.3 J**	**20.5**	**12.6 J**	59.2 U
Acenaphthene	SW8270D	--	500	--	2000	--	--	500	500	**34.6**	**9.9 J**	19.8 U	59.2 U
Acenaphthylene	SW8270D	--	560	--	1300	--	--	1300	1300	**95.3**	19.4 U	19.8 U	**18.1 J**
Anthracene	SW8270D	--	960	--	13000	--	--	960	960	**187**	**10 J**	**9.5 J**	**26.1 J**
Benzo(a)anthracene	SW8270D	--	1300	--	5100	--	--	1300	1600	**357**	**8 J**	19.8 U	**25.8 J**
Benzo(a)pyrene	SW8270D	--	1600	--	3600	--	--	1600	1600	**275**	19.4 U	19.8 U	**38.5 J**
Benzo(g,h,i)perylene	SW8270D	--	670	--	3200	--	--	670	720	**195**	19.4 U	19.8 U	**40.1 J**
Chrysene	SW8270D	--	1400	--	21000	--	--	1400	2800	**883**	**14.7 J**	19.8 U	**60.5**
Dibenzo(a,h)anthracene	SW8270D	--	230	--	1900	--	--	230	230	**62.9**	19.4 U	19.8 U	59.2 U
Dibenzofuran	SW8270D	--	540	--	1700	--	--	540	540	**38**	19.4 U	**12.4 J**	59.2 U
Fluoranthene	SW8270D	--	1700	4600	30000	--	--	1700	2500	**1630**	**52.3**	**32.4**	**57.9 J**
Fluorene	SW8270D	--	540	--	3600	--	--	540	540	**22.1**	19.4 U	19.8 U	59.2 U
Indeno(1,2,3-c,d)pyrene	SW8270D	--	600	--	4400	--	--	600	690	**187**	19.4 U	19.8 U	**43.6 J**
Naphthalene	SW8270D	--	2100	--	2400	--	--	2100	2100	**44.7**	**247**	**95.7**	59.2 U
Phenanthrene	SW8270D	--	1500	--	21000	--	--	1500	1500	**588**	**82.1**	**45.6**	**32.1 J**
Pyrene	SW8270D	--	2600	11980	16000	--	--	2600	3300	**1370**	**46.5**	**36.7**	**56 J**
Total Benzofluoranthenes (b,j,k) (U = 0)	SW8270D	--	3200	--	9900	--	--	3200	3600	**1100**	**17.2 J**	39.5 U	**127**
Total HPAH (SMS) (U = 0)	SW8270D	--	12000	--	69000	--	--	12000	17000	**6059.9**	**138.7 J**	**69.1**	**449.4 J**
Total LPAH (SMS) (U = 0)	SW8270D	--	5200	--	29000	--	--	5200	5200	**971.7**	**349 J**	**150.8 J**	**76.3 J**
cPAHs (U=1/2)	SW8270D	78	--	--	--	--	--	--	--	**454.52**	**14.307**	**14.949**	**61.705**
Polycyclic Aromatic Hydrocarbons (mg/kg-OC)													
2-Methylnaphthalene	SW8270D	--	--	--	--	38	64	--	--	**0.5142 J**	**0.1614**	**0.1178 J**	2.9307 U
Acenaphthene	SW8270D	--	--	--	--	16	57	--	--	**1.0915**	**0.078 J**	0.185 U	2.9307 U
Acenaphthylene	SW8270D	--	--	--	--	66	66	--	--	**3.0063**	0.1528 U	0.185 U	**0.896 J**
Anthracene	SW8270D	--	--	--	--	220	1200	--	--	**5.899**	**0.0787 J**	**0.0888 J**	**1.2921 J**
Benzo(a)anthracene	SW8270D	--	--	--	--	110	270	--	--	**11.262**	**0.063 J**	0.185 U	**1.2772 J**
Benzo(a)pyrene	SW8270D	--	--	--	--	99	210	--	--	**8.675**	0.1528 U	0.185 U	**1.9059 J**
Benzo(g,h,i)perylene	SW8270D	--	--	--	--	31	78	--	--	**6.151**	0.1528 U	0.185 U	**1.9851 J**
Chrysene	SW8270D	--	--	--	--	110	460	--	--	**27.855**	**0.1157 J**	0.185 U	**2.995**
Dibenzo(a,h)anthracene	SW8270D	--	--	--	--	12	33	--	--	**1.9842**	0.1528 U	0.185 U	2.9307 U
Dibenzofuran	SW8270D	--	--	--	--	15	58	--	--	**1.1987**	0.1528 U	**0.1159 J**	2.9307 U
Fluoranthene	SW8270D	--	--	--	--	160	1200	--	--	**51.42**	**0.4118**	**0.3028**	**2.8663 J**
Fluorene	SW8270D	--	--	--	--	23	79	--	--	**0.6972**	0.1528 U	0.185 U	2.9307 U
Indeno(1,2,3-c,d)pyrene	SW8270D	--	--	--	--	34	88	--	--	**5.899**	0.1528 U	0.185 U	**2.1584 J**
Naphthalene	SW8270D	--	--	--	--	99	170	--	--	**1.4101**	**1.945**	**0.8944**	2.9307 U
Phenanthrene	SW8270D	--	--	--	--	100	480	--	--	**18.549**	**0.6465**	**0.4262**	**1.5891 J**
Pyrene	SW8270D	--	--	--	--	1000	1400	--	--	**43.218**	**0.3661**	**0.343**	**2.7723 J**
Total Benzofluoranthenes (b,j,k) (U = 0)	SW8270D	--	--	--	--	230	450	--	--	**34.7**	**0.1354 J**	0.3692 U	**6.287**
Total HPAH (SMS) (U = 0)	SW8270D	--	--	--	--	960	5300	--	--	**191.164**	**1.0921 J**	**0.6458**	**22.2475 J**
Total LPAH (SMS) (U = 0)	SW8270D	--	--	--	--	370	780	--	--	**30.653**	**2.748 J**	**1.4093 J**	**3.7772 J**

Table 4
Soil Boring Composite Analytical Results and Screening

									Sample ID	SB-COMP-01A-0-2.5[1]	SB-COMP-01B-2.5-5	SB-COMP-01ZA-5-7.5	SB-COMP-02A-0-2.5[1]
									Sample Date	5/24/2017	5/24/2017	5/24/2017	5/24/2017
									Depth	0 - 2.5 ft	2.5 - 5 ft	5 - 7.5 ft	0 - 2.5 ft
									Sample Type	N	N	N	N
									Matrix	SO	SO	SO	SO
		Draft Regional Background[3]	DMMP SL	DMMP BT	DMMP ML	SMS Marine Sediment SCO	SMS Marine Sediment CSL	Marine Sediment AET SCO	Marine Sediment AET CSL				
Pesticides (µg/kg)													
4,4'-DDD (p,p'-DDD)	SW8081B	--	16	--	--	--	--	--	--	0.96 UJ	0.99 UJ	0.99 UJ	1.97 UJ
4,4'-DDE (p,p'-DDE)	SW8081B	--	9	--	--	--	--	--	--	0.96 UJ	0.99 UJ	0.99 UJ	1.97 UJ
4,4'-DDT (p,p'-DDT)	SW8081B	--	12	--	--	--	--	--	--	0.96 UJ	0.99 UJ	0.99 UJ	1.97 UJ
Aldrin	SW8081B	--	9.5	--	--	--	--	--	--	0.48 UJ	0.49 UJ	0.5 UJ	0.98 UJ
Chlordane, alpha- (Chlordane, cis-)	SW8081B	--	--	--	--	--	--	--	--	0.48 UJ	0.49 UJ	0.5 UJ	0.98 UJ
Chlordane, beta- (Chlordane, trans-)	SW8081B	--	--	--	--	--	--	--	--	0.48 UJ	0.49 UJ	0.5 UJ	0.98 UJ
Dieldrin	SW8081B	--	1.9	--	1700	--	--	--	--	0.96 UJ	0.99 UJ	0.99 UJ	0.23 UJ[2]
Heptachlor	SW8081B	--	1.5	--	270	--	--	--	--	0.48 UJ	0.49 UJ	0.5 UJ	0.98 UJ
Nonachlor, cis-	SW8081B	--	--	--	--	--	--	--	--	0.96 U	0.99 U	0.99 U	1.97 U
Nonachlor, trans-	SW8081B	--	--	--	--	--	--	--	--	0.96 U	0.99 U	0.99 U	1.97 U
Oxychlordane	SW8081B	--	--	--	--	--	--	--	--	0.96 UJ	0.99 UJ	0.99 UJ	1.97 UJ
Sum 4,4 DDT, DDE, DDD (U = 0)	SW8081B	--	--	50	69	--	--	--	--	0.96 UJ	0.99 UJ	0.99 UJ	1.97 UJ
Total DMMP Chlordane (U = 0)	SW8081B	--	2.8	37		--	--	--	--	0.96 UJ	0.99 UJ	0.99 UJ	1.97 UJ
Dioxin Furans (ng/kg)													
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	E1613B	--	--	--	--	--	--	--	--	**10.4**	**1.24 J**	0.804 U	**10.5**
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	E1613B	--	--	--	--	--	--	--	--	**56.8**	**6.28**	**4.16**	**44.5**
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	E1613B	--	--	--	--	--	--	--	--	**69.2**	**7.18**	**6.16**	**29.6**
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	E1613B	--	--	--	--	--	--	--	--	**253**	**35.7**	**56.4**	**203**
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	E1613B	--	--	--	--	--	--	--	--	**99.9**	**17.6**	**16.7**	**52.5**
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	E1613B	--	--	--	--	--	--	--	--	**6420**	**1010**	**1760**	**1230**
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	E1613B	--	--	--	--	--	--	--	--	**50100 J**	**9560 J**	**20300 J**	**8010 J**
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	E1613B	--	--	--	--	--	--	--	--	**31.1**	**3.32**	**1.38**	**27.3**
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	E1613B	--	--	--	--	--	--	--	--	**28.2**	**2.88**	**1.99**	**18.4**
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	E1613B	--	--	--	--	--	--	--	--	**29.3**	**4.75**	**1.76**	**19.3**
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	E1613B	--	--	--	--	--	--	--	--	**75.5**	**21.3**	**24**	**22**
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	E1613B	--	--	--	--	--	--	--	--	**35.4**	**8.37**	**12.4**	**19.5**
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	E1613B	--	--	--	--	--	--	--	--	**28.3 J**	**4.36 J**	**4.48 J**	**9.43 J**
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	E1613B	--	--	--	--	--	--	--	--	**26.2 J**	**16.1**	**28.2**	**15.3**
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	E1613B	--	--	--	--	--	--	--	--	**707**	**389**	**1250**	**449**
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	E1613B	--	--	--	--	--	--	--	--	**45.2**	**20.6**	**53.2**	**14.8**
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	E1613B	--	--	--	--	--	--	--	--	**1520**	**1790**	**4960 J**	**746**
Total Tetrachlorodibenzofuran (TCDF)	E1613B	--	--	--	--	--	--	--	--	**625**	**89.4**	**52.6**	**557**
Total Pentachlorodibenzofuran (PeCDF)	E1613B	--	--	--	--	--	--	--	--	**445**	**113**	**131**	**345**
Total Hexachlorodibenzofuran (HxCDF)	E1613B	--	--	--	--	--	--	--	--	**1690**	**504**	**1450**	**761**
Total Heptachlorodibenzofuran (HpCDF)	E1613B	--	--	--	--	--	--	--	--	**2700**	**1820**	**6110**	**1420**
Total Tetrachlorodibenzo-p-dioxin (TCDD)	E1613B	--	--	--	--	--	--	--	--	**2620**	**197**	**81.8**	**1670**
Total Pentachlorodibenzo-p-dioxin (PeCDD)	E1613B	--	--	--	--	--	--	--	--	**2290**	**177**	**106**	**1360**
Total Hexachlorodibenzo-p-dioxin (HxCDD)	E1613B	--	--	--	--	--	--	--	--	**4050**	**338**	**283**	**2040**
Total Heptachlorodibenzo-p-dioxin (HpCDD)	E1613B	--	--	--	--	--	--	--	--	**20000**	**1890**	**3380**	**2580**
Total Dioxin/Furan TEQ 2005 (Mammal) (U = 1/2)	E1613B	19	4	10	--	--	--	--	--	**225.9 J**	**38.0 J**	**58.3 J**	**118.8 J**
Total Dioxin/Furan TEQ 2005 (Mammal) (U = 0)	E1613B	19	4	10	--	--	--	--	--	**225.9 J**	**38.0 J**	**57.9 J**	**118.8 J**
PCB Aroclors (µg/kg)													
Aroclor 1016	SW8082A	--	--	--	--	--	--	--	--	3.9 U	4 U	4 U	3.9 U
Aroclor 1221	SW8082A	--	--	--	--	--	--	--	--	3.9 U	4 U	4 U	3.9 U
Aroclor 1232	SW8082A	--	--	--	--	--	--	--	--	3.9 U	4 U	4 U	3.9 U
Aroclor 1242	SW8082A	--	--	--	--	--	--	--	--	3.9 U	4 U	4 U	3.9 U
Aroclor 1248	SW8082A	--	--	--	--	--	--	--	--	3.9 U	4 U	4 U	3.9 U
Aroclor 1254	SW8082A	--	--	--	--	--	--	--	--	**5.7 J**	4 U	4 U	**3.2 J**
Aroclor 1260	SW8082A	--	--	--	--	--	--	--	--	**8 J**	**3.2 J**	4 U	**3.2 J**
Total PCB Aroclors (SMS Marine 2013) (U = 0)	SW8082A	--	130	--	3100	--	--	130	1000	**13.7 J**	**3.2 J**	4 U	**6.4 J**
PCB Aroclors (mg/kg-OC)													
Total PCB Aroclors (SMS Marine 2013) (U = 0)	SW8082A	--	--	38	--	12	65	--	--	**0.4322 J**	**0.0252 J**	0.0374 U	**0.3168 J**

Table 4
Soil Boring Composite Analytical Results and Screening

									Sample ID	SB-COMP-02B-2.5-5	SB-COMP-02ZA-5-7.5	SB-COMP-02ZB-7.5-10	SB-COMP-102B-2.5-5
									Sample Date	5/24/2017	5/24/2017	5/24/2017	5/24/2017
									Depth	2.5 - 5 ft	5 - 7.5 ft	7.5 - 10 ft	2.5 - 5 ft
									Sample Type	N	N	N	FD
									Matrix	SO	SO	SO	SO
		Draft Regional Background[3]	DMMP SL	DMMP BT	DMMP ML	SMS Marine Sediment SCO	SMS Marine Sediment CSL	Marine Sediment AET SCO	Marine Sediment AET CSL				
Conventional Parameters (mg/kg)													
Ammonia as nitrogen	SM4500NH3H	--	--	--	--	--	--	--	--	**16.5**	**18.2**	**19.3**	**23.1**
Sulfide	SM4500S2D	--	--	--	--	--	--	--	--	**1.5 J**	**-- R**	**23.4 J**	**-- R**
Conventional Parameters (pct)													
Loss on ignition	PSEP	--	--	--	--	--	--	--	--	**13.3**	**26.6**	**46.4**	**19.9**
Moisture (water) content	D2216	--	--	--	--	--	--	--	--	**64.4**	**85.2**	**164.2**	**85.4**
Total organic carbon	Plumb 1981	--	--	--	--	--	--	--	--	**6.8 J**	**8.11 J**	**18.9 J**	**10.4 J**
Total solids	SM2540G	--	--	--	--	--	--	--	--	**48.02**	**46.21**	**40.29**	**48.45**
Grain Size (pct)													
Gravel	PSEP	--	--	--	--	--	--	--	--	**32.8**	**29.1**	**25.7**	**49.4**
Sand, very coarse	PSEP	--	--	--	--	--	--	--	--	**10.4**	**9.3**	**10.7**	**8.7**
Sand, coarse	PSEP	--	--	--	--	--	--	--	--	**9.3**	**9.8**	**11.5**	**7.8**
Sand, medium	PSEP	--	--	--	--	--	--	--	--	**9.2**	**10.5**	**12.6**	**8.2**
Sand, fine	PSEP	--	--	--	--	--	--	--	--	**6.8**	**7.9**	**9.9**	**5.9**
Sand, very fine	PSEP	--	--	--	--	--	--	--	--	**4.8**	**4.7**	**5.7**	**3.9**
Silt, coarse	PSEP	--	--	--	--	--	--	--	--	**7.7**	**10.2**	**0.1**	**0.2**
Silt, medium	PSEP	--	--	--	--	--	--	--	--	**4.4**	**4.4**	**6.8**	**4.2**
Silt, fine	PSEP	--	--	--	--	--	--	--	--	**3.6**	**4.2**	**4.7**	**2.8**
Silt, very fine	PSEP	--	--	--	--	--	--	--	--	**3.5**	**3.2**	**3.9**	**2.7**
Clay, coarse	PSEP	--	--	--	--	--	--	--	--	**2.2**	**2.3**	**2.2**	**1.8**
Clay, medium	PSEP	--	--	--	--	--	--	--	--	**2**	**1.9**	**2.1**	**1.7**
Clay, fine	PSEP	--	--	--	--	--	--	--	--	**3.3**	**2.5**	**4.3**	**2.8**
Total Gravel	PSEP	--	--	--	--	--	--	--	--	**32.8**	**29.1**	**25.7**	**49.4**
Total Sand	PSEP	--	--	--	--	--	--	--	--	**40.5**	**42.2**	**50.4**	**34.5**
Total Silt	PSEP	--	--	--	--	--	--	--	--	**19.2**	**22**	**15.5**	**9.9**
Total Clay	PSEP	--	--	--	--	--	--	--	--	**7.5**	**6.7**	**8.6**	**6.3**
Total Fines (silt + clay)	PSEP	--	--	--	--	--	--	--	--	**26.7**	**28.7**	**24.1**	**16.2**
Metals (mg/kg)													
Antimony	SW6020A	--	150	--	200	--	--	--	--	**-- R**	**-- R**	**-- R**	**-- R**
Arsenic	SW6020A	--	57	507.1	700	57	93	57	93	**3.47 J**	**3.1 J**	**3.19 J**	**2.86 J**
Cadmium	SW6020A	--	5.1	11.3	14	5.1	6.7	5.1	6.7	**0.13 J**	**0.39**	**0.12 J**	**0.08 J**
Chromium	SW6020A	--	260	260	--	260	270	260	270	**41.7 J**	**43.3 J**	**41.1 J**	**40 J**
Copper	SW6020A	--	390	1027	1300	390	390	390	390	**157 J**	**107 J**	**90.4 J**	**129 J**
Lead	SW6020A	--	450	975	1200	450	530	450	530	**19.5**	**7.53**	**6.32**	**13.8**
Mercury	SW7471B	--	0.41	1.5	2.3	0.41	0.59	0.41	0.59	0.04497 U	**0.04765**	**0.05487**	**0.0875**
Selenium	SW6020A	--		3	--	--	--	--	--	**1.82**	**1.92**	**1.4**	**2.31**
Silver	SW6020A	--	6.1	6.1	8.4	6.1	6.1	6.1	6.1	**0.22 J**	**0.18 J**	**0.17 J**	**0.18 J**
Zinc	SW6020A	--	410	2783	3800	410	960	410	960	**87.4**	**76.5**	**65.6**	**74.3**
Semivolatile Organics (µg/kg)													
1,2,4-Trichlorobenzene	SW8270DSIM	--	31	--	64	--	--	31	51	4.8 U	14.8 U	4.9 U	4.9 U
1,2-Dichlorobenzene	SW8270DSIM	--	35	--	110	--	--	35	50	4.8 U	14.8 U	4.9 U	4.9 U
1,4-Dichlorobenzene	SW8270DSIM	--	110	--	120	--	--	110	110	4.8 U	14.8 U	4.9 U	4.9 U
2,4-Dimethylphenol	SW8270D	--	29	--	210	29	29	29	29	26 UJ[2]	79.3 UJ[2]	26 UJ[2]	26.2 UJ[2]
2-Methylphenol (o-Cresol)	SW8270DSIM	--	63	--	77	63	63	63	63	4.8 U	14.8 U	4.9 U	**3.2 J**
4-Methylphenol (p-Cresol)	SW8270DSIM	--	670	--	3600	670	670	670	670	**50**	**46**	**34.2**	**65**
Benzoic acid	SW8270D	--	650	--	760	650	650	650	650	**95.2 J**	592 UJ	**84.3 J**	**127 J**
Benzyl alcohol	SW8270D	--	57	--	870	57	73	57	73	19.4 U	59.2 U	19.4 U	19.6 U
bis(2-Ethylhexyl)phthalate	SW8270D	--	1300	--	8300	--	--	1300	3100	48.4 U	148 U	48.5 U	48.9 U
Butylbenzyl phthalate	SW8270DSIM	--	63	--	970	--	--	63	900	4.8 U	14.8 U	4.9 U	4.9 U
Diethyl phthalate	SW8270DSIM	--	200	--	1200	--	--	200	1200	19.4 U	59.2 U	19.4 U	19.6 U
Dimethyl phthalate	SW8270DSIM	--	71	--	1400	--	--	71	160	4.8 U	14.8 U	4.9 U	4.9 U
Di-n-butyl phthalate	SW8270D	--	1400	--	5100	--	--	1400	1400	19.4 U	59.2 U	19.4 U	19.6 U
Di-n-octyl phthalate	SW8270D	--	6200	--	6200	--	--	6200	6200	19.4 U	59.2 U	19.4 U	19.6 U
Hexachlorobenzene	SW8270DSIM	--	22	168	230	--	--	22	70	4.8 U	14.8 U	4.9 U	4.9 U
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	SW8270DSIM	--	11	--	270	--	--	11	120	4.8 U	14.8 U	4.9 U	4.9 U

Table 4
Soil Boring Composite Analytical Results and Screening

									Sample ID	SB-COMP-02B-2.5-5	SB-COMP-02ZA-5-7.5	SB-COMP-02ZB-7.5-10	SB-COMP-102B-2.5-5
									Sample Date	5/24/2017	5/24/2017	5/24/2017	5/24/2017
									Depth	2.5 - 5 ft	5 - 7.5 ft	7.5 - 10 ft	2.5 - 5 ft
									Sample Type	N	N	N	FD
									Matrix	SO	SO	SO	SO
		Draft Regional Background[3]	DMMP SL	DMMP BT	DMMP ML	SMS Marine Sediment SCO	SMS Marine Sediment CSL	Marine Sediment AET SCO	Marine Sediment AET CSL				
n-Nitrosodiphenylamine	SW8270D	--	28	--	130	--	--	28	40	19.4 U	28.3 U[2]	19.4 U	19.6 U
Pentachlorophenol	SW8270D	--	400	504	690	360	690	360	690	96.9 U	296 U	**36.1 J**	**40.2 J**
Phenol	SW8270DSIM	--	420	--	1200	420	1200	420	1200	4.8 U	**62.1**	4.9 U	4.9 U
Semivolatile Organics (mg/kg-OC)													
1,2,4-Trichlorobenzene	SW8270DSIM	--	--	--	--	0.81	1.8	--	--	0.0706 U	0.1825 U	0.0259 U	0.0471 U
1,2-Dichlorobenzene	SW8270DSIM	--	--	--	--	2.3	2.3	--	--	0.0706 U	0.1825 U	0.0259 U	0.0471 U
1,4-Dichlorobenzene	SW8270DSIM	--	--	--	--	3.1	9	--	--	0.0706 U	0.1825 U	0.0259 U	0.0471 U
bis(2-Ethylhexyl)phthalate	SW8270D	--	--	--	--	47	78	--	--	0.7118 U	1.825 U	0.2566 U	0.4702 U
Butylbenzyl phthalate	SW8270DSIM	--	--	--	--	4.9	64	--	--	0.0706 U	0.1825 U	0.0259 U	0.0471 U
Diethyl phthalate	SW8270DSIM	--	--	--	--	61	110	--	--	0.2853 U	0.73 U	0.1026 U	0.1885 U
Dimethyl phthalate	SW8270DSIM	--	--	--	--	53	53	--	--	0.0706 U	0.1825 U	0.0259 U	0.0471 U
Di-n-butyl phthalate	SW8270D	--	--	--	--	220	1700	--	--	0.2853 U	0.73 U	0.1026 U	0.1885 U
Di-n-octyl phthalate	SW8270D	--	--	--	--	58	4500	--	--	0.2853 U	0.73 U	0.1026 U	0.1885 U
Hexachlorobenzene	SW8270DSIM	--	--	--	--	0.38	2.3	--	--	0.0706 U	0.1825 U	0.0259 U	0.0471 U
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	SW8270DSIM	--	--	--	--	3.9	6.2	--	--	0.0706 U	0.1825 U	0.0259 U	0.0471 U
n-Nitrosodiphenylamine	SW8270D	--	--	--	--	11	11	--	--	0.2853 U	0.73 U	0.1026 U	0.1885 U
Polycyclic Aromatic Hydrocarbons (µg/kg)													
2-Methylnaphthalene	SW8270D	--	670	--	1900	--	--	670	670	**8.7 J**	**17.6 J**	**10.3 J**	**8.6 J**
Acenaphthene	SW8270D	--	500	--	2000	--	--	500	500	19.4 U	59.2 U	19.4 U	19.6 U
Acenaphthylene	SW8270D	--	560	--	1300	--	--	1300	1300	19.4 U	59.2 U	19.4 U	19.6 U
Anthracene	SW8270D	--	960	--	13000	--	--	960	960	19.4 U	59.2 U	**10 J**	19.6 U
Benzo(a)anthracene	SW8270D	--	1300	--	5100	--	--	1300	1600	19.4 U	59.2 U	**14.5 J**	19.6 U
Benzo(a)pyrene	SW8270D	--	1600	--	3600	--	--	1600	1600	19.4 U	**48.3 J**	**12.1 J**	19.6 U
Benzo(g,h,i)perylene	SW8270D	--	670	--	3200	--	--	670	720	19.4 U	**54.8 J**	19.4 U	19.6 U
Chrysene	SW8270D	--	1400	--	21000	--	--	1400	2800	**10.8 J**	59.2 U	**25.7**	19.6 U
Dibenzo(a,h)anthracene	SW8270D	--	230	--	1900	--	--	230	230	19.4 U	59.2 U	19.4 U	19.6 U
Dibenzofuran	SW8270D	--	540	--	1700	--	--	540	540	19.4 U	59.2 U	19.4 U	19.6 U
Fluoranthene	SW8270D	--	1700	4600	30000	--	--	1700	2500	**18.9 J**	**20.5 J**	**11.5 J**	**21.3**
Fluorene	SW8270D	--	540	--	3600	--	--	540	540	19.4 U	59.2 U	19.4 U	19.6 U
Indeno(1,2,3-c,d)pyrene	SW8270D	--	600	--	4400	--	--	600	690	19.4 U	59.2 U	19.4 U	19.6 U
Naphthalene	SW8270D	--	2100	--	2400	--	--	2100	2100	**65.4**	**52.7 J**	**26.5**	**73.3**
Phenanthrene	SW8270D	--	1500	--	21000	--	--	1500	1500	**33.2**	59.2 U	**25.5**	**32.3**
Pyrene	SW8270D	--	2600	11980	16000	--	--	2600	3300	**19 J**	**36.8 J**	**39.4**	**18.8 J**
Total Benzofluoranthenes (b,j,k) (U = 0)	SW8270D	--	3200	--	9900	--	--	3200	3600	**14.7 J**	118 U	38.8 U	**13.4 J**
Total HPAH (SMS) (U = 0)	SW8270D	--	12000	--	69000	--	--	12000	17000	**63.4 J**	**160.4 J**	**103.2 J**	**53.5 J**
Total LPAH (SMS) (U = 0)	SW8270D	--	5200	--	29000	--	--	5200	5200	**98.6**	**52.7 J**	**62 J**	**105.6**
cPAHs (U=1/2)	SW8270D	78	--	--	--	--	--	--	--	**14.188**	**63.376**	**17.687**	**14.178**
Polycyclic Aromatic Hydrocarbons (mg/kg-OC)													
2-Methylnaphthalene	SW8270D	--	--	--	--	38	64	--	--	**0.1279 J**	**0.217 J**	**0.0545 J**	**0.0827 J**
Acenaphthene	SW8270D	--	--	--	--	16	57	--	--	0.2853 U	0.73 U	0.1026 U	0.1885 U
Acenaphthylene	SW8270D	--	--	--	--	66	66	--	--	0.2853 U	0.73 U	0.1026 U	0.1885 U
Anthracene	SW8270D	--	--	--	--	220	1200	--	--	0.2853 U	0.73 U	**0.0529 J**	0.1885 U
Benzo(a)anthracene	SW8270D	--	--	--	--	110	270	--	--	0.2853 U	0.73 U	**0.0767 J**	0.1885 U
Benzo(a)pyrene	SW8270D	--	--	--	--	99	210	--	--	0.2853 U	**0.5956 J**	**0.064 J**	0.1885 U
Benzo(g,h,i)perylene	SW8270D	--	--	--	--	31	78	--	--	0.2853 U	**0.6757 J**	0.1026 U	0.1885 U
Chrysene	SW8270D	--	--	--	--	110	460	--	--	**0.1588 J**	0.73 U	**0.136**	0.1885 U
Dibenzo(a,h)anthracene	SW8270D	--	--	--	--	12	33	--	--	0.2853 U	0.73 U	0.1026 U	0.1885 U
Dibenzofuran	SW8270D	--	--	--	--	15	58	--	--	0.2853 U	0.73 U	0.1026 U	0.1885 U
Fluoranthene	SW8270D	--	--	--	--	160	1200	--	--	**0.2779 J**	**0.2528 J**	**0.0608 J**	**0.2048**
Fluorene	SW8270D	--	--	--	--	23	79	--	--	0.2853 U	0.73 U	0.1026 U	0.1885 U
Indeno(1,2,3-c,d)pyrene	SW8270D	--	--	--	--	34	88	--	--	0.2853 U	0.73 U	0.1026 U	0.1885 U
Naphthalene	SW8270D	--	--	--	--	99	170	--	--	**0.9618**	**0.6498 J**	**0.1402**	**0.7048**
Phenanthrene	SW8270D	--	--	--	--	100	480	--	--	**0.4882**	0.73 U	**0.1349**	**0.3106**
Pyrene	SW8270D	--	--	--	--	1000	1400	--	--	**0.2794 J**	**0.4538 J**	**0.2085**	**0.1808 J**
Total Benzofluoranthenes (b,j,k) (U = 0)	SW8270D	--	--	--	--	230	450	--	--	**0.2162 J**	1.455 U	0.2053 U	**0.1288 J**
Total HPAH (SMS) (U = 0)	SW8270D	--	--	--	--	960	5300	--	--	**0.9324 J**	**1.9778 J**	**0.546 J**	**0.5144 J**
Total LPAH (SMS) (U = 0)	SW8270D	--	--	--	--	370	780	--	--	**1.45**	**0.6498 J**	**0.328 J**	**1.0154**

Table 4
Soil Boring Composite Analytical Results and Screening

									Sample ID	SB-COMP-02B-2.5-5	SB-COMP-02ZA-5-7.5	SB-COMP-02ZB-7.5-10	SB-COMP-102B-2.5-5
									Sample Date	5/24/2017	5/24/2017	5/24/2017	5/24/2017
									Depth	2.5 - 5 ft	5 - 7.5 ft	7.5 - 10 ft	2.5 - 5 ft
									Sample Type	N	N	N	FD
									Matrix	SO	SO	SO	SO
		Draft Regional Background[3]	DMMP SL	DMMP BT	DMMP ML	SMS Marine Sediment SCO	SMS Marine Sediment CSL	Marine Sediment AET SCO	Marine Sediment AET CSL				
Pesticides (µg/kg)													
4,4'-DDD (p,p'-DDD)	SW8081B	--	16	--	--	--	--	--	--	0.99 UJ	1.98 UJ	0.99 UJ	0.99 UJ
4,4'-DDE (p,p'-DDE)	SW8081B	--	9	--	--	--	--	--	--	0.99 UJ	1.98 UJ	0.99 UJ	0.99 UJ
4,4'-DDT (p,p'-DDT)	SW8081B	--	12	--	--	--	--	--	--	0.99 UJ	1.98 UJ	0.99 UJ	0.99 UJ
Aldrin	SW8081B	--	9.5	--	--	--	--	--	--	0.49 UJ	0.99 UJ	0.49 UJ	0.5 UJ
Chlordane, alpha- (Chlordane, cis-)	SW8081B	--	--	--	--	--	--	--	--	0.49 UJ	0.99 UJ	0.49 UJ	0.5 UJ
Chlordane, beta- (Chlordane, trans-)	SW8081B	--	--	--	--	--	--	--	--	0.49 UJ	0.99 UJ	0.49 UJ	0.5 UJ
Dieldrin	SW8081B	--	1.9	--	1700	--	--	--	--	0.99 UJ	0.23 UJ[2]	0.99 UJ	0.99 UJ
Heptachlor	SW8081B	--	1.5	--	270	--	--	--	--	0.49 UJ	0.99 UJ	0.49 UJ	0.5 UJ
Nonachlor, cis-	SW8081B	--	--	--	--	--	--	--	--	0.99 U	1.98 U	0.99 U	0.99 U
Nonachlor, trans-	SW8081B	--	--	--	--	--	--	--	--	0.99 U	1.98 U	0.99 U	0.99 U
Oxychlordane	SW8081B	--	--	--	--	--	--	--	--	0.99 UJ	1.98 UJ	0.99 UJ	0.99 UJ
Sum 4,4 DDT, DDE, DDD (U = 0)	SW8081B	--	--	50	69	--	--	--	--	0.99 UJ	1.98 UJ	0.99 UJ	0.99 UJ
Total DMMP Chlordane (U = 0)	SW8081B	--	2.8	37		--	--	--	--	0.99 UJ	1.98 UJ	0.99 UJ	0.99 UJ
Dioxin Furans (ng/kg)													
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	E1613B	--	--	--	--	--	--	--	--	**1.26**	0.6 U	0.894 U	**1.14**
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	E1613B	--	--	--	--	--	--	--	--	**6.66**	**3.98**	**5.31**	**5.68**
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	E1613B	--	--	--	--	--	--	--	--	**10.5**	**5.52**	**6.63**	**8.73**
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	E1613B	--	--	--	--	--	--	--	--	**53.2**	**39.6**	**62.7**	**40.3**
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	E1613B	--	--	--	--	--	--	--	--	**17**	**15.5**	**22.6**	**18.9 J**
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	E1613B	--	--	--	--	--	--	--	--	**910**	**1130**	**1310**	**754**
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	E1613B	--	--	--	--	--	--	--	--	**9660 J**	**15700 J**	**19000 J**	**8750 J**
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	E1613B	--	--	--	--	--	--	--	--	**2.77**	**1.02**	**1.54**	**2.25**
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	E1613B	--	--	--	--	--	--	--	--	**2.35**	**1.61**	**3.19**	**2.21**
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	E1613B	--	--	--	--	--	--	--	--	**3.06**	**1.64 J**	**3.03**	**2.84**
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	E1613B	--	--	--	--	--	--	--	--	**14.9**	**18.5**	**50.9**	**14.1**
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	E1613B	--	--	--	--	--	--	--	--	**7.03**	**9.2**	**14**	**6.3**
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	E1613B	--	--	--	--	--	--	--	--	**3.49**	**4.6 J**	**8.72 J**	**4.96 J**
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	E1613B	--	--	--	--	--	--	--	--	**14.1 J**	**22.7**	**28.9**	**13.1**
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	E1613B	--	--	--	--	--	--	--	--	**438**	**604**	**673**	**420**
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	E1613B	--	--	--	--	--	--	--	--	**18.6**	**28.6**	**48.5**	**17**
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	E1613B	--	--	--	--	--	--	--	--	**1090**	**1850**	**1090**	**1290**
Total Tetrachlorodibenzofuran (TCDF)	E1613B	--	--	--	--	--	--	--	--	**86.5**	**42.8**	**66.7**	**67.6**
Total Pentachlorodibenzofuran (PeCDF)	E1613B	--	--	--	--	--	--	--	--	**104**	**110**	**178**	**94.7**
Total Hexachlorodibenzofuran (HxCDF)	E1613B	--	--	--	--	--	--	--	--	**531**	**788**	**1010**	**549**
Total Heptachlorodibenzofuran (HpCDF)	E1613B	--	--	--	--	--	--	--	--	**1830**	**2740**	**2540**	**1800**
Total Tetrachlorodibenzo-p-dioxin (TCDD)	E1613B	--	--	--	--	--	--	--	--	**283**	**27.9**	**37.7**	**196**
Total Pentachlorodibenzo-p-dioxin (PeCDD)	E1613B	--	--	--	--	--	--	--	--	**196**	**41**	**51.3**	**155**
Total Hexachlorodibenzo-p-dioxin (HxCDD)	E1613B	--	--	--	--	--	--	--	--	**454**	**255**	**348**	**593**
Total Heptachlorodibenzo-p-dioxin (HpCDD)	E1613B	--	--	--	--	--	--	--	--	**1750**	**2310**	**2740**	**1430**
Total Dioxin/Furan TEQ 2005 (Mammal) (U = 1/2)	E1613B	19	4	10	--	--	--	--	--	**38.1 J**	**39.4 J**	**52.7 J**	**33.5 J**
Total Dioxin/Furan TEQ 2005 (Mammal) (U = 0)	E1613B	19	4	10	--	--	--	--	--	**38.1 J**	**39.1 J**	**52.3 J**	**33.5 J**
PCB Aroclors (µg/kg)													
Aroclor 1016	SW8082A	--	--	--	--	--	--	--	--	4 U	4 U	4 U	4 U
Aroclor 1221	SW8082A	--	--	--	--	--	--	--	--	4 U	4 U	4 U	4 U
Aroclor 1232	SW8082A	--	--	--	--	--	--	--	--	4 U	4 U	4 U	4 U
Aroclor 1242	SW8082A	--	--	--	--	--	--	--	--	4 U	4 U	4 U	4 U
Aroclor 1248	SW8082A	--	--	--	--	--	--	--	--	4 U	4 U	4 U	4 U
Aroclor 1254	SW8082A	--	--	--	--	--	--	--	--	**3.6 J**	4 U	4 U	**3.5 J**
Aroclor 1260	SW8082A	--	--	--	--	--	--	--	--	**3.3 J**	4 U	4 U	**3.3 J**
Total PCB Aroclors (SMS Marine 2013) (U = 0)	SW8082A	--	130	--	3100	--	--	130	1000	**6.9 J**	4 U	4 U	**6.8 J**
PCB Aroclors (mg/kg-OC)													
Total PCB Aroclors (SMS Marine 2013) (U = 0)	SW8082A	--	--	38	--	12	65	--	--	**0.1015 J**	0.0493 U	0.0212 U	**0.0654 J**

Table 4
Soil Boring Composite Analytical Results and Screening

Notes:
Detected concentration is greater than one or more screening level(s)
Non detect concentration is greater than one or more screening level(s)
[1] OC-normalized criteria, when applicable for a specific chemical, is used for samples with TOC in range (0.5% - 3.5%). This applies to samples SB-COMP-01A-0-2.5 and SB-COMP-02A-0-2.5.
[2] The method detect limit is reported for this sample result.
[3] South Puget Sound Regional Background (Draft Final Data Evaluation Summary, Ecology 2017)
Bold = Detected result
µg: microgram
AET: Apparent Effects Threshold; criteria from Washington Sediment Cleanup Users Manual II
BT: bioaccumulation trigger
CSL: Cleanup Screening Level
cPAHs: carcinogenic polycyclic aromatic hydrocarbons
DMMP: Dredged Material Management Program; criteria from the DMMP User Manual
ft: foot
HPAH: high molecular weight polycyclic aromatic hydrocarbon
kg: kilogram
LPAH: low molecular weight polycyclic aromatic hydrocarbon
mg: milligram
ML: maximum level
ng: nanogram
OC: organic carbon
PCB: polychlorinated biphenyl
pct: percent
PSEP: Puget Sound Estuary Program
SCO: Sediment Cleanup Objectives
SL: screening level
SMS: Sediment Management Standards
TEQ: toxic equivalent quotient
TOC: total organic carbon

J: Estimated value
U: Compound analyzed, but not detected above detection limit
UJ: Compound analyzed, but not detected above estimated detection limit
R: Rejected

Table 5
Soil Grab Analytical Results and Screening

								Sample ID	GS-COMP-01-0-0.5	GS-COMP-02-0-0.5	GS-COMP-03-0-0.5	GS-COMP-04-0-0.5	GS-COMP-103-0-0.5
								Sample Date	5/24/2017	5/24/2017	5/24/2017	5/24/2017	5/24/2017
								Depth	0 - 0.5 ft	0 - 0.5 ft	0 - 0.5 ft	0 - 0.5 ft	0 - 0.5 ft
								Sample Type	N	N	N	N	FD
								Matrix	SO	SO	SO	SO	SO
		Draft Regional Background[1]	MTCA A Industrial	DMMP SL	DMMP BT	DMMP ML	Marine Sediment AET SCO	Marine Sediment AET CSL					
Conventional Parameters (pct)													
Total solids	SM2540G	--	--	--	--	--	--	--	**93.4**	**91.1**	**93.9**	**90.3**	**93.5**
Polycyclic Aromatic Hydrocarbons (µg/kg)													
2-Methylnaphthalene	SW8270D	--	5.00E+03	670	--	1900	670	670	**20.1**	**6.5 J**	**29.5**	19.9 U	**29.4**
Acenaphthene	SW8270D	--	2.10E+08	500	--	2000	500	500	**33.7**	19.8 U	**31.2**	19.9 U	**20.3**
Acenaphthylene	SW8270D	--	--	560	--	1300	1300	1300	**307**	**23.3**	**140**	**30.9**	**144**
Anthracene	SW8270D	--	1.05E+09	960	--	13000	960	960	**367**	**35.9**	**162**	**27.5**	**169**
Benzo(a)anthracene	SW8270D	--	1.80E+05	1300	--	5100	1300	1600	**635**	**47.7**	**343**	**161**	**269**
Benzo(a)pyrene	SW8270D	--	2.00E+03	1600	--	3600	1600	1600	**704**	**46.3**	**355**	**84.9**	**348**
Benzo(g,h,i)perylene	SW8270D	--	--	670	--	3200	670	720	**495**	**40.6**	**228**	**55.6**	**244**
Chrysene	SW8270D	--	1.80E+07	1400	--	21000	1400	2800	**1430**	**178**	**562**	**268**	**557**
Dibenzo(a,h)anthracene	SW8270D	--	1.80E+04	230	--	1900	230	230	**216**	**12 J**	**85.5**	**28.2**	**87.1**
Fluoranthene	SW8270D	--	1.40E+08	1700	4600	30000	1700	2500	**1240**	**176**	**783 J**	**253**	**646**
Fluorene	SW8270D	--	1.40E+08	540	--	3600	540	540	**28.8**	19.8 U	**15.9 J**	19.9 U	19.1 U
Indeno(1,2,3-c,d)pyrene	SW8270D	--	1.80E+05	600	--	4400	600	690	**574**	**37.4**	**254**	**55.6**	**287**
Naphthalene	SW8270D	--	5.00E+03	2100	--	2400	2100	2100	**21.8**	**14.4 J**	**41**	**9.5 J**	**32.4**
Phenanthrene	SW8270D	--	--	1500	--	21000	1500	1500	**243**	**67.9**	**230**	**30.7**	**179**
Pyrene	SW8270D	--	1.05E+08	2600	11980	16000	2600	3300	**1190**	**146**	**894 J**	**334**	**638**
Total Benzofluoranthenes (b,j,k) (U = 0)	SW8270D	--	1.80E+05	3200	--	9900	3200	3600	**3180**	**237**	**1320 J**	**414**	**1410**
Total HPAH (SMS) (U = 0)	SW8270D	--	--	12000	--	69000	12000	17000	**9664**	**921 J**	**4824.5 J**	**1654.3**	**4486.1**
Total LPAH (SMS) (U = 0)	SW8270D	--	--	5200	--	29000	5200	5200	**1001.3**	**141.5 J**	**620.1 J**	**98.6 J**	**544.7**
cPAHs (U=1/2)	SW8270D	78	2.00E+03	--	--	--	--	--	**1178.8**	**81.5**	**560.9**	**153.5**	**558.9**

Notes:

Detected concentration is greater than one or more screening level(s)

Bold = Detected result

[1] South Puget Sound Regional Background (Draft Final Data Evaluation Summary, Ecology 2017)
µg: microgram
AET: Apparent Effects Threshold; criteria from Washington Sediment Cleanup Users Manual II
BT: bioaccumulation trigger
CSL: Cleanup Screening Level
cPAHs: carcinogenic polycyclic aromatic hydrocarbons
DMMP: Dredged Material Management Program; criteria from the DMMP User Manual
ft: foot
HPAH: high molecular weight polycyclic aromatic hydrocarbon
kg: kilogram
LPAH: low molecular weight polycyclic aromatic hydrocarbon
ML: maximum level
MTCA: Model Toxics Control Act
pct: percent
SCO: Sediment Cleanup Objectives
SL: screening level
SMS: Sediment Management Standards

J = Estimated value
U = Compound analyzed, but not detected above detection limit

Table 6
Soil Boring Composite Analytical Results and MTCA Screening

		Sample ID	SB-COMP-01A-0-2.5[1]	SB-COMP-01B-2.5-5	SB-COMP-01ZA-5-7.5	SB-COMP-02A-0-2.5[1]	SB-COMP-02B-2.5-5	SB-COMP-02ZA-5-7.5	SB-COMP-02ZB-7.5-10	SB-COMP-102B-2.5-5
		Sample Date	5/24/2017	5/24/2017	5/24/2017	5/24/2017	5/24/2017	5/24/2017	5/24/2017	5/24/2017
		Depth	0 - 2.5 ft	2.5 - 5 ft	5 - 7.5 ft	0 - 2.5 ft	2.5 - 5 ft	5 - 7.5 ft	7.5 - 10 ft	2.5 - 5 ft
		Sample Type	N	N	N	N	N	N	N	FD
		Matrix	SO	SO	SO	SO	SO	SO	SO	SO
		MTCA Industrial[1]								
Metals (mg/kg)										
Antimony	SW6020A	1.40E+03	**0.37 J**	0.35 UJ	**-- R**	**-- R**	**-- R**	**-- R**	**-- R**	**-- R**
Arsenic	SW6020A	2.00E+01	**8.37 J**	**1.96 J**	**2.45 J**	**2.82 J**	**3.47 J**	**3.1 J**	**3.19 J**	**2.86 J**
Cadmium	SW6020A	2.00E+00	**0.32**	**0.09 J**	**0.16 J**	**0.16**	**0.13 J**	**0.39**	**0.12 J**	**0.08 J**
Chromium	SW6020A	2.00E+03	**39.5 J**	**28.7 J**	**68.5 J**	**36.2 J**	**41.7 J**	**43.3 J**	**41.1 J**	**40 J**
Copper	SW6020A	1.40E+05	**189 J**	**83.4 J**	**87.9 J**	**91.6 J**	**157 J**	**107 J**	**90.4 J**	**129 J**
Lead	SW6020A	1.00E+03	**199**	**10.1**	**7.97**	**9.89**	**19.5**	**7.53**	**6.32**	**13.8**
Mercury	SW7471B	2.00E+00	**0.05306**	**0.0651**	**0.05439**	**0.0229**	0.04497 U	**0.04765**	**0.05487**	**0.0875**
Selenium	SW6020A	1.75E+04	**1.48**	**1.11**	**1.67**	**1.71**	**1.82**	**1.92**	**1.4**	**2.31**
Silver	SW6020A	1.75E+04	**0.15 J**	**0.12 J**	**0.16 J**	**0.19 J**	**0.22 J**	**0.18 J**	**0.17 J**	**0.18 J**
Zinc	SW6020A	1.05E+06	**192**	**69**	**71.8**	**92.1**	**87.4**	**76.5**	**65.6**	**74.3**
Semivolatile Organics (µg/kg)										
1,2,4-Trichlorobenzene	SW8270DSIM	--	4.7 U	4.8 U	4.9 U	14.8 U	4.8 U	14.8 U	4.9 U	4.9 U
1,2-Dichlorobenzene	SW8270DSIM	--	4.7 U	4.8 U	4.9 U	14.8 U	4.8 U	14.8 U	4.9 U	4.9 U
1,4-Dichlorobenzene	SW8270DSIM	--	4.7 U	4.8 U	4.9 U	14.8 U	4.8 U	14.8 U	4.9 U	4.9 U
2,4-Dimethylphenol	SW8270D	--	25.2 UJ[2]	26 UJ[2]	26.5 UJ[2]	79.3 UJ[2]	26 UJ[2]	79.3 UJ[2]	26 UJ[2]	26.2 UJ[2]
2-Methylphenol (o-Cresol)	SW8270DSIM	--	**3 J**	4.8 U	**3.2 J**	14.8 U	4.8 U	14.8 U	4.9 U	**3.2 J**
4-Methylphenol (p-Cresol)	SW8270DSIM	--	**7.5**	**126**	**105**	14.8 U	**50**	**46**	**34.2**	**65**
Benzoic acid	SW8270D	1.40E+10	**66.8 J**	**189 J**	**110 J**	592 UJ	**95.2 J**	592 UJ	**84.3 J**	**127 J**
Benzyl alcohol	SW8270D	3.50E+08	18.8 U	19.4 U	19.8 U	59.2 U	19.4 U	59.2 U	19.4 U	19.6 U
bis(2-Ethylhexyl)phthalate	SW8270D	9.38E+06	**102**	48.5 U	49.4 U	148 U	48.4 U	148 U	48.5 U	48.9 U
Butylbenzyl phthalate	SW8270DSIM	6.91E+07	**6.5**	**13.8**	4.9 U	14.8 U	4.8 U	14.8 U	4.9 U	4.9 U
Diethyl phthalate	SW8270DSIM	2.80E+09	**49.1**	19.4 U	19.8 U	59.2 U	19.4 U	59.2 U	19.4 U	19.6 U
Dimethyl phthalate	SW8270DSIM	--	4.7 U	4.8 U	4.9 U	14.8 U	4.8 U	14.8 U	4.9 U	4.9 U
Di-n-butyl phthalate	SW8270D	3.50E+08	18.8 U	19.4 U	19.8 U	59.2 U	19.4 U	59.2 U	19.4 U	19.6 U
Di-n-octyl phthalate	SW8270D	3.50E+07	18.8 U	19.4 U	19.8 U	59.2 U	19.4 U	59.2 U	19.4 U	19.6 U
Hexachlorobenzene	SW8270DSIM	8.20E+04	4.7 U	4.8 U	4.9 U	14.8 U	4.8 U	14.8 U	4.9 U	4.9 U
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	SW8270DSIM	1.68E+06	4.7 U	4.8 U	4.9 U	14.8 U	4.8 U	14.8 U	4.9 U	4.9 U
n-Nitrosodiphenylamine	SW8270D	--	18.8 U	19.4 U	19.8 U	28.3 U[2]	19.4 U	28.3 U[2]	19.4 U	19.6 U
Pentachlorophenol	SW8270D	3.28E+05	**216**	**82 J**	**104**	296 U	96.9 U	296 U	**36.1 J**	**40.2 J**
Phenol	SW8270DSIM	1.05E+09	**14.9**	4.8 U	**58.5**	**15**	4.8 U	**62.1**	4.9 U	4.9 U
Polycyclic Aromatic Hydrocarbons (µg/kg)										
2-Methylnaphthalene	SW8270D	5.00E+03	**16.3 J**	**20.5**	**12.6 J**	59.2 U	**8.7 J**	**17.6 J**	**10.3 J**	**8.6 J**
Acenaphthene	SW8270D	2.10E+08	**34.6**	**9.9 J**	19.8 U	59.2 U	19.4 U	59.2 U	19.4 U	19.6 U
Acenaphthylene	SW8270D	--	**95.3**	19.4 U	19.8 U	**18.1 J**	19.4 U	59.2 U	19.4 U	19.6 U
Anthracene	SW8270D	1.05E+09	**187**	**10 J**	**9.5 J**	**26.1 J**	19.4 U	59.2 U	**10 J**	19.6 U
Benzo(a)anthracene	SW8270D	1.80E+05	**357**	**8 J**	19.8 U	**25.8 J**	19.4 U	59.2 U	**14.5 J**	19.6 U
Benzo(a)pyrene	SW8270D	2.00E+03	**275**	19.4 U	19.8 U	**38.5 J**	19.4 U	**48.3 J**	**12.1 J**	19.6 U
Benzo(g,h,i)perylene	SW8270D	--	**195**	19.4 U	19.8 U	**40.1 J**	19.4 U	**54.8 J**	19.4 U	19.6 U
Chrysene	SW8270D	1.80E+07	**883**	**14.7 J**	19.8 U	**60.5**	**10.8 J**	59.2 U	**25.7**	19.6 U
Dibenzo(a,h)anthracene	SW8270D	1.80E+04	**62.9**	19.4 U	19.8 U	59.2 U	19.4 U	59.2 U	19.4 U	19.6 U
Dibenzofuran	SW8270D	3.50E+06	**38**	19.4 U	**12.4 J**	59.2 U	19.4 U	59.2 U	19.4 U	19.6 U
Fluoranthene	SW8270D	1.40E+08	**1630**	**52.3**	**32.4**	**57.9 J**	**18.9 J**	**20.5 J**	**11.5 J**	**21.3**
Fluorene	SW8270D	1.40E+08	**22.1**	19.4 U	19.8 U	59.2 U	19.4 U	59.2 U	19.4 U	19.6 U
Indeno(1,2,3-c,d)pyrene	SW8270D	1.80E+05	**187**	19.4 U	19.8 U	**43.6 J**	19.4 U	59.2 U	19.4 U	19.6 U
Naphthalene	SW8270D	5.00E+03	**44.7**	**247**	**95.7**	59.2 U	**65.4**	**52.7 J**	**26.5**	**73.3**
Phenanthrene	SW8270D	--	**588**	**82.1**	**45.6**	**32.1 J**	**33.2**	59.2 U	**25.5**	**32.3**
Pyrene	SW8270D	1.05E+08	**1370**	**46.5**	**36.7**	**56 J**	**19 J**	**36.8 J**	**39.4**	**18.8 J**
Total Benzofluoranthenes (b,j,k) (U = 0)	SW8270D	1.80E+05	**1100**	**17.2 J**	39.5 U	**127**	**14.7 J**	118 U	38.8 U	**13.4 J**
cPAHs (U=1/2)	SW8270D	2.00E+03	**454.52**	**14.307**	**14.949**	**61.705**	**14.188**	**63.376**	**17.687**	**14.178**

Table 6

Soil Boring Composite Analytical Results and MTCA Screening

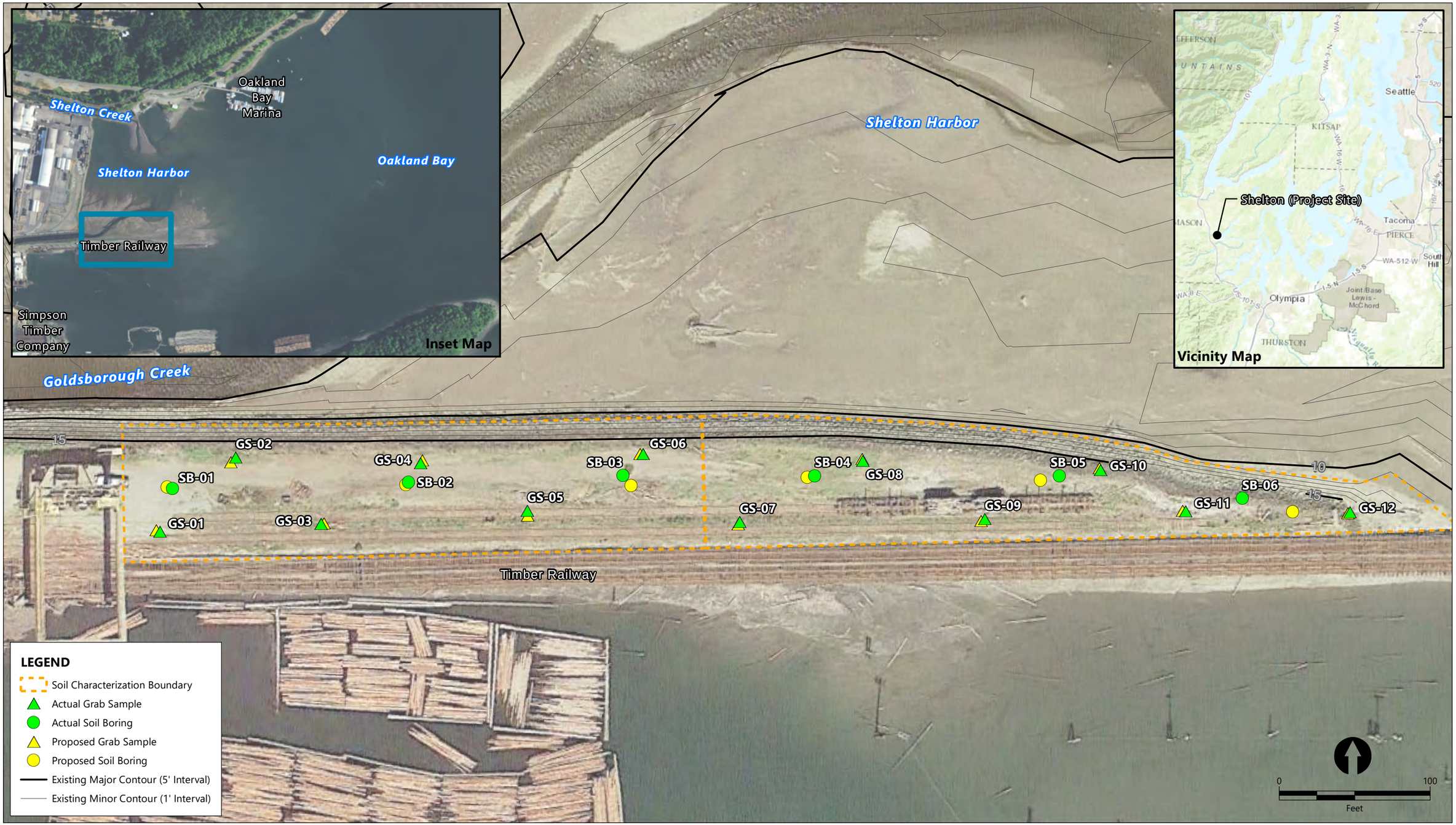
		Sample ID	SB-COMP-01A-0-2.5[1]	SB-COMP-01B-2.5-5	SB-COMP-01ZA-5-7.5	SB-COMP-02A-0-2.5[1]	SB-COMP-02B-2.5-5	SB-COMP-02ZA-5-7.5	SB-COMP-02ZB-7.5-10	SB-COMP-102B-2.5-5
		Sample Date	5/24/2017	5/24/2017	5/24/2017	5/24/2017	5/24/2017	5/24/2017	5/24/2017	5/24/2017
		Depth	0 - 2.5 ft	2.5 - 5 ft	5 - 7.5 ft	0 - 2.5 ft	2.5 - 5 ft	5 - 7.5 ft	7.5 - 10 ft	2.5 - 5 ft
		Sample Type	N	N	N	N	N	N	N	FD
		Matrix	SO	SO	SO	SO	SO	SO	SO	SO
		MTCA Industrial[1]								
Pesticides (µg/kg)										
4,4'-DDD (p,p'-DDD)	SW8081B	5.47E+05	0.96 UJ	0.99 UJ	0.99 UJ	1.97 UJ	0.99 UJ	1.98 UJ	0.99 UJ	0.99 UJ
4,4'-DDE (p,p'-DDE)	SW8081B	3.86E+05	0.96 UJ	0.99 UJ	0.99 UJ	1.97 UJ	0.99 UJ	1.98 UJ	0.99 UJ	0.99 UJ
4,4'-DDT (p,p'-DDT)	SW8081B	4.00E+03	0.96 UJ	0.99 UJ	0.99 UJ	1.97 UJ	0.99 UJ	1.98 UJ	0.99 UJ	0.99 UJ
Aldrin	SW8081B	7.72E+03	0.48 UJ	0.49 UJ	0.5 UJ	0.98 UJ	0.49 UJ	0.99 UJ	0.49 UJ	0.5 UJ
Chlordane, alpha- (Chlordane, cis-)	SW8081B	3.75E+05	0.48 UJ	0.49 UJ	0.5 UJ	0.98 UJ	0.49 UJ	0.99 UJ	0.49 UJ	0.5 UJ
Chlordane, beta- (Chlordane, trans-)	SW8081B	3.75E+05	0.48 UJ	0.49 UJ	0.5 UJ	0.98 UJ	0.49 UJ	0.99 UJ	0.49 UJ	0.5 UJ
Dieldrin	SW8081B	8.20E+03	0.96 UJ	0.99 UJ	0.99 UJ	0.23 UJ[2]	0.99 UJ	0.23 UJ[2]	0.99 UJ	0.99 UJ
Heptachlor	SW8081B	2.92E+04	0.48 UJ	0.49 UJ	0.5 UJ	0.98 UJ	0.49 UJ	0.99 UJ	0.49 UJ	0.5 UJ
Nonachlor, cis-	SW8081B	--	0.96 U	0.99 U	0.99 U	1.97 U	0.99 U	1.98 U	0.99 U	0.99 U
Nonachlor, trans-	SW8081B	--	0.96 U	0.99 U	0.99 U	1.97 U	0.99 U	1.98 U	0.99 U	0.99 U
Oxychlordane	SW8081B	--	0.96 UJ	0.99 UJ	0.99 UJ	1.97 UJ	0.99 UJ	1.98 UJ	0.99 UJ	0.99 UJ
Dioxin Furans (ng/kg)										
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	E1613B	--	**10.4**	**1.24 J**	0.804 U	**10.5**	**1.26**	0.6 U	0.894 U	**1.14**
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	E1613B	--	**56.8**	**6.28**	**4.16**	**44.5**	**6.66**	**3.98**	**5.31**	**5.68**
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	E1613B	--	**69.2**	**7.18**	**6.16**	**29.6**	**10.5**	**5.52**	**6.63**	**8.73**
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	E1613B	--	**253**	**35.7**	**56.4**	**203**	**53.2**	**39.6**	**62.7**	**40.3**
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	E1613B	--	**99.9**	**17.6**	**16.7**	**52.5**	**17**	**15.5**	**22.6**	**18.9 J**
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	E1613B	--	**6420**	**1010**	**1760**	**1230**	**910**	**1130**	**1310**	**754**
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	E1613B	--	**50100 J**	**9560 J**	**20300 J**	**8010 J**	**9660 J**	**15700 J**	**19000 J**	**8750 J**
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	E1613B	--	**31.1**	**3.32**	**1.38**	**27.3**	**2.77**	**1.02**	**1.54**	**2.25**
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	E1613B	--	**28.2**	**2.88**	**1.99**	**18.4**	**2.35**	**1.61**	**3.19**	**2.21**
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	E1613B	--	**29.3**	**4.75**	**1.76**	**19.3**	**3.06**	**1.64 J**	**3.03**	**2.84**
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	E1613B	--	**75.5**	**21.3**	**24**	**22**	**14.9**	**18.5**	**50.9**	**14.1**
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	E1613B	--	**35.4**	**8.37**	**12.4**	**19.5**	**7.03**	**9.2**	**14**	**6.3**
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	E1613B	--	**28.3 J**	**4.36 J**	**4.48 J**	**9.43 J**	**3.49**	**4.6 J**	**8.72 J**	**4.96 J**
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	E1613B	--	**26.2 J**	**16.1**	**28.2**	**15.3**	**14.1 J**	**22.7**	**28.9**	**13.1**
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	E1613B	--	**707**	**389**	**1250**	**449**	**438**	**604**	**673**	**420**
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	E1613B	--	**45.2**	**20.6**	**53.2**	**14.8**	**18.6**	**28.6**	**48.5**	**17**
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	E1613B	--	**1520**	**1790**	**4960 J**	**746**	**1090**	**1850**	**1090**	**1290**
Total Tetrachlorodibenzofuran (TCDF)	E1613B	--	**625**	**89.4**	**52.6**	**557**	**86.5**	**42.8**	**66.7**	**67.6**
Total Pentachlorodibenzofuran (PeCDF)	E1613B	--	**445**	**113**	**131**	**345**	**104**	**110**	**178**	**94.7**
Total Hexachlorodibenzofuran (HxCDF)	E1613B	--	**1690**	**504**	**1450**	**761**	**531**	**788**	**1010**	**549**
Total Heptachlorodibenzofuran (HpCDF)	E1613B	--	**2700**	**1820**	**6110**	**1420**	**1830**	**2740**	**2540**	**1800**
Total Tetrachlorodibenzo-p-dioxin (TCDD)	E1613B	--	**2620**	**197**	**81.8**	**1670**	**283**	**27.9**	**37.7**	**196**
Total Pentachlorodibenzo-p-dioxin (PeCDD)	E1613B	--	**2290**	**177**	**106**	**1360**	**196**	**41**	**51.3**	**155**
Total Hexachlorodibenzo-p-dioxin (HxCDD)	E1613B	--	**4050**	**338**	**283**	**2040**	**454**	**255**	**348**	**593**
Total Heptachlorodibenzo-p-dioxin (HpCDD)	E1613B	--	**20000**	**1890**	**3380**	**2580**	**1750**	**2310**	**2740**	**1430**
Total Dioxin/Furan TEQ 2005 (Mammal) (U = 1/2)	E1613B	1.68E+03	**225.9 J**	**38.0 J**	**58.3 J**	**118.8 J**	**38.1 J**	**39.4 J**	**52.7 J**	**33.5 J**
Total Dioxin/Furan TEQ 2005 (Mammal) (U = 0)	E1613B	1.68E+03	**225.9 J**	**38.0 J**	**57.9 J**	**118.8 J**	**38.1 J**	**39.1 J**	**52.3 J**	**33.5 J**
PCB Aroclors (µg/kg)										
Aroclor 1016	SW8082A	1.88E+06	3.9 U	4 U	4 U	3.9 U	4 U	4 U	4 U	4 U
Aroclor 1221	SW8082A	--	3.9 U	4 U	4 U	3.9 U	4 U	4 U	4 U	4 U
Aroclor 1232	SW8082A	--	3.9 U	4 U	4 U	3.9 U	4 U	4 U	4 U	4 U
Aroclor 1242	SW8082A	--	3.9 U	4 U	4 U	3.9 U	4 U	4 U	4 U	4 U
Aroclor 1248	SW8082A	--	3.9 U	4 U	4 U	3.9 U	4 U	4 U	4 U	4 U
Aroclor 1254	SW8082A	6.56E+05	**5.7 J**	4 U	4 U	**3.2 J**	**3.6 J**	4 U	4 U	**3.5 J**
Aroclor 1260	SW8082A	6.56E+05	**8 J**	**3.2 J**	4 U	**3.2 J**	**3.3 J**	4 U	4 U	**3.3 J**
Total PCB Aroclors (SMS Marine 2013) (U = 0)	SW8082A	1.00E+04	**13.7 J**	**3.2 J**	4 U	**6.4 J**	**6.9 J**	4 U	4 U	**6.8 J**

Table 6
Soil Boring Composite Analytical Results and MTCA Screening

Notes:
[1] Method Toxics Control Act (MTCA) Industrial Criteria includes the most stringent criteria of Method A Industrial, Method C Cancer, Method C Non-Cancer
[2] The method detect limit is reported for this sample result.
Bold = Detected result
µg: microgram
cPAHs: carcinogenic polycyclic aromatic hydrocarbons
ft: foot
kg: kilogram
mg: milligram
MTCA: Model Toxics Control Act
ng: nanogram
SMS: Sediment Management Standards
PCB: polychlorinated biphenyl
TEQ: toxic equivalent quotient

J: Estimated value
U: Compound analyzed, but not detected above detection limit
UJ: Compound analyzed, but not detected above estimated detection limit
R: Rejected

Figures



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ANCHOR QEA

NOTES:

1. Horizontal Datum: WA State Plane South Zone, NAD83, U.S. Feet.
2. Vertical Datum: Mean Lower Low Water, feet.
3. Topography shown acquired by Pacific Krest Surveying, LLC. (June 2014).
4. Aerial photo acquired from Google Earth Pro (v.7.1.1.1888), image date is May 5, 2013.

Figure 1

Proposed and Actual Soil Sampling Locations

Oakland Bay Soil Characterization Data Report

South Puget Sound Salmon Enhancement Group

Appendix A
Field Data

ATTACHMENT A-1
DAILY LOGS

Daily Log

ANCHOR QEA

Anchor QEA, LLC
720 Olive Way, Suite 1900
Seattle, WA 98101
Phone 206.287.9130 Fax 206.287.9131

PROJECT NAME: Oakland Bay Restoration Project
DATE: 5/23/17
SITE ADDRESS: 204 E Railroad Ave Shelton, WA
PERSONNEL: Wright, Dunay, Kochie

WEATHER: **WIND FROM:** N | (NE) | E | SE | S | SW | W | NW

(SUNNY) | CLOUDY | RAIN | ?

(LIGHT) | MEDIUM | HEAVY

TEMPERATURE: (°F) 76 . °C
[Circle appropriate units]

TIME	COMMENTS
1030	arrive on site
1100	Ryan Warwick w/ APS arrive
1145	unknown utility ~4ft below surface
1219	APS off site, GPS locations, sample locations
~~1300~~	Josh Reese USIC on site for utility locate
1400 NIC	
1423	no utilities found - offsite

BW

Signature:

Tozier bro's
1st + Mill Street
right @ pink fire hose house

Daily Log

ANCHOR QEA

Anchor QEA, LLC
720 Olive Way, Suite 1900
Seattle, WA 98101
Phone 206.287.9130 Fax 206.287.9131

PROJECT NAME: Oakland Bay Restoration Project
DATE: 5/24/17
SITE ADDRESS: 204 E Railroad Ave Shelton, WA
PERSONNEL: Wright, Dunay, Kochie

WEATHER: **WIND FROM:** N | NE | E | SE | S | SW | W | NW

(SUNNY) | CLOUDY | RAIN | ?

(LIGHT) | MEDIUM | HEAVY

TEMPERATURE: (°F) 65 . °C
[Circle appropriate units]

TIME	COMMENTS
0730	Meet Holocene on site
0800	Location Recon
0900	Call to Tracy Drury re: relocating SB-06 due to access
0930	Boring @ SB-01
1030	Called Joyce Mercuri and Laura Inouye to discuss compaction correction. Decided it was not necessary after all
1050	Collected & processed 3 intervals from SB-01
1110	Boring @ SB-02
1119	Characterize SB-02
1140	Brian Coombs called. Waste drums should be 150' East of crane
1150	~~Samples~~ Collected & processed 3 intervals @ SB02
1210	Joyce Mercuri (Ecology) & Collin (SPI) onsite
1220	Boring @ SB-03
1232	Characterize SB03
1250	Collect & process 3 intervals @ SB03 * Joyce Mercuri left site
1255	Process SB-Comp-01A, -01B, -01C
1408	Boring @ SB-04
1417	Characterize SB-04
1450	Collect & process 4 intervals from SB-04
1540	Attempt #1 @ SB-05 → accepted w/ compaction correction in 4-8 interval
1555	Attempt #2 @ SB-05 → rejected due to poor recovery
1600	Call to Nik Bacher re: compaction correction in 4-8 interval
1610	Call to Joyce Mercuri re: compaction correction in 4-8 interval
1630	Characterize SB-05
1650	Collect & process 4 intervals @ SB-05
1720	Attempt #1 @ SB-06 - accepted although host at project depth 2
1735	Attempt #2 @ SB-06 - rejected due to poor recovery
1745	Characterize SB-06

Signature: _____

Daily Log

ANCHOR QEA

Anchor QEA, LLC
720 Olive Way, Suite 1900
Seattle, WA 98101
Phone 206.287.9130 Fax 206.287.9131

PROJECT NAME: Oakland Bay Restoration Project
DATE: 5/24/17
SITE ADDRESS: 204 E Railroad Ave Shelton, WA
PERSONNEL: Wright, Dunay, Kochie

WEATHER: **WIND FROM:** N | NE | E | SE | S | SW | W | NW

(SUNNY) | CLOUDY | RAIN | ?

(LIGHT) | MEDIUM | HEAVY

TEMPERATURE: (°F) 65 . °C
[Circle appropriate units]

TIME	COMMENTS
1615	Gillet & process 3 intervals @ SB-01
1820	Process SB-COMP-02A-0-2.5, -02B-2.5-5, 02ZA-5-7.5,
	and -02ZB-7.5-10
1830	Holocene offsite
1840	Demob & clean
1915	AQ offsite

Signature:

ATTACHMENT A-2
SUBSURFACE SOIL LOGS

PROJECT: Oakland Bay Restoration Project	**Log of Boring No.**
Project No: 160331-01.01	BORING LOCATION: SB- 01
DRILLING CONTRACTOR: Holocene	ELEVATION AND DATUM:
DRILLING METHOD: Direct-push	DATE: 5/24/17 TIME: 0953
DRILLING EQUIPMENT: Geoprobe	TOTAL DEPTH: 7.5 ft
SAMPLING METHOD: Geoprobe	LOGGED BY: B. Wright, J. Dunay
BOREHOLE DIAMETER: 3.5" ID	HAMMER TYPE/SYSTEM: Direct-push

DEPTH (feet)	SAMPLES: Sample	SAMPLES: Depth Sampled	SAMPLES: Push (ft)	DESCRIPTION	FIELD-ESTIMATED % Gravel: Coarse	Gravel: Fine	Sand: Coarse	Sand: Medium	Sand: Fine	Fines	SOIL GROUP SYMBOL (USCS) / Analyses
1	SB-Comp-01A-0-2.5	SB-01-0-2.5-170524 (A)		0-0.7ft: gray, loose, dry, POORLY GRADED GRAVEL (GP), 100% f-c gravel (subangular, up to 0.5 inch)	100						Comp samples submitted for: PAH/PCB/Pest, VF, GS, TS/TOC/TVS/NH3, Sulfides, Archive
2				0.7-2.5ft: brown, dry, loose, SILTY SAND W/GRAVEL (SM), 55% f-c sand 15% f-c gravel, 30% fines. Trace organics (wood, roots)	15		55			30	
3	SB-Comp-01A-2.5-5	SB-01-2.5-5-170524 (A)									
4								60		40	
5				2.5-7.0 ft: dark brown, wet, loose, SILTY SAND (SM), 60% m-f sand, 40% fines, trace gravel (subrounded, up to 1.5cm). Trace organics (wood)							
6	SB-Comp-01A-5-7.5	SB-01-5-7.5-170524 (A)			15		55			30	
7											
8			X	7.0-7.5ft: red brown, wet, dense, SILTY SAND W/GRAVEL (SM), 55% f-c sand, 15% gravel, 30% fines							
9											
10											

Composited Samples

Individual archive samples

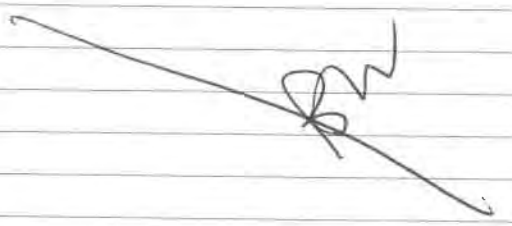
Project No. 160331-01.01	ANCHOR QEA	Page 1 of 1

PROJECT: Oakland Bay Restoration Project	Log of Boring No.
Project No: 160331-01.01	BORING LOCATION: SB- 62
DRILLING CONTRACTOR: Holocene	ELEVATION AND DATUM:
DRILLING METHOD: Direct-push	DATE: 5/24/17 TIME: 1119
DRILLING EQUIPMENT: Geoprobe	TOTAL DEPTH: 8 ft
SAMPLING METHOD: Geoprobe	LOGGED BY: B. Wright, J. Dunay
BOREHOLE DIAMETER: 3.5 in ID	HAMMER TYPE/SYSTEM: Direct-push

DEPTH (feet)	SAMPLES: Sample	SAMPLES: Depth Sampled	Push (ft)	DESCRIPTION	FIELD-ESTIMATED % Gravel: Coarse	Gravel: Fine	Sand: Coarse	Sand: Medium	Sand: Fine	Fines	SOIL GROUP SYMBOL (USCS) analysis
1	SB-comp 1+0-2.5	SB-02-0-2.5-170524		0-2ft; loose, dry, light brown, SILTY SAND w/GRAVEL (SM), 60% f-c sand 20% f-c gravel, 20% fines. gravel is subrounded up to 5cm	20		1	60		20	comp samples submitted for: metals, SVOC/ PAH/PCB/Pest, D/F, GS, TS/ TOC/TVS/NH3, sulfides, archive
2											
3	SB-comp 1B-2.5-5	SB-02-2.5-5-170524		2-8 ft: dark brown, loose-medium dense, moist, SILTY SAND (SM) ~~60%~~ f-c sand, ~~20%~~ fines, trace gravel. Trace organics (wood) moderate				60		40	
4											
5											
6	SB-comp 1 2A 5-7.5	SB-02-5-7.5-170524									
7											
8											
9	Composited samples	Individual archive samples									

PROJECT: Oakland Bay Restoration Project	Log of Boring No.
Project No: 160331-01.01	BORING LOCATION: SB- a3
DRILLING CONTRACTOR: Holocene	ELEVATION AND DATUM:
DRILLING METHOD: Direct-push	DATE: 5/24/17 TIME: 1220
DRILLING EQUIPMENT: Geoprobe	TOTAL DEPTH: 9 ft
SAMPLING METHOD: Geoprobe	LOGGED BY: B. Wright, J. Dunay
BOREHOLE DIAMETER: 3.5 in ID	HAMMER TYPE/SYSTEM: Direct-push

DEPTH (feet)	SAMPLES: Sample	SAMPLES: Depth Sampled	Push (ft)	DESCRIPTION	FIELD-ESTIMATED % Gravel: Coarse	Gravel: Fine	Sand: Coarse	Sand: Medium	Sand: Fine	Fines	SOIL GROUP SYMBOL (USCS) — BW
1	SB-Comp-1A-0-2.5	SB-03-0-2.5-17-0524		0-0.7ft: Gravel, not captured in sample	100						analyses
2				0.7-3.3ft: loose, dry, brown, SILTY SAND w/GRAVEL (SM) 55% f-c sand, 35% fines, 10% f-c gravel		10		55		35	comp samples analyzed for: metals, SVOC/PAH/PCB/Pest, D/F, GS, TS/TOC/TVS/NH3, sulfides, archive
3				@1.8ft: moist							
4	SB-Comp-1B-2.5-5	SB-03-2.5-5-17-0524		Trace organics (wood, roots)		15		70		15	
5				3.3-4.5 ft: loose, moist, dark gray, SILTY SAND (SM) BW							
6	SB-Comp-1A-5-7.5	SB-03-5-7.5-17-0524		w/GRAVEL (SM). 50% f-c sand, 15% f-c gravel, 15% fines. trace organics (wood)				60		40	
7				4.5-9.0ft: loose to medium dense, moist, dark brown-gray, SILTY SAND (SM) 50% f-c sand, 40% fines, trace gravel, trace-moderate organics (wood)							
8	Composited Samples	Individual archive Samples		@5.7-6.6: moderate-substantial organics (wood)							



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PROJECT: Oakland Bay Restoration Project	Log of Boring No.
Project No: 160331-01.01	BORING LOCATION: SB- B4
DRILLING CONTRACTOR: Holocene	ELEVATION AND DATUM:
DRILLING METHOD: Direct-push	DATE: 5/24/17 TIME: 1417
DRILLING EQUIPMENT: Geoprobe	TOTAL DEPTH: 12 ft
SAMPLING METHOD: Geoprobe	LOGGED BY: B. Wright, J. Dunay
BOREHOLE DIAMETER: 3.5in ID	HAMMER TYPE/SYSTEM: Direct-push

DEPTH (feet)	SAMPLES: Sample	SAMPLES: Depth Sampled	Push (ft)	DESCRIPTION	FIELD-ESTIMATED % Gravel: Coarse	Gravel: Fine	Sand: Coarse	Sand: Medium	Sand: Fine	Fines	SOIL GROUP SYMBOL (USCS)
1	SB-Comp-02A-0-2.5	SB-04-0-2.5-170524		0-0.2 ft: topsoil, grass							analyses
2				0.2-1.9ft: brown-gray, loose, dry, SILTY GRAVEL W/SAND (GM). 60% coarse gravel (sub angular) 20% f-m Sand, 20% fines. Trace organics (wood)		60		20		20	Comp samples analyzed for: metals, SVOC/PAH/PCB/Pest, D/F, GS, TS/TOC/TVS/NH3, sulfides, archive
3	SB-Comp-02B-2.5-5	SB-04-2.5-5-170524		1.9-2.4 ft: brown, loose, moist, SILTY SAND W/GRAVEL (SM). 60% f-c sand, 20% f-c gravel, 20% fines	20			60		20	
4											
5								60		40	
6	SB-Comp-02ZA-5-7.5	SB-04-5-7.5-170524		2.4-12 ft: dark brown, loose, moist, SILTY SAND (SM) 60% f-c sand, 40% fines. Trace gravel (up to 5cm, sub rounded). Trace organics (wood) 7.3 ft							
7											
8	SB-Comp-02ZB-7.5-10	SB-04-7.5-10-170524		@ 5.3: moderate organics (wood)							
9				@ 11.2-11.4 ft: solid organics (wood - log/branch)							
10											
11											
12											
	Composited Samples	Individual archive Samples									

PROJECT: Oakland Bay Restoration Project	Log of Boring No.
Project No: 160331-01.01	BORING LOCATION: SB- 05
DRILLING CONTRACTOR: Holocene	ELEVATION AND DATUM:
DRILLING METHOD: Direct-push	DATE: 5/24/17 TIME: 1100
DRILLING EQUIPMENT: Geoprobe	TOTAL DEPTH: 9.5 ft
SAMPLING METHOD: Geoprobe	LOGGED BY: B. Wright, J. Dunay
BOREHOLE DIAMETER: 3.5 in ID	HAMMER TYPE/SYSTEM: Direct-push

DEPTH (feet)	SAMPLES: Sample	SAMPLES: Depth Sampled	SAMPLES: Push (ft)	DESCRIPTION	FIELD-ESTIMATED % Gravel: Coarse	Gravel: Fine	Sand: Coarse	Sand: Medium	Sand: Fine	Fines	SOIL GROUP SYMBOL (USCS) ~~(USCS)~~ BW Analyses
1	SB-Comp-02A-0-2.5	SB-05-0-2.5-17052424		0-0.6 - missing top interval b/c surface gravel 0.6-4 ft: brown, loose, dry, SILTY SAND W/GRAVEL (SM) 55% f-c sand, 20% f-c gravel (up to 7cm, sub-angular) 25% fines Trace organics (wood, roots)	10	20		SS		25	Composite samples analyzed for: metals, SVOC/PAH/PCB/Pest, D/F, GS, TS/TOC/TVS/NH_3, sulfides, archive
2											
3	SB-Comp-02B-2.5-5	SB-05-2.5-5-17052424		@ 2.3 ft: grades to moist							
4											
5	SB-Comp-02A-5-7.5	SB-05-5-7.5-17052424	☆	4-9.5 ft: dark brown, loose-med dense, moist SILTY SAND (SM) 60% f-c sand, 40% fines. Trace gravel (up to 2cm, subrounded) Trace organics (wood)				60		40	
6											
7			X	@ 6.0 ft: 0.2 ft layer of wood (branch/tree)							
8	SB-Comp-02B-7.5-10	SB-05-7.5-10-17052424									
9				hit refusal @ 9.5 ft							
10											
11											
12	Composite Samples	Individual archives		75% recovery in 4-8 interval, ☆ compaction correction applied							

Project No. 160331-01.01	ANCHOR QEA	Page 1 of 1

PROJECT: Oakland Bay Restoration Project	Log of Boring No.
Project No: 160331-01.01	BORING LOCATION: SB- 06
DRILLING CONTRACTOR: Holocene	ELEVATION AND DATUM: BW
DRILLING METHOD: Direct-push	DATE: 5/24/17 TIME: 1745
DRILLING EQUIPMENT: Geoprobe	TOTAL DEPTH: 7 ft
SAMPLING METHOD: Geoprobe	LOGGED BY: B. Wright, J. Dunay
BOREHOLE DIAMETER: 3.5in ID	HAMMER TYPE/SYSTEM: Direct-push

DEPTH (feet)	SAMPLES: Sample	SAMPLES: Depth Sampled	Push (ft)	DESCRIPTION	FIELD-ESTIMATED % Gravel Coarse	Gravel Fine	Sand Coarse	Sand Medium	Sand Fine	Fines	~~SOIL GROUP SYMBOL (USCS)~~
1	SB-Comp-02A-0-2.5	SB-06-0-2.5-170524		0-2.3 ft: dark brown, loose, moist, SILTY SAND WITH GRAVEL (SM), 50% f-c sand, 30% fines, 20% gravel (angular-subrounded, up to 5 cm) Trace organics (wood, roots)	20		1	50		30	Analyses
2											Comp samples analyzed for: metals, SVOC/PAH/PCB/Pest, DF, GS, TS/TOC/TVS/NH_3, Sulfides, archive
3											
4	SB-Comp-02B-2.5-5	SB-06-2.5-5-170524		2.3-7.0 ft: dark brown, loose, med dense, moist, SILTY SAND (SM) 60% f-c sand 40% fines, trace gravel (subrounded, up to 2 cm), trace-moderate organics (wood)				60		40	
5											
6	SB-Comp-02ZB-5-7.5-DUP	SB-06-5-7.5-170524									
7				hit refusal @ 7.0 ft							
8											

★ 5-7 ft sample composited w/ SB-COMP-02ZB-7.5-DUP

ATTACHMENT A-3
SUBSURFACE SOIL PHOTOGRAPHS

Note: There are no photographs for SB-01-0-4_1 or the SB-01-4-8 interval.


SB-01
5/24/17
0930
0-4ft
Quartet
28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46
.4 .5 .6 .7 .8 .9 .1 .2 .3 .4 .5 .6 .7 .8 .9


SB-01
5/24/17
0930
0-4ft
Quartet

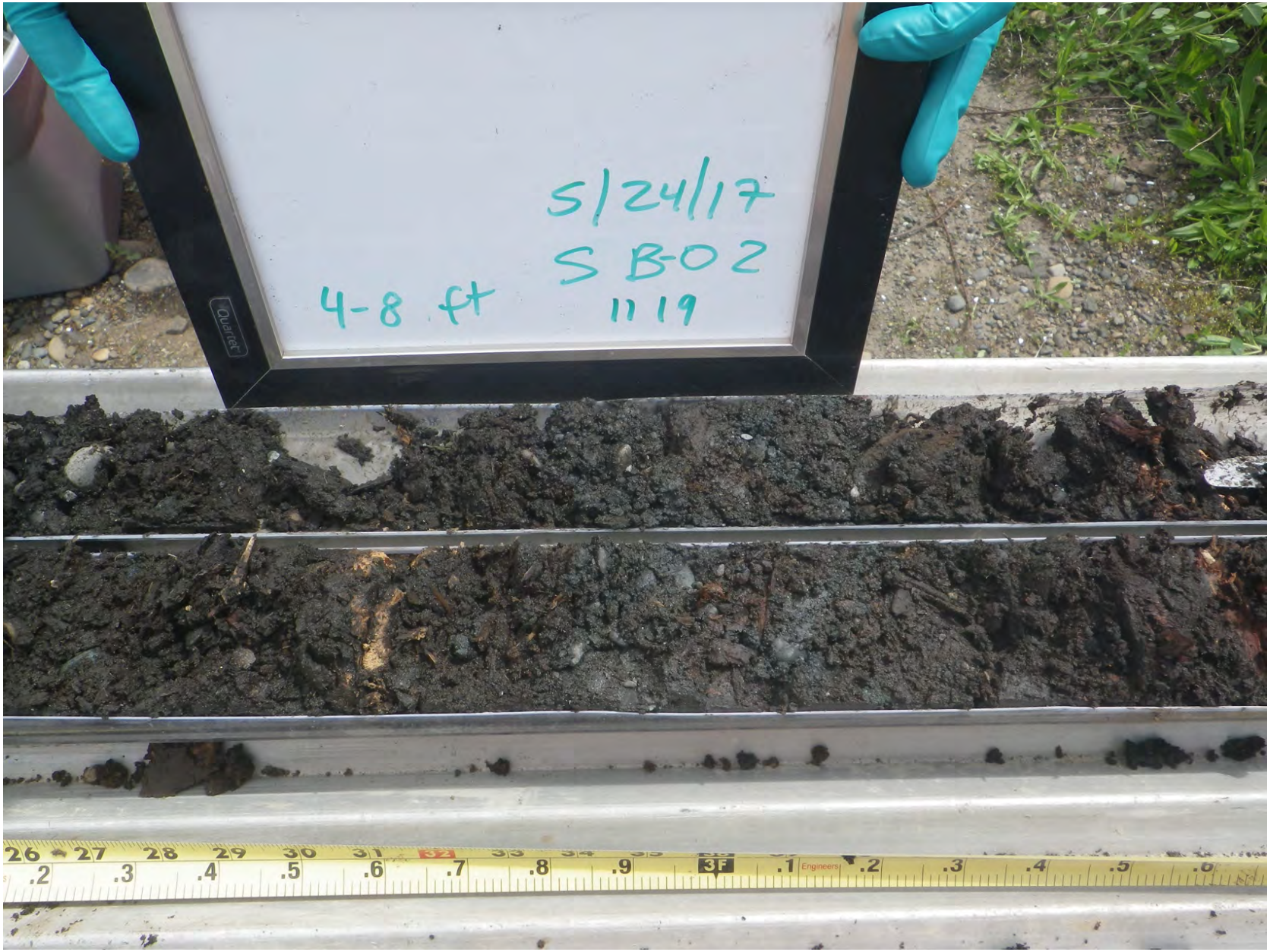

5/24/17
SB-02
0-4ft
11 19
Quartet


5/24/17
SB-02
0-4ft
1119
Quartet


5/24/17
SB-02
0-4ft
11 19


5/24/17
SB-02
4-8 ft
11 19
Quartet


5/24/17
SB-02
4-8 ft
1119
Quartet


5/24/17
SB-02
4-8 ft
11 19
Quartet


5/24/17
SB-02
4-8 ft
1119
Quartet


0-4ft
5/24/17
SB03
1220


0-4ft
5/24/17
SB-03
1220


0-4ft
5/24/17
SB-03
1220
Quartet


5/24/17
4-8ft
SB-03
1220
Quartet


5/24/17
4-8ft
SB03
1220
Quartet


5/24/17
4-8ft
SB-03
1220
Quartet
25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42
.1 Engineers .2 .3 .4 .5 .6 .7 .8 .9 3F .1 Engineers .2 .3 .4 .5


5/24/17
4-8ft
SB-03
1220
Quartet
35
36
3F
37
38
39
40
41
42
43
44
45
46
47
48
4F
49
.1
.2
.3
.4
.5
.6
.7
.8
.9
Engineers


5/24/17
0-4ft
SB-04
1417


0-4ft
5/24/17
SB-04
1417


5/24/17
0-4ft
SB-04
1417


5/24/17
4-8ft SB-04
1417
Quartet

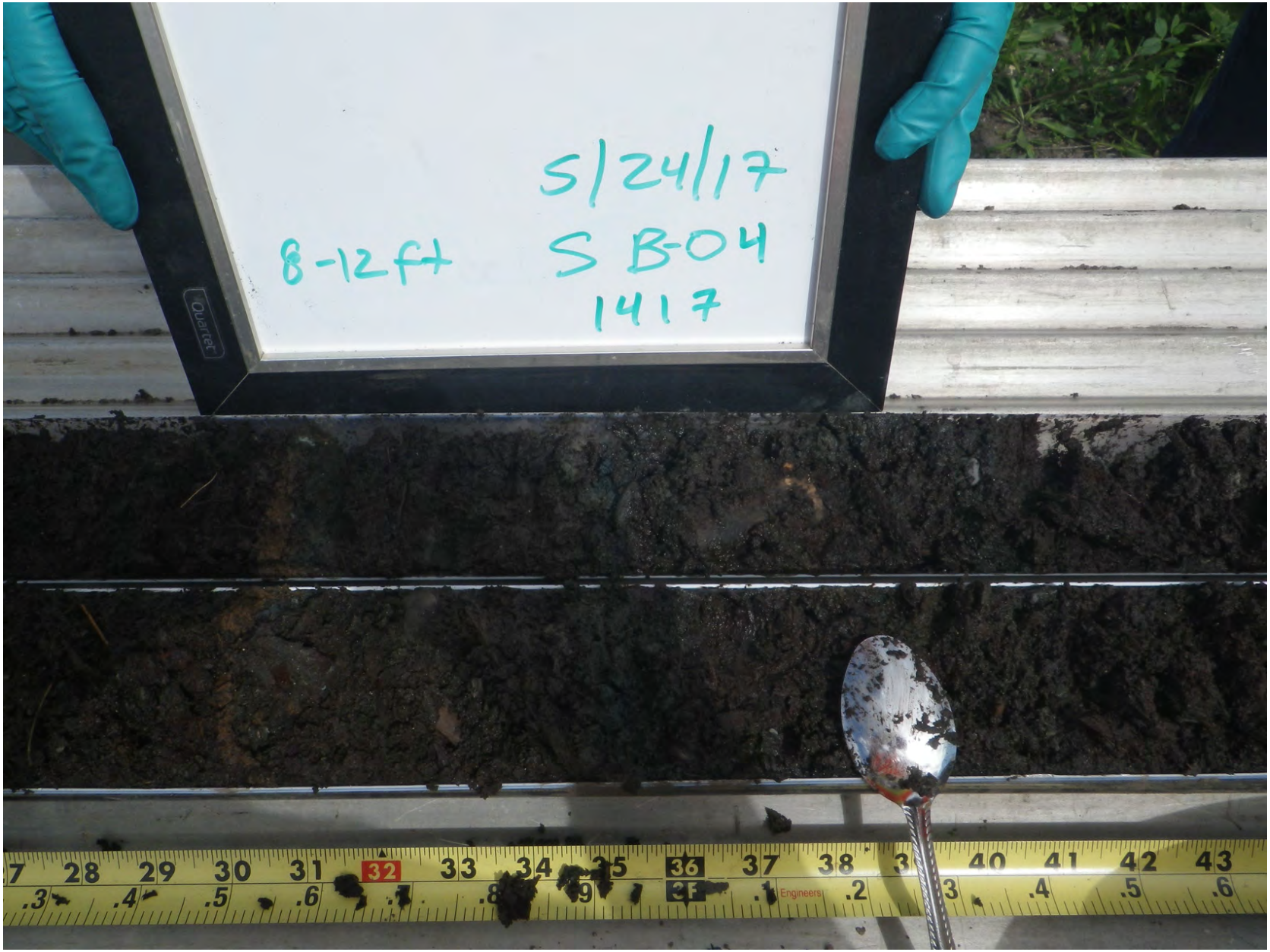

5/24/17
4-8ft SB-04
1417
Quartet
Engineers


5/24/17
4-8ft
SB-04
1417
Quartet
22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37
.9 2F .1 Engineers .2 .3 .4 .5 .6 .7 .8 .9 3F


5/24/17
4-8ft
SB-04
1417
Quartet
37 38 39 40 41 42 43 44 45 46 47 48 49
.1 .2 .3 .4 .5 .6 .7 .8 .9 .1
Engineers
4F


5/24/17
8-12ft
SB-04
1417
Quartet


5/24/17
8-12ft
SB-04
1417


5/24/17
8-12ft
SB-04
1417
Quartet


5/24/17
8-12ft
SB-04
1417
Quartet
Engineers


0-4ft
5/24/17
SB05
1600
Quartet


0-4ft
5/24/17
SB05
1600
Quartet


0-4ft
5/24/17
SB-05
1600
Quarter


0-4ft
5/24/17
SB-05
1600
Quartet


5/24/17
4-8ft
SB-05
75% cc applied
1600
Quartet


5/24/17
4-8ft
75% cc applied
S B-05
1600
Quartet
5
6
7


4-8ft
75% cc applied
5/24/17
SB-05
1600

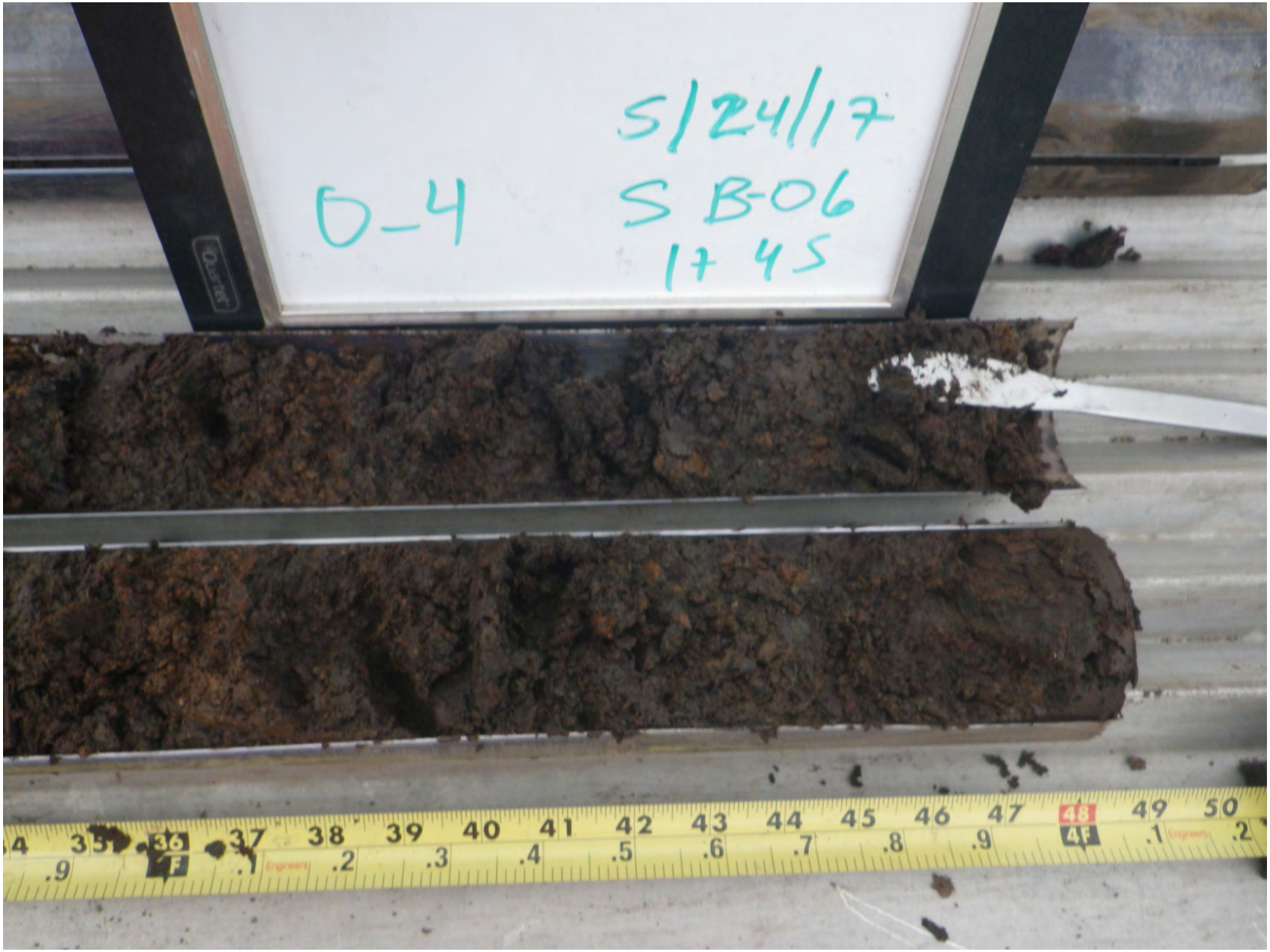

B-9.5
5/24/17
SB-05
1600
Quartet


8-9.5
5/24/17
SB-05
1600
Quartet


5/24/17
0-4
SB-06
17 45


5/24/17
0-4
SB-06
17 45


5/24/17
D-4
SB-06
17 45
Quartet
23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40
2F
Engineers
F
Engineers


5/24/17
D-4
SB-06
17 45


5/24/17
4-7
SB-06
17 45
Quartet
DURA NY-Coat
KOMELON
NYLON COAT
16ths
25ft
10ths-100ths
Engineers


5/24/17
4-7
SB-06
1745


5/24/17
4-7
SB-06
17 45
Quartet

ATTACHMENT A-4
SURFACE SOIL LOGS

ANCHOR QEA

Surface Soil Field Log

Job: Oakland Bay Restoration Project	Station: GS01
Job No: 160331-01.01	Date: 5/24/17
Field Staff: N. Kochie, B. Wright, J. Dunay	Time: 1025
Datum: NAD83 Washington State Plane South, US feet	Sample Method: Hand Trowel
Northing:	Recovery Depth (in): 0-6"
Easting:	

Sample Description: surface cover, (density), moisture, color, minor modifier, MAJOR modifier, other constituents, odor, sheen, layering, anoxic layer, debris, plant matter, shells, biota

0-6": Dry, brown, loose, brown, 50% f-c sand 20% fines, 30% gravel SILTY SAND W/GRAVEL (SM). Trace organics (plant roots

Sheen Test Results: NO SHEEN

Staining Results: NO STAINING

PID Results: Background 0.0
Sample 0.0

Sample Containers: 1

Analyses: ARCHIVE: GS-01-0-0.5-170524 @ 1025
composited Sample: GS-COMP-01-0-0.5 @ 1125
for PAHs

ANCHOR QEA

Surface Soil Field Log

Job: Oakland Bay Restoration Project	Station: GS-02
Job No: 160331-01.01	Date: 5/24/17
Field Staff: N. Kochie, B. Wright, J. Dunay	Time: 1225
Datum: NAD83 Washington State Plane South, US feet	Sample Method: Hand Trowel
Northing:	Recovery Depth (in): 0-6"
Easting:	

Sample Description: surface cover, (density), moisture, color, minor modifier, MAJOR modifier, other constituents, odor, sheen, layering, anoxic layer, debris, plant matter, shells, biota

0-6": dry, loose, light brown, 20% fines, 50% f-c sand, 20% f-c gravel (subrounded - subangular, up to 3") SILTY SAND w/GRAVEL (SM). Trace organics (plant roots)

Sheen Test Results: NO SHEEN

Staining Results: NO STAINING

PID Results: Background 0.0
Sample 0.8

Sample Containers: 1

Analyses: Archive: GS-02-0-0.5-170524 @ 1225
Composite Sample: GS-COMP-02-0-0.5 @ 1510
for PAHs

ANCHOR QEA

Surface Soil Field Log

Job: Oakland Bay Restoration Project	Station: GS-03
Job No: 160331-01.01	Date: 5/24/17
Field Staff: N. Kochie, B. Wright, J. Dunay	Time: 1055
Datum: NAD83 Washington State Plane South, US feet	Sample Method: Hand Trowel
Northing:	Recovery Depth (in): 0-6"
Easting:	

Sample Description: surface cover, (density), moisture, color, minor modifier, MAJOR modifier, other constituents, odor, sheen, layering, anoxic layer, debris, plant matter, shells, biota

0-6": dry, loose, light brown 30% f-c gravel (subrounded up to 3"), 20% fines, 50% f-c sand SILTY SAND W/GRAVEL (SM). Trace organics (plant roots).

Sheen Test Results: NO SHEEN

Staining Results: NO STAINING

PID Results: background 0.0
Sample 0.5

Sample Containers: 1

Analyses: Archive: GS-03-0-0.5-170524 @ 1055
Composite sample GS-COMP-01-0-0.5 @ 1125

ANCHOR QEA

Surface Soil Field Log

Job: Oakland Bay Restoration Project	Station: GS-04
Job No: 160331-01.01	Date: 5/24/17
Field Staff: N. Kochie, B. Wright, J. Dunay	Time: 1415
Datum: NAD83 Washington State Plane South, US feet	Sample Method: Hand Trowel
Northing:	Recovery Depth (in): 0-6"
Easting:	

Sample Description: surface cover, (density), moisture, color, minor modifier, MAJOR modifier, other constituents, odor, sheen, layering, anoxic layer, debris, plant matter, shells, biota

0-6": dry, loose, light brown 15% fines, 15% f-c gravel (subangular up to 3"), 70% f-c sand, trace organics (plant roots), trace biota (shells). SILTY SAND W/GRAVEL (SM)

Sheen Test Results: NO SHEEN

Staining Results: NO STAINING

PID Results: background: 0.0
sample: 1.0

Sample Containers: 1

Analyses: Archive: GS-04-0-0.5-170524 @ 1415
Composite: GS-COMP-02-0-0.5 @ 1510

ANCHOR QEA

Surface Soil Field Log

Job: Oakland Bay Restoration Project	Station: GS05
Job No: 160331-01.01	Date: 5/24/17
Field Staff: N. Kochie, B. Wright, J. Dunay	Time: 1125
Datum: NAD83 Washington State Plane South, US feet	Sample Method: Hand Trowel
Northing:	Recovery Depth (in): 0-6"
Easting:	

Sample Description: surface cover, (density), moisture, color, minor modifier, MAJOR modifier, other constituents, odor, sheen, layering, anoxic layer, debris, plant matter, shells, biota

0-6 in: moist, loose, dark brown, 30% trace, 50% f-c sand, 20% f-c gravel (submrinded, up to 3"), SILTY SAND W/GRAVEL (SM). Moderate organics (wood debris, plant mats).

Sheen Test Results: No sheen

Staining Results: No staining

PID Results: background: 0.0
Sample: 0.0

Sample Containers: 1

Analyses: Archive: GS-05-0-0.5-170524 @ 1125
Composite: GS-COMP-01-0-0.5 @ 1125

ANCHOR QEA

Surface Soil Field Log

Job: Oakland Bay Restoration Project	Station: GS-06
Job No: 160331-01.01	Date: 5/24/17
Field Staff: N. Kochie, B. Wright, J. Dunay	Time: 1455
Datum: NAD83 Washington State Plane South, US feet	Sample Method: Hand Trowel
Northing:	Recovery Depth (in): 0-6"
Easting:	

Sample Description: surface cover, (density), moisture, color, minor modifier, MAJOR modifier, other constituents, odor, sheen, layering, anoxic layer, debris, plant matter, shells, biota

0-6 in: dry, loose, brown, 20% f-c gravel (subangular, up to 3") 20% fines 60% f-c sand. ~~SILTY~~ SAND W/ GRAVEL (SM). Trace biota (shells). Trace organics (wood debris)

Sheen Test Results: No sheen

Staining Results: No staining

PID Results: background 0.0
sample 0.0

Sample Containers: 1

Analyses: Archive: GS-06-0-0.5-170524 @ 1455
Composite: GS-COMP-02-0-0.5 @ 1510

ANCHOR QEA

Surface Soil Field Log

Job: Oakland Bay Restoration Project	Station: GS-07
Job No: 160331-01.01	Date: 5/24/17
Field Staff: N. Kochie, B. Wright, J. Dunay	Time: 1550
Datum: NAD83 Washington State Plane South, US feet	Sample Method: Hand Trowel
Northing:	Recovery Depth (in): 0-6"
Easting:	

Sample Description: surface cover, (density), moisture, color, minor modifier, MAJOR modifier, other constituents, odor, sheen, layering, anoxic layer, debris, plant matter, shells, biota

0-6 in: dry, loose, light brown, 15% f-c gravel (subrounded, up to 4"), 80% brown 55% f-c sand SILTY SAND W/GRAVEL (SM). Trace organics (plant mtl).

Sheen Test Results: No sheen

Staining Results: No staining

PID Results: background 0.0
Sample 1.2

Sample Containers: 1

Analyses: Archive: GS-07-0-0.5-170524 @ 1550
Composite: GS-Comp-03-0-0.5 @ 1700
FD: GS-Comp-103-0-0.5 @ 1705

ANCHOR QEA

Surface Soil Field Log

Job: Oakland Bay Restoration Project	Station: GS-08
Job No: 160331-01.01	Date: 5/24/17
Field Staff: N. Kochie, B. Wright, J. Dunay	Time: 1810
Datum: NAD83 Washington State Plane South, US feet	Sample Method: Hand Trowel
Northing:	Recovery Depth (in): 0-6"
Easting:	

Sample Description: surface cover, (density), moisture, color, minor modifier, MAJOR modifier, other constituents, odor, sheen, layering, anoxic layer, debris, plant matter, shells, biota

0-6 in: dry, loose, brown, 20% f-c gravel (angular up to 3"), 20% fines, 60% f-c sand SILTY SAND W/GRAVEL (SM). Trace biota (shells). Trace organics (plant rib).

Sheen Test Results: No sheen

Staining Results: No staining

PID Results: background 0.0
Sample 0.0

Sample Containers: 1

Analyses: Archive: GS-08-0-0.5-170524 @1810
Composite: GS-COMP-04-0-0.5 @1820

ANCHOR QEA

Surface Soil Field Log

Job: Oakland Bay Restoration Project	Station: GS-09
Job No: 160331-01.01	Date: 5/24/17
Field Staff: N. Kochie, B. Wright, J. Dunay	Time: 1615
Datum: NAD83 Washington State Plane South, US feet	Sample Method: Hand Trowel
Northing:	Recovery Depth (in): 0-6"
Easting:	

Sample Description: surface cover, (density), moisture, color, minor modifier, MAJOR modifier, other constituents, odor, sheen, layering, anoxic layer, debris, plant matter, shells, biota

0-6 in: dry, loose, light brown, 20% gravel (submmoded up to 3"), 15% fines, 65% f-c sand SILTY SAND w/GRAVEL (SM). Trace organics (plant roots).

Sheen Test Results: No sheen

Staining Results: No staining

PID Results: background 0.0
sample 1.2

Sample Containers: 1

Analyses: Archive: GS-09-0-0.5-170524 @ 1615
Composite: GS-Comp-03-0.-0.5 @ 1700
FD: GS-Comp-103-0-0.5 @ 1705

ANCHOR QEA

Surface Soil Field Log

Job: Oakland Bay Restoration Project	Station: GS-10
Job No: 160331-01.01	Date: 5/24/17
Field Staff: N. Kochie, B. Wright, J. Dunay	Time: 1750
Datum: NAD83 Washington State Plane South, US feet	Sample Method: Hand Trowel
Northing:	Recovery Depth (in): 0-6"
Easting:	

Sample Description: surface cover, (density), moisture, color, minor modifier, MAJOR modifier, other constituents, odor, sheen, layering, anoxic layer, debris, plant matter, shells, biota

0-6 in: dry, loose, brown, 20% f-c gravel (subangular up to 3"), 20% fines, 60% f-c sand. SILTY SAND w/ GRAVEL (SM). Trace organics (twigs, plant roots). Trace biota (shells).

Sheen Test Results: No sheen

Staining Results: No staining

PID Results: background: 0.0
sample: 0.0

Sample Containers: 1

Analyses: Archive: GS-10-0-0.5-170524 @ 1750
Composite: GS-COMP-04-0-0.5 @ 1820

ANCHOR QEA

Surface Soil Field Log

Job: Oakland Bay Restoration Project	Station: GS-11
Job No: 160331-01.01	Date: 5/24/17
Field Staff: N. Kochie, B. Wright, J. Dunay	Time: 1640
Datum: NAD83 Washington State Plane South, US feet	Sample Method: Hand Trowel
Northing:	Recovery Depth (in): 0-6"
Easting:	

Sample Description: surface cover, (density), moisture, color, minor modifier, MAJOR modifier, other constituents, odor, sheen, layering, anoxic layer, debris, plant matter, shells, biota

0-6 in: dry, loose, brown, 30% gravel (subrounded up to 4"), 20% fines, 50% f-c sand, SILTY SAND w/ GRAVEL (SM) trace organics (plant mtls).

Sheen Test Results: No sheen

Staining Results: No staining

PID Results: background 0.0
Sample 0.0

Sample Containers: 1

Analyses: Archive: GS-11-0-0.5-170524 @ 1640
Composite: GS-COMP-03-0-0.5 @ 1700
FD: GS-COMP-103-0-0.5 @ 1705

ANCHOR QEA

Surface Soil Field Log

Job: Oakland Bay Restoration Project	Station: GS-12
Job No: 160331-01.01	Date: 5/24/17
Field Staff: N. Kochie, B. Wright, J. Dunay	Time: 1725
Datum: NAD83 Washington State Plane South, US feet	Sample Method: Hand Trowel
Northing:	Recovery Depth (in): 0-6"
Easting:	

Sample Description: surface cover, (density), moisture, color, minor modifier, MAJOR modifier, other constituents, odor, sheen, layering, anoxic layer, debris, plant matter, shells, biota

0-6 in: moist, loose, brown, 10% fines, 20% f-c gravel (subrounded, up to 1 inch), 70% f-c Sand POORLY GRADED SAND W/GRAVEL (SP)

Sheen Test Results: No sheen

Staining Results: No staining

PID Results: background 0.0
Sample 0.0

Sample Containers: 1

Analyses: Archive: GS-12-0-0.5-170524 @ 1725
Composite: GS-comp-04-0-0.5 @ 1820

ATTACHMENT A-5
SURFACE SOIL PHOTOGRAPHS


GS-01
5/24/17
1025
DOOLEYBOARDS


GS-02
5/24/17
1225
DOOLEYBOARDS


GS-03
5/24/17
1055
DOOLEYBOARDS


GS-04
5/24/17
1415
DOOLEYBOARDS


GS-05
5/24/17
1125
DOOLEYBOARDS


GS-06
5/24/17
1455


GS-07
5/24/17
1550
DOOLEYBOARDS
ACE


GS-08
5/24/17
1810
DOOLEYBOARDS


GS-09
5/24/17
1615
DOOLEYBOARDS


GS-10
5/24/17
1750
DOOLEYBOARDS


GS-11
5/24/17
1640


GS-12
5/24/17
1725
DOOLEYBOARDS

ATTACHMENT A-6
CHAIN OF CUSTODY RECORDS

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number:	Turn-around Requested: Standard	Page: 1 of 5	
ARI Client Company: Anchor QEA	Phone: 206 903 3320	Date: 5/24/17	Ice Present?
Client Contact: Jay Duval		No. of Coolers:	Cooler Temps:
Client Project Name: Oakland Bay			
Client Project #: 160331-01.01	Samplers: JD, BW, NK		

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested: Archive -10°C	Notes/Comments
SB-01-0-2.5-170524	5/24/17	1050	Soil	1	X	
SB-01-2.5-5-170524		1055		1	X	
SB-01-5-7.5-170524		1100		1	X	
SB-02-0-2.5-170524		1150		1	X	
SB-02-2.5-5-170524		1155		1	X	
SB-02-5-7.5-170524		1200		1	X	
SB-03-0-2.5-170524		1250		1	X	
SB-03-2.5-5-170524		1255		1	X	
SB-03-5-7.5-170524		1300		1	X	

Comments/Special Instructions	Relinquished by: (Signature)	Received by: (Signature)	Relinquished by: (Signature)	Received by: (Signature)
	Printed Name: NORA KOCHIE	Printed Name: Brittney Hall	Printed Name:	Printed Name:
	Company: ANCHOR QEA	Company: ARI	Company:	Company:
	Date & Time: 5/25/17 1050	Date & Time: 5/25/17 10:50	Date & Time:	Date & Time:

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number:	Turn-around Requested: STD	Page: 2 of 5	
ARI Client Company: Anchor QEA	Phone: 206.903.3320	Date: 5/24/17	Ice Present?
Client Contact: Jay Dunn		No. of Coolers:	Cooler Temps:
Client Project Name: Oakland Bay			
Client Project #:	Samplers: JD, BW, NK		

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested: Metals	cPAH / PAH / HPAH	Dissolved Arsenic	Grain Size	TS / TOC / TVS / NH3	Total Sulfides	Archive -10°C		Notes/Comments
SB-Comp-01A-0-2.5	5/24/17	1305	Soil	7	X	X	X	X	X	X	X		
SB-Comp-01B-2.5-5		1310		7	X	X	X	X	X	X	X		
SB-Comp-01ZA-5-7.5 DUP		1315		7	X	X	X	X	X	X	X		
SB-Comp-02A-0-2.5		1800		7	X	X	X	X	X	X	X		
SB-Comp-02B-2.5-5		1805		7	X	X	X	X	X	X	X		
SB-Comp-02ZA-5-7.5		1810		7	X	X	X	X	X	X	X		
SB-Comp-02ZB-7.5-10		1815		7	X	X	X	X	X	X	X		
					X						X		Dupe
SB-Comp-102B-2.5-5		1805	Soil	6	X	X	X	X	X	X	X		Dupe

Comments/Special Instructions	Relinquished by: (Signature)	Received by: (Signature)	Relinquished by: (Signature)	Received by: (Signature)
See SAP for analytes	Printed Name: Nora Kachie	Printed Name: Brittney Hall	Printed Name:	Printed Name:
	Company: Anchor QEA	Company: ARI	Company:	Company:
	Date & Time: 5/25/17 10:50	Date & Time: 5/25/17 10:50	Date & Time:	Date & Time:

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number:	Turn-around Requested: STD	Page: 3 of 5	
ARI Client Company: Anchor QEA	Phone: 206 903 320	Date: 5/24/17	Ice Present?
Client Contact: Joy Duncy		No. of Coolers:	Cooler Temps:
Client Project Name: Oakland Bay			
Client Project #:	Samplers: JD, BW NK		

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested: Arsenic 7440-38-2	Notes/Comments
SB-04-0-2.5-170524	5/24/17	1440	soil	1	X	
SB-04-2.5-5-170524		1445		1	X	
SB-04-5-7.5-170524		1450		1	X	
SB-04-7.5-10-170524		1455		1	X	
SB-05-0-2.5-170524		1630		1	X	
SB-05-2.5-5-170524		1635		1	X	
SB-05-5-7.5-170524		1640		1	X	
SB-05-7.5-10-170524		1645		1	X	
SB-06-0-2.5-170524		1740		1	X	
SB-06-2.5-5-170524		1745		1	X	

Comments/Special Instructions	Relinquished by: (Signature)	Received by: (Signature)	Relinquished by: (Signature)	Received by: (Signature)
	Printed Name: NORA KOCHIE	Printed Name: Britney Hall	Printed Name:	Printed Name:
	Company: ANCHOR QEA	Company: ARI	Company:	Company:
	Date & Time: 5/25/17 1050	Date & Time: 5/25/17 10:50	Date & Time:	Date & Time:

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number:	Turn-around Requested: STD	Page: 4 of 5	
ARI Client Company: Anchor QEA	Phone:	Date: 5/27/17	Ice Present?
Client Contact: Jay Duray		No. of Coolers:	Cooler Temps:
Client Project Name: Oakland Bay			
Client Project #:	Samplers: JD, BW, NK		

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested: Archive -10°C								Notes/Comments
SB-06-5-7.5-170524	5/24/17	1250	Soil	1	X								
GS-01-0-0.5-170524	5/24/17	1025			X								
GS-02-0-0.5-170524		1225			X								
GS-03-0-0.5-170524		1055			X								
GS-04-0-0.5-170524		1415			X								
GS-05-0-0.5-170524		1125			X								
GS-06-0-0.5-170524		1455			X								
GS-07-0-0.5-170524		1550			X								
GS-08-0-0.5-170524		1810			X								
GS-09-0-0.5-170524		1615			X								

Comments/Special Instructions	Relinquished by: (Signature)	Received by: (Signature)	Relinquished by: (Signature)	Received by: (Signature)
	Printed Name: ANCHOR QEA	Printed Name: Brittney Hall	Printed Name:	Printed Name:
	Company: NORA KOCH LLC	Company: ARI	Company:	Company:
	Date & Time: 5/25/17 1050	Date & Time: 5/25/17 10:50	Date & Time:	Date & Time:

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number:	Turn-around Requested: STD	Page: 5 of 5	
ARI Client Company: ANCHOR QEA	Phone: 206-903-3320	Date: 5/24/17	Ice Present?
Client Contact: JOY DUNAY		No. of Coolers:	Cooler Temps:
Client Project Name: OAKLAND BAY			
Client Project #:	Samplers: JD, BW, NK		

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Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested: PAHs	Analysis Requested: Archive	Notes/Comments
GS-10-0-0.5-170524	5/24/17	1750	Soil	1		X	
GS-11-0-0.5-170524	"	1640	"	"		X	
GS-12-0-0.5-170524	"	1725	"	"		X	
GS-COMP-01-0-0.5	"	1125	"	"	X		
GS-COMP-02-0-0.5	"	1510	"	"	X		
GS-COMP-03-0-0.5	"	1700	"	"	X		
GS-COMP-04-0-0.5	"	1820	"	"	X		
GS-COMP-103-0-0.5	"	1705	"	"	X		FIELD DUP

Comments/Special Instructions: SEE SAP FOR ANAYSIS

	Relinquished by:	Received by:	Relinquished by:	Received by:
(Signature)		Brittney Hall		
Printed Name:	NORA KOCHIE	Brittney Hall		
Company:	ANCHOR QEA	ARI		
Date & Time:	5/25/17 1050	5/25/17 10:50		

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

ATTACHMENT A-7
DAILY SAFETY BRIEFING FORMS

Daily Safety Briefing Form

ANCHOR QEA

Date: 5/23/17
Project No: 160331-01.01
Project Name: Oakland Bay Restoration Project

Person Conducting Meeting: NICKIE
Health & Safety Officer: TEMPLETON
Project Manager: DRURY

TOPICS COVERED:

- ☐ Emergency Procedures and Evacuation Route
- ☐ Directions to Hospital
- ☐ HASP Review and Location
- ☐ Safety Equipment Location
- ☐ Proper Safety Equipment Use
- ☐ Employee Right-to-Know/ SDS Location
- ☐ Fire Extinguisher Location
- ☐ Eye Wash Station Location
- ☐ Buddy System
- ☐ Self and Coworker Monitoring
- ☐ Lines of Authority
- ☐ Communication
- ☐ Site Security
- ☐ Vessel Safety Protocols
- ☒ Work Zones
- ☐ Vehicle Safety and Driving/ Road Conditions
- ☐ Equipment Safety and Operation
- ☒ Proper Use of PPE
- ☐ Decontamination Procedures
- ☐ Near Miss Reporting Procedures
- ☐ Lifting Techniques
- ☐ Slips, Trips, and Falls
- ☐ Hazard Exposure Routes
- ☐ Heat and Cold Stress
- ☒ Overhead and Underfoot Hazards
- ☐ Chemical Hazards
- ☐ Flammable Hazards
- ☐ Biological Hazards
- ☐ Eating/Drinking/Smoking
- ☐ Reviewed Prior Lessons Learned
- ☐ Field Team Medical Conditions for Emergency Purposes (Confidential): _____
- ☐ Other: _____

Weather Conditions: Sunny, light wind, 76°F

Daily Work Scope: utility locate, sample location locate

Site-specific Hazards: working site, near water

Safety Comments:

Attendees

Printed Name	Signature
Ryan Warwick	
NORA KOCHIE	

Daily Safety Briefing Form

ANCHOR QEA

Date: 5/24/17
Project No: 160331-01.01
Project Name: Oakland Bay Restoration Project

Person Conducting Meeting: BW **Health & Safety Officer:** CT **Project Manager:** JD/TD

TOPICS COVERED:

- ☒ Emergency Procedures and Evacuation Route
- ☒ Directions to Hospital
- ☐ HASP Review and Location
- ☐ Safety Equipment Location
- ☐ Proper Safety Equipment Use
- ☐ Employee Right-to-Know/ SDS Location
- ☐ Fire Extinguisher Location
- ☐ Eye Wash Station Location
- ☐ Buddy System
- ☐ Self and Coworker Monitoring
- ☐ Lines of Authority
- ☐ Communication
- ☐ Site Security
- ☒ Vessel Safety Protocols
- ☐ Work Zones
- ☐ Vehicle Safety and Driving/ Road Conditions
- ☐ Equipment Safety and Operation
- ☒ Proper Use of PPE
- ☐ Decontamination Procedures
- ☐ Near Miss Reporting Procedures
- ☐ Lifting Techniques
- ☐ Slips, Trips, and Falls
- ☐ Hazard Exposure Routes
- ☐ Heat and Cold Stress
- ☒ Overhead and Underfoot Hazards
- ☐ Chemical Hazards
- ☐ Flammable Hazards
- ☐ Biological Hazards
- ☐ Eating/Drinking/Smoking
- ☐ Reviewed Prior Lessons Learned
- ☐ Field Team Medical Conditions for Emergency Purposes (Confidential):

☒ Other: rebar, boards w/nails

Weather Conditions: sunny, windy

Daily Work Scope: geoprobe, soil borings

Site-specific Hazards: trip hazards, snag hazards

Safety Comments: be mindful of underfoot hazards & wear sunscreen!

Attendees

Printed Name	Signature
Bernadette Wright	
Jo, Dan	
NORA ICCHIE	
Zach Bailey	
Taylor Wright	

Appendix B
Laboratory Reports

(Laboratory reports provided separately)

Appendix C
Data Validation Reports

(Data validation reports provided separately)