
APPENDIX D
RESULTS OF HOT-SPOT CHARACTERIZATION
ICS UPLAND AND EMBAYMENT
Final Draft – Revised 1-24-22

FEASIBILITY STUDY REPORT
ICS/NWC RI/FS
SEATTLE, WASHINGTON

PREVIOUSLY SUBMITTED TO ECOLOGY
ON JANUARY 24, 2022

6034 N. Star Rd., Ferndale, Washington 98248
Telephone (cell) – (206) 498-6616

MEMORANDUM

TO: Vicki Sutton – Department of Ecology

FROM: Matt Dalton

DATE: Final Draft: May 21, 2021 (Revised 1-24-22)

SUBJECT: Results of Hot-Spot Characterization
ICS Upland and Embayment
ICS Site, Seattle, Washington

REF. NO: SUM-008-03FS (re: HS Tech MM Draft 5-21-21 rev 1-19-22)

CC: Ralph Palumbo
Steve Thiele
Ken Bloch
Adam Trotsky
Dave Cooper
Rob Webb

This technical memorandum presents the results of the “*Hot-Spot Characterization*” of sediment and soil associated with the ICS [former NW Cooperage Site], Seattle, Washington (Figure 1). The initial draft report was submitted to the Washington State Department of Ecology (Ecology) on May 21, 2021, and comments were received Ecology on December 3, 2021. The draft report was revised based on Ecology’s comments. The focus of this work was the ICS upland and the adjacent embayment that is tributary to the Lower Duwamish Waterway (Figure 2a). Within the upland, the focus was the embayment shoreline and a filled in drainage ditch located along the eastern site boundary (Figure 2b). Prior to filling, a portion of this ditch was used as a settling “*Lagoon*”. Selected historic air photographs are presented in Appendix E to illustrate historic features discussed later in this report. A more complete set of historic air photographs are presented in Appendix P of the DOF Draft Remedial Investigation (RI) Report (DOF 2020a).

The hot-spot characterization was completed in accordance with a work plan (DOF 2020c) approved by Ecology in an e-mail to Matt Dalton (DOF) dated August 20, 2020. The work plan objectives were as follows:

- Refine the horizontal and vertical extent of upland soil hot-spots located along the embayment shoreline – General Hot-Spot Evaluation. Concentrations used to generally identify hot-spots are summarized below in the section titled “*Hot-Spot Characterization*”.

- Determine the horizontal and vertical extent of several smaller hot-spot areas that lie within the general hot-spot area and elsewhere on the site where total PCB concentrations in soil and sediment exceed 50 ppm. These areas require special evaluation and handling under the Toxics Substances Control Act (TSCA) and the federal PCB regulations under 40(CFR) Part 761.
- Collect additional data to characterize conditions along the filled in drainage ditch to assist in completing a draft Cleanup Action Plan.

In addition to Ecology, the sediment sampling work was authorized by the Army Corps of Engineers (Corps 2020) under Nationwide Permit (NWP) 6, Survey Activities. EPA consulted with the Corps and requested information on how sheens potentially caused by the sampling were to be prevented/minimized. DOF responded to EPA's concerns in an e-mail to Jordan Bunch (Corps) dated June 1, 2020. The following provisions were implemented:

- 1) Provisions to address any NAPL sheens:
 - a) Completed sampling during a low tide.
 - b) Collected sediment samples on a plywood platform to minimize disturbance of sediment and the creation of NAPL sheens. Photographed sampling as samples were collected.
 - c) Backfilled core locations with bentonite chips.
 - d) Had sorbent pads on-hand to sop-up any sheen. No granular sorbent was necessary or used. Pads were applied adjacent to bore holes to sorb any sheen and were disposed off-site as Investigation Derived Waste (IDW).
 - e) A thin layer of imported sand was placed over each sampling location.
 - f) Deployed sorbent-booms across in-let and observed reflooding of area. Photographed sediment surface before and after sampling, and water surface during flood.
 - g) Described observations and included photographs in report that documents the sampling and validated analytical results.

Comment: The agreed upon provisions to minimize sheens were incorporated into the embayment sediment sampling. Sheens that were observed at isolated sampling locations were removed using sorbent pads. Disturbed areas of sediment were covered with imported sand. No sheens were observed during the flooding of the embayment as the tide rose after each day of sampling. Selected photographs are presented in Appendix D.

- 2) Notify EPA (and Ecology) two (2) days prior to sample collection. EPA's primary contact was Erika Hoffman (Hoffman.Erika@epa.gov).

Comment: Ecology and EPA were notified of the sampling schedule. No agency staff visited the site while the sampling was being completed.

As this technical memorandum is being prepared, DOF and Ecology are working towards resolving issues associated with a draft Feasibility Study (FS) that was submitted to Ecology in March 2020 (DOF 2020b). Comments were received from Ecology on February 1, 2021. Both DOF and Ecology agree that the revised FS would benefit from inclusion of the hot-spot characterization data in the development and evaluation of remedial alternatives. It is anticipated that this memorandum will be an appendix to the FS.

SITE FEATURES

The focus of this characterization work was the ICS upland and adjacent embayment. The draft RI (DOF 2020a) indicates that the primary areas of concern within the ICS upland are along 1) the south embayment shoreline and 2) filled-in ditch located along the ICS east property line (Figure 2b). Review of historical air-photographs (Appendix E) indicate that initial upland drum handling primarily occurred adjacent to a former wharf that extended outward into the former turning basin. A drainage ditch was located along the eastern property line. A portion of the ditch was used as a settling basin prior to filling (Figure 2b).

The embayment was created in the mid- to late-1960s when filling created what is now the Douglas property. Review of historic aerial photographs indicates that filling on both sides of the embayment created a somewhat deeper channel along the north embayment shoreline.

A concrete plant operated on the Douglas property soon after it was ready for use. Reconnaissance and sampling in the embayment indicate two features of note. A concrete wash precipitate layer (precipitate cap) and local areas of waste concrete are present along portions of the north shoreline adjacent to the Douglas property. The precipitate cap was formed by the precipitation of silica upon discharge to the embayment. The precipitated silica cemented silts and sands that were present in the embayment. These layers lie over former bottom sediment that contain PCBs and other constituents. The southern edge of the layers is evident on air-photographs taken at low tide (e.g., see Figure E-5 in Appendix E). The approximate extent of the precipitate cap is shown on Figure 3bⁱ.

A fine-grained low-permeability aquitard lies at a depth of 7 to 8-feet below the western two-thirds of the ICS upland area and beneath a portion of the embayment (at shallower depths). The approximate extent of this layer is illustrated on the concentration plots and PCB sections discussed below.

HOT-SPOT CHARACTERIZATION

The additional site characterizations were completed in general accordance with the approved work plan (DOF 2020c). Deviations from the work plan were generally as follows:

- Upland Area – Proposed Push Probes
 - The probe located between probes PP-3 and PP-8 was not advanced because of thick vegetation and slope.
 - The probe just south of location P-6 was not advanced because of the presence of storm water storage tanks.
 - The probe patterns adjacent to locations P-1, P-8 and LP-3 were adjusted based on access and observations made during sampling.
- Embayment Area – Proposed Surface Sediment Samples and Cores
 - One core and several surface samples were not collected because the locations were below a decrepit wooden platform that was part of the old wharf.

ⁱ DOF completed a more detailed survey of the precipitate cap layer in June 2021. The results were submitted to Ecology on June 30, 2021 (DOF 2021) in a technical memorandum. The memorandum is included in Appendix G of this memorandum.

For purposes of this characterization, soil hot spots were delineated using the following criteria. The purpose of this analysis was to evaluate general concentration patterns, not necessarily to illustrate locations where cleanup levels, which have yet to be determined, are exceeded.

- **PCBs**
 - 50,000 ug/kg – based on possible future disposal requirements.
 - 10,000 ug/kg – based on the Method A cleanup level (CUL) for industrial sites (WAC 173-340-900, Table 745-1)
- **DRO+RRO**
 - 4,000 mg/kg – based on two times the Method A CUL in WAC 173-340-900, Table 745-1. This is the highest concentration that can remain on a site and still meet CULs (assuming other criteria are met) per WAC 173-340-745(8).
- **Lead**
 - Upland - 2,000 mg/kg - based on two times the Method A CUL in WAC 173-340-900, Table 745-1. This is the highest concentration that can remain on a site and still meet CULs (assuming other criteria are met) per WAC 173-340-745(8).
 - Sediment – 530 mg/kg – based on sediment cleanup screening level (CSL) in WAC 173-204-560.
- **Mercury**
 - Upland - 4 mg/kg – based on disposal criteria typical for Subtitle D landfill.
 - Sediment – 0.59 based on sediment cleanup screening level (CSL) in WAC 173-204-560.

ANALYTES, METHODS and DATA SOURCES

Hot-spot characterization was completed using soil analytical data for total PCBs, petroleum hydrocarbons (sum of diesel-range and heavy-oil range organics – DRO+RRO), lead, and mercury. Data used to prepare this memorandum were obtained from the draft RI (DOF 2020a – Appendix H) and the field/laboratory analytical program implemented as part of the approved work plan. Attached Table 1 summarizes available sediment and soil analytical data along with collection date. Specific data sources are summarized in Table 2 below.

Table 2 – Sediment and Soil Analytical Data Sources

Media	Spl. Designations Prefix	Collection Date	Source
Surface Sediment	DSS-xx; SED-x; LDWSS84; B5a2	July 2012 and Sept./Dec. 2014	Appendix F -Table F.2a in Draft RI
	HS-x	Oct. 2020	Appendix B – this memo. (DMD validation reports).
Subsurface Sediment	Core x; LDW-SC410	Nov. 2012; Feb. 2006	Appendix F -Table F.4a in Draft RI
	HSAx	Oct. 2020	Appendix B – this memo. (DMD validation reports).
Upland Soil	HC-Bx	Sept. 1986	Appendix H – Table H.1 in Draft RI
	P-x (P1 to P10)	July 2008; Nov./Dec. 2014	Appendix H – Table H.3a in Draft RI
	SA-MW _x	April 2007	
	LP-x (LP1 to LP4); DOF-MW _x	Oct. 2012	Appendix H – Table H.4a in Draft RI
	MW-X _x	Oct. 2015	

	P-xx (P11 to P33)	Nov./Dec. 2014	Appendix B – this memo. (DMD validation reports).
	PP-x (PP1 to PP40)	Oct./Nov. 2020	
	LPx-xx (LP3-xx; LP8-xx)	Jan./Feb. 2021	
	LP-x (LP5 to LP18)	Jan. 2021	

Soil and sediment samples were collected by DOF between October 2020 and January 2021. Sediment samples were collected during low tides using hand methods, including samples designated as “HS” or “HSA” in Table 1. Hand methods (post-hole digger and auger) were successful in collecting samples to depths of up to seven feet below mudline. Several samples were collected beneath the concrete wash layer (HS-6, HS-7, HS-8ⁱⁱ). Sample descriptions are included in Appendix A.

Upland soil samples were collected using a Geoprobe 7822DT (push probe) furnished by Cascade Environmental Inc. Dave Cooper LG (DOF Sr. Principal Geologist) and/or Anthony Cerruti (DOF Staff Geologist) collected and described the soil/sediment samples. The samples were described using ASTM-D2488 as a general guide. Sample descriptions and logs are presented in Appendix A.

The samples were analyzed by Analytical Resources Inc. (ARI), Tukwila, Washington using the methods listed in Table 3 below.

Table 3 – Analytical Methods

Analyte	Method
Total PCB Aroclors	EPA M. 8082a
Petroleum Hydrocarbons (DRO+RRO)	Ecology M. NWTPH-Dx
Lead	EPA-M.6010C
Mercury	EPA-M. 7471B
TCLP (RCRA Metals)	EPA-M. 6010D & M.7470A

The PCB, DRO+RRO, lead, and mercury results were validated by DMD Inc. (Raleigh Farlow). The validation reports are included in Appendix B and include tables summarizing the validated analytical data. In addition to the soil and sediment constituent analyses, six upland soil samples were subjected to TCLP testing for RCRA metals (arsenic, barium, cadmium, chromium, lead, selenium, silver, and mercury). This testing was completed to assess whether the sediment/soils containing relatively high metals concentrations would potentially designate as characteristic dangerous waste (DW) under Chapter 173-303 WAC if excavated. This recent TCLP testing supplements the results of previous testing as discussed in Section 5.3.4 of the draft RI report. TCLP test results are summarized in attached Table 1.

Analytical data collected prior to 2020 has been uploaded to Ecology’s EIM database. Data collected in 2020 and 2021 are currently being compiled and formatted for upload to EIM.

ⁱⁱ Samples from previously collected cores “A”, “B”, “D”, and “G” were also obtained below the concrete wash (precipitate layer).

SAMPLE MEDIA, LOCATIONS AND CONCENTRATION PLOTS

Sediment and upland soil analytical data were compiled in Table 1. Sampling locations are presented on Figure 3a. Surface and subsurface sediment sampling locations are also presented on Figures 3b and 3c for clarity.

Soil concentration plots for PCBs, DRO+RRO, lead and mercury were prepared to illustrate concentration patterns and provide the basis for evaluation of soil volumes as part of completing the FS. Concentration plots were prepared within the depth below ground surface intervals of 0 to 3-feet, 3 to 5-feet, 5 to 10-feet, 10 to 15-feet, and 15 to 20-feet. Table 1 summarizes the sample intervals. In some cases, if two samples were available within a specific depth interval, one of the samples may have been plotted within a deeper depth interval to make best use of the data. At some locations less than three feet, where the sample was near the bottom of the specified interval, the possible extent of PCB above the sample was interpreted based on sample descriptions on the logs presented Appendix A.

PCB Concentration Patterns in Sediment and Soil – Figures 4a to 4g show PCB concentrations in sediment and soil.

- PCB concentrations in shallow upland soils (<3-feet deep – Figure 4a) are greater than 50,000 ug/kg at four locations (locations SA-MW1, P1, P8 and MW-Ju/PP-39). PCB concentrations at these locations were between approximately 52,000 ug/kg and 129,000 ug/kg. Away from these locations, PCB concentrations higher than 10,000 ug/kg appear to extend in a wider area along the shoreline. The upland shoreline area appears to have been the working surface before the site was paved in the late 1980s (see Appendix E). The layer appears to range in thickness between approximately 1.5 and 3-feet.

Sediment concentrations above 50,000 ug/kg are located adjacent to the upland SA-MW1 area (Figures 4a and 4b) and in sediment below the former head of a wharf that extended outward from the former NW Cooperage shoreline (see Figures E-1 and E-2 in Appendix E). Most samples within this interval were collected at depths less than 1.0-feet. A PCB concentration up to 1,768,000 ug/kg was detected. Available data indicate PCB concentrations greater than 10,000 ug/kg appear to extend towards the mouth of the embayment along the north shoreline as illustrated on Figure 4a.

- PCB concentrations above 10,000 ug/kg in sediment/soil in the 3 to 5-feet interval (Figures 4c and 4d) appear less extensive as compared to the overlying interval. One soil sample (PCB=54,700 ug/kg) in a small area of the former settling lagoon and one sediment sample (PCB=61,800 ug/kg) exceeded 50,000 ug/kg. Concentrations in three areas were higher than 10,000 ug/kg including location P29 (32,300 ug/kg), MW-Ju (39,800 ug/kg), and P17 (34,000 ug/kg).
- PCB concentrations in sediment/soil in the 5 to 10-feet interval are shown on Figure 4e. Deeper PCB soil contamination above 10,000 ug/kg exists along the shoreline where a PCB concentration of 76,500 ug/kg was detected at location SA-MW1. Generally higher PCB concentrations were detected around the former settling lagoon. These materials are interpreted to be settling lagoon waste materials that were buried when the lagoon (ditch) was filled. Samples within the north and south portions of the lagoon were higher than 50,000 ug/kg (up to 209,300 ug/kg). PCB concentrations greater than 10,000 ug/kg were

detected in the MW-Ju/PP-36 location and at location LP-1 near the south end of the filled in drainage ditch.

Much lower PCB concentrations were detected in sediment as compared to overlying intervals. The highest PCB concentration (10,000 ug/kg) was detected at core G (5.1-foot). This sample appears to be below the concrete wash layer (cemented gravel layer 0 to 1-foot below mudline).

- PCB concentrations in sediment/soil in the 10 to 15-foot depth interval are shown on Figure 4f. Concentrations were below 10,000 ug/kg except for two settling lagoon samples (LP-11 = 32,130 ug/kg at 10.5 to 11.5-feet, and LP3-10W = 15,580 ug/kg at 10 to 12-feet).
- PCB concentrations in sediment/soil in the 15 to 20-foot depth interval are shown on Figure 4g. PCB concentrations were below 10,000 ug/kg except for two locations (SA-MW2 = 11,900 ug/kg at 15 to 16.5-feet, and P-18 = 11,700 ug/kg at 14 to 16-feet). These sample depths are interpreted to be near mouth of the ditch prior to filling.

DRO+RRO Concentration Patterns in Sediment and Soil - Figures 5a to 5g show DRO+RRO concentrations in sediment and soil.

- DRO+RRO concentrations in shallow soils (<3-feet deep – Figure 5a) show a similar general concentration pattern as PCBs. Relatively higher concentrations (>4,000 mg/kg) are present along the embayment shoreline. The highest upland soil concentration (53,400 mg/kg) was detected at location PP-39 (near MW-Ju). Sediment concentrations higher than 4,000 mg/kg (Figures 5a and 5b) appear present in the vicinity of SA-MW1 and the former wharf. The highest concentration (142,400 mg/kg) was detected at location HSA4 (2'-3'), just downslope of SA-MW1. Concentration gradients appear relatively steep (i.e., concentrations significantly decline within a short distance).
- DRO+RRO concentrations in sediment/soil in the 3 to 5-foot interval are presented on Figures 5c and 5d. Higher concentrations appear less extensive as compared to the overlying interval. Relatively higher concentrations were detected in three areas including downslope and to the northwest of SA-MW1 (up to 65,000 mg/kg), MW-Ju (46,000 mg/kg), and in the former settling lagoon area (15,840 mg/kg at location LP-12[5'-6']). Concentration gradients appear steep.
- DRO+RRO concentrations in sediment/soil in the 5 to 10-foot interval are shown on Figure 5e. Deeper soil contamination exists along the shoreline where a DRO+RRO concentration of up to 64,000 was detected at location SA-MW1 (5'-6.5'). The high DRO+RRO concentrations are coincident with the deeper PCB concentrations in this area (Figure 4e). Generally higher soil concentrations (up to 37,500 mg/kg) were detected around the former settling lagoon. These materials are interpreted to be settling lagoon waste materials that were buried when the lagoon (ditch) was filled.

Only one relatively high DRO+RRO concentration was detected in sediment within this interval (Core G - 16,300 mg/kg at 5.1-foot). This sample appears to be below the concrete wash layer (cemented gravel layer 0 to 1-foot below mudline).

- DRO+RRO concentrations in sediment/soil in the 10 to 15-foot depth interval are shown on Figure 5f. Concentrations were below 4,000 mg/kg except for three locations (4,900 mg/kg at P8, 4,040 mg/kg at P9, and 10,930 mg/kg at LP3-10W). The concentration detected at LP3-10W was the highest concentration detected within this depth interval.
- DRO+RRO concentrations in soil in the 15 to 20-foot depth interval are shown on Figure 5g. A concentration of 8,400 mg/kg was detected at location P18 (14'-16'). This sample is interpreted to be near mouth of the ditch prior to filling.
- Comment: The relatively high DRO+RRO concentrations in upland soil samples raise the possible presence of separate phase LNAPL with the potential to migrate laterally. Separate phase LNAPL has only been detected in one well casing (SA-MW1). As illustrated on Figure 5-7 of the draft RI report (DOF 2020a), LNAPL has not been detected in other wells including two wells (LNAP-1 and LNAP-2) installed specifically to assess this possibility.

Lead Concentration Patterns in Sediment and Soil - Figures 6a to 6g show lead concentrations in sediment and soil.

- Lead concentrations in shallow soils (<3-feet deep – Figure 6a) are highest in relatively small areas adjacent to the shoreline where a lead concentration of 11,800 mg/kg was detected below the former boat house (location PP-16) and lead concentrations in sediment of 7,890 mg/kg (HS38) and 14,900 mg/kg (HSA4) were detected next to the shoreline. The most frequent and highest concentrations in shallow sediment were detected below the former wharf (Figures 6a and 6b) where lead concentrations up to 33,700 mg/kg (location HS9) were detected. Concentration gradients are relatively steep.
- Lead concentrations in sediment/soil in the 3 to 5-foot interval are presented on Figures 6c and 6d). Higher concentrations appear less extensive as compared to the overlying interval. Relatively higher concentrations were detected in the vicinity of SA-MW1 (up to 4,590 at P28 mg/kg) extending downslope into the embayment (up to 8,440 mg/kg at location HSA2 [3'-4']).
- Lead concentrations in sediment/soil in the 5 to 10-foot interval are shown on Figure 6e. Relatively high lead concentrations were detected in one upland shoreline sample (3570 mg/kg at location P-2 [5-6.5']) and in samples located within the southern part of the former lagoon (2,370 to 5,070 mg/kg). Only one relatively high lead concentration (1,340 mg/kg [5.1']) at Core G) was detected in sediment within this interval. This sample appears to be below the concrete wash layer (cemented gravel layer 0 to 1-foot below mudline).
- Lead concentrations in sediment/soil in the 10 to 15-foot and 15 to 20-foot depth intervals are shown on Figures 6f and 6g. The highest concentration (950 mg/kg at 14'-16') was detected at location P18.

Mercury Concentration Patterns in Sediment and Soil - Figures 7a to 7g show mercury concentrations in sediment and soil.

- Mercury concentrations in shallow soils (<3-feet deep – Figure 7a) are highest in relatively small areas in the vicinity of locations P8 (3.1 mg/kg) and PP-39 (5.0 mg/kg). The highest and most widespread concentrations of mercury were detected in shoreline sediment in the vicinity of the former wharf (Figures 7a and 7b) where mercury concentrations up to 94 mg/kg (location HS21) were detected. Concentration gradients are relatively steep.
- Mercury concentrations in sediment/soil in the 3 to 5-feet interval are presented on Figures 7c and 7d). Higher concentrations appear less extensive as compared to the overlying interval. A concentration of 5.3 mg/kg was detected in one upland soil sample (location P29 at 3’-4’). Relatively higher mercury concentrations (up to approximately 31 mg/kg) were detected in sediment downslope and to the northwest of location P29. The higher concentrations appear to be below the cemented concrete wash.
- Mercury concentrations in sediment/soil in the 5 to 10-feet interval are shown on Figure 7e. Relatively high mercury concentrations were detected in two upland shoreline sample (14 mg/kg at location PP-28 [10-11’] and 2.0 mg/kg at location SA-MW1 [5’-6.5’] and at sample locations within the southern (4.1 to 8.7 mg/kg) and northern (28 mg/kg) portions of the former settling lagoon. Much lower mercury concentrations were detected in the embayment sediment samples (up to 0.49 mg/kg).
- Mercury concentrations in sediment/soil in the 10 to 15-feet and 15 to 20-feet depth intervals are shown on Figures 7f and 7g. The highest concentrations (2.1 to 4.8 mg/kg) are associated with the former settling lagoon.

HOT-SPOT SUMMARY AND PCB SECTIONS

The additional soil/sediment hot-spot characterization refined the locations and extent of hot-spot soil as generally described in the draft RI report. Each of the general areas are further summarized below. The descriptions are supported by refined PCB sections presented in Figures 9a to 9l. Section trends are shown on Figure 8. To provide historical context, the descriptions are also supported by the historical air photographs presented in Appendix E.

- **Shallow shoreline soil and sediment** – A shallow layer of soil containing (predominately) relatively high concentrations of PCBs (Figure 4a) and DRO+RRO (Figure 5a) extends along the south embayment shoreline. The layer lies beneath paving, is approximately 1.5 to 3 feet thick, and includes PCB concentrations greater than 50,000 ug/kg in the vicinity of locations P1 (Section A-A’), P8 (Sections I-I and L-L’), and PP39 (Sections E-E’ and H-H’). This area generally corresponds to the “*working surface*” noted on the historical photographs in Appendix E.

High PCB, DRO+RRO, lead, and mercury concentrations are present in shallow sediment (Figures 4a, 4b, 5a, 5b, 6a, 6b, 7a, 7b). The high concentrations are generally located beneath the former wharf that was present in some configuration until the early to mid-1960s. PCB concentrations greater than 50,000 ug/kg are present in the shallow sediment and appear contiguous with the SA-MW1 area as illustrated on Figure 4a and Section B-B’ (Figure 9b).

- **Deeper shoreline soil and sediment** – Along portions of the south embayment shoreline, deeper soil contamination predominately consisting of PCBs and DRO+RRO is present

as illustrated on Figures 4c, 4e, 5c, and 5e, and Section G-G' (Figure 9g for PCBs). The deeper hot spots are generally centered on the following locations:

- **PP-8, PP12, and P17 (also Section A-A')**. PCB concentrations of 40,200 ug/kg (2.5 to 3.5-feet) and 1,634 ug/kg (5.5 to 6.5-feet) were detected at PP8, 10,640 ug/kg (2.5 to 3.5-feet) and 3506 ug/kg (5 to 6-feet) were detected at PP12, and 34,000 ug/kg (4.5 to 6.5-feet) and 8,400 ug/kg (6.7 to 8.0-feet) were detected at P17. The silt aquitard was encountered at a depth of 7 to 8-feet below grade at these locations. A PCB concentration of 391 ug/kg (6.5 to 7.5-feet) was detected just above the aquitard at PP12. PCB concentrations of between 22 and 54 ug/kg were detected in samples from the aquitard. DRO+RRO concentrations were between 16 and 13,740 mg/kg. Two samples were above 2,000 mg/kg (PP12[13,740 mg/kg] and PP8 [4710 mg/kg] both at 2.5 to 3.5-feet). No PCB concentrations greater than 50,000 ug/kg were detected in samples collected below a depth of approximately three to four feet along this portion of the ICS shoreline.

As illustrated on Figure 4c and Section A-A' (Figure 9a), it appears that the relatively high upland PCB concentrations extend into the embayment from this area. This appears consistent with the “work areas” shown on the historic air photographs presented in Appendix E (i.e., working areas north and northwest of the boat house illustrated on the photographs).

- **P2 and P3 (also Section B-B')**. This portion of the shoreline generally extends between locations P2 and P3 and includes monitoring well SA-MW1 where LNAPL has been detected. The geologic logs of borings in this area indicate it lies near the eastern edge of the silt aquitard. PCB concentrations greater than 10,000 ug/kg appear to extend to a depth of approximately 8-feet.

PCB concentrations between approximately 5 and 8-feet below grade were between 20,200 ug/kg (P2) and 76,500 ug/kg (SA-MW1). Within this same interval, DRO+RRO concentrations were between 13,200 mg/kg (P2) and 65,000 mg/kg (P29). Below a depth of approximately 8-feet, much lower PCB concentrations were detected (PCBs 102 ug/kg [P2] to 2,420 ug/kg [P3]; and DRO+RRO – 121 mg/kg [P2] to 330 mg/kg[P29]). Relatively high lead concentrations (3,570 and 4,590 mg/kg) were detected in the 3 to 6.5-foot depth samples from P2 and P29. Only one sample was higher than 50,000 ug/kg PCB.

As illustrated on Figures 4c and 4e, and Section B-B' (Figure 9b), the relatively high upland PCB concentrations extend into the embayment from this area. This appears consistent with the work areas shown on the historic air photographs presented in Appendix E (i.e., working area east and northeast of the boat house illustrated on the photographs).

- **PP38, PP-39 and MW-Ju (also Sections E-E' and H-H')**. This area appears to lie above the former mouth of the drainage ditch and was created by filling in the mid- to late-1960s (see Figures E-3 and E-4 in Appendix E). A concentration higher than 50,000 ug/kg was detected at location PP39 (2 to 3-feet). PCB concentrations greater than 10,000 ug/kg were detected in samples collected above a depth of approximately 8-feet. Within this interval, PCB concentrations

were between 33,010 ug/kg (PP39 at 7 to 8-feet) and 52,010 ug/kg (PP39 at 2 to 3-feet). Lower PCB concentrations (107 to 389 ug/kg) were detected in deeper samples (10 to 11-feet) as shown on the sections. Relatively high DRO+RRO concentrations (9,210 to 53,400 mg/kg) were co-located with the higher PCB concentrations.

- **Former settling lagoon (PCB Sections J-J' and L-L')**. A portion of the filled in ditch was used as a settling lagoon (DOF 2020a). The lagoon's position within the ditch, as shown on a 1963 survey drawing, is illustrated on Figures 4 to 7 and Sections J-J' (Figure 9j) and Section L-L' (Figure 9l). High concentrations of PCBs were detected in former lagoon sediments that were covered by filling. As illustrated on Section L-L', PCB concentrations greater than 50,000 ug/kg were detected at locations LP6 (52,000 ug/kg at 10 to 11-feet), LP-12 (54,700 ug/kg at 5 to 6-feet), LP3-20N (60,900 ug/kg at 5.5 to 6.5-feet), LP3 (113,000 ug/kg at 6 to 8-feet), and LP3-20S (170,700 ug/kg at 6.2 to 7.2-feet). The highest PCB concentration was detected at location LP3-10W (209,300 ug/kg at 5 to 7-feet).

Concentrations of DRO+RRO between 15,840 mg/kg and 35,800 mg/kg were detected in the same samples with PCBs greater than 50,000 ug/kg, as were lead (up to 3,600 mg/kg) and mercury (28 mg/kg).

UPLAND SOIL CONCENTRATION STATISTICS

To provide perspective on the concentrations of PCBs, DRO+RRO, lead, and mercury detected in upland soil, a set of statistics was calculated using the evaluation criteria in WAC 173-340-745(8) as a guide.ⁱⁱⁱ The evaluation criteria were applied to the soil contact screening levels (SLs) in the draft RI report (Table A5.15a^{iv}). Note that upland soil CULs have not yet been established for the site. To meet soil CULs, soil concentrations need to meet the following:

- The upper 95% confidence limit on the true mean needs to be below the CUL. This statistic was calculated using Ecology's MTCA-Stat program. The data was found to be lognormally distributed and the UCL95% value was calculated using Land's Method. The data [concentrations in soil less than 15-feet deep, the soil contact point of compliance per WAC 173-340-745(7) and WAC 173-340-740(6)(d)] and statistical output are presented in Appendix F.
- No more than 10% of the samples can be higher than the CUL, and
- No single sample can be higher than two times the CUL.

The site wide statistics for samples collected from depths of 15-feet or less and the industrial soil contact land-use based SLs are summarized in Table 4 below.

ⁱⁱⁱ Non-detect concentrations were set at the reporting limit.

^{iv} The industrial soil contact SLs in RI Table A5.15a were used herein. While the Terrestrial Ecology Evaluation (TEE) criteria currently apply to a small unpaved area of the site, remedial cleanup within the former lagoon area and paving will address the TEE criteria. In addition, the total PCB concentration statistics are compared to the Method A CULs for industrial sites (10,000 ug/kg in Table 745-1 in WAC 173-340-900) rather than the Method B CUL of 65,600 ug/kg.

Table 4 – Soil Concentrations Compared to RI Screening Levels

Constituent	No. of Spls.	Highest Conc.	Screening Level	UCL95 %	% of Spls. > SL (a)	No. Spls. > 2x CUL
Total PCBs (ug/kg)	332	209,300	10,000	56250	15.7 (52)	34
DRO+RRO (mg/kg)	302	65,000	2,000	11074	24.8 (75)	60
Lead (mg/kg)	295	11800	1,000	314	5.4 (16)	13
Mercury (mg/kg)	272	27.8	24	0.39	<1 (1)	0

Notes: (a) – (75)=number of samples > SL. Bold values exceed evaluation criteria.

The results in Table 4 indicate that PCBs and DRO+RRO will ultimately drive the remediation as these constituents exceeded all three of the evaluation criteria. Lead exceeded one of the three evaluation criteria; a few samples were higher than two-times the SL. Mercury did not exceed any of the evaluation criteria.

To provide further insights into the concentration patterns in upland soil, average detected concentrations were summarized by depth in Tables 5a to 5d below.

Table 5a – Total PCB Concentrations in Upland Soil w/ Depth

Depth Interval (ft)	No. of Samples	Average Conc. (ug/kg)	Highest Conc. (ug/kg)	% of Spls > SL	No. Spls. >2x SL	No. Spls. >50,000 ug/kg
0 to 3	66	15390	129,500	24	15	6
>3 to 5	24	3633	39,800	2	2	0
>5 to 10	154	8412	209,300	20	15	8
>10 to 15	88	2462	52,000	6	2	1
>15 to 20	45	485	11,900	1	0	0

Notes: SL=10,000 ug/kg

Table 5b – DRO+RRO Concentrations in Upland Soil w/ Depth

Depth Interval (ft)	No. of Samples	Average Conc. (mg/kg)	Highest Conc. (mg/kg)	% of Spls > SL	No. Spls. >2x SL
0 to 3	58	8106	53,400	33	29
>3 to 5	23	5932	65,000	3	3
>5 to 10	137	3530	64,000	28	21
>10 to 15	84	1860	33,440	11	7
>15 to 20	39	153	3100	1	0

Notes: SL=2,000 mg/kg

Table 5c – Lead Concentrations in Upland Soil w/ Depth

Depth Interval (ft)	No. of Samples	Average Conc. (mg/kg)	Highest Conc. (mg/kg)	% of Spls > SL	No. Spls. >2x SL
0 to 3	57	673	11800	6	5
>3 to 5	24	242	4590	1	1
>5 to 10	137	243	5070	8	7
>10 to 15	77	85	1090	1	0
>15 to 20	36	13	204	0	0

Notes: SL=1,000 mg/kg

Table 5d – Mercury Concentrations in Upland Soil w/ Depth

Depth Interval (ft)	No. of Samples	Average Conc. (mg/kg)	Highest Conc. (mg/kg)	% of Spls > SL	No. Spls. >2x SL
0 to 3	53	0.47	5	0	0
>3 to 5	24	0.31	5.3	0	0
>5 to 10	128	0.51	12	0	0
>10 to 15	67	0.88	28	1	0
>15 to 20	28	0.11	0.5	0	0

Notes: SL=24 mg/kg (based on unrestricted site use)

In general, concentrations higher than SLs were detected in soil samples collected from depths of less than fifteen feet. SL exceedances along the shoreline were generally less than ten feet in depth while those around the former lagoon were deeper, between ten and fifteen feet.

EMBAYMENT SEDIMENT CONCENTRATION STATISTICS

A set of simple statistics were compiled to provide perspective on the concentrations of PCBs, DRO+RRO, lead, and mercury detected in embayment sediment. Application of sediment SLs is more complicated as compared to upland soils because benthic protection criteria are applied on a discrete location basis while those to protect human health are applied on more widespread statistical basis. Tables 6a to 6d summarize average and highest detected concentrations with increasing depth below mudline.

Table 5a – PCB Concentrations in Sediment w/ Depth

Depth Interval (ft)	No. of Samples	Average Conc. (ug/kg)	Highest Conc. (ug/kg)
0 to 1	55	14,8132	1,768,000
>1 to 3	21	24,330	171,400
>3 to 5	22	13,438	61,800
>5	22	702	10,000

Note: RI SL = 2 ug/kg-dry weight (based on LDW ROD)

Table 5b – DRO+RRO Concentrations in Sediment w/ Depth

Depth Interval (ft)	No. of Samples	Average Conc. (mg/kg)	Highest Conc. (mg/kg)
0 to 1	40	9,496	83000
>1 to 3	13	14,275	142,400
>3 to 5	19	7,543	46,200
>5	19	1,037	16,300

Note: RI SL = 2,000 mg/kg

Table 5c – Lead Concentrations in Sediment w/ Depth

Depth Interval (ft)	No. of Samples	Average Conc. (mg/kg)	Highest Conc. (mg/kg)
0 to 1	46	1,970	33,700
>1 to 3	18	2,510	14,900
>3 to 5	21	1198	8,440
>5	21	99	1,340

Note: RI SL = 450 mg/kg; CSL^v = 530 mg/kg

^v CSL – Cleanup Screening Level – Washington State Sediment Management Standards

Table 5d – Mercury Concentrations in Sediment w/ Depth

Depth Interval (ft)	No. of Samples	Average Conc. (mg/kg)	Highest Conc. (mg/kg)
0 to 1	46	7.9	94
>1 to 3	15	6.4	52
>3 to 5	19	3.2	31
>5	19	0.16	0.49

Note: RI SL = 0.41 mg/kg; CSL = 0.59 mg/kg

The data indicate that concentrations of PCBs, DRO+RRO, lead and mercury exceed SLs presented in the draft RI. Most of the sediment contamination occurred in sediment less than five feet deep. It should be noted, that while data available throughout the embayment were used to calculate and summarize average and highest concentrations, the depth of contamination is most representative around the former wharf where the highest concentrations were detected. Elsewhere in the embayment, for the most part, concentrations that exceed SLs, extend to shallower depths.

RESULTS OF TCLP TESTING

TCLP testing was completed to assess disposal options for sediment and soil slated to be removed from the site as part of cleanup. Twenty sediment samples and six soil samples were subjected to TCLP testing for RCRA metals including arsenic, barium, cadmium, chromium, lead, selenium, silver, and mercury. The results are summarized in Table 1 along with the threshold criteria to designate as a characteristic dangerous waste (DW). Extractable concentrations of arsenic, barium, cadmium, chromium, selenium, silver, and mercury were well below threshold concentrations. Only one sample exceeded the threshold criterion for lead [P8-20N (0.5'-1.5')]. This sample had a total lead concentration of 3,780 mg/kg and an extractable lead concentration of 6.7 mg/l which exceeds the threshold concentration of 5 mg/l. This soil sample also had a high PCB concentration (129,500 ug/kg) which will require special handling and disposal.

Total lead soil concentrations were plotted against extractable lead concentrations in Figure 10 to determine whether there is a total lead concentration above which soil would designate as DW. The plot shows this is not the case. As total lead concentrations increased, extractable lead concentrations do not show a corresponding increase.

The available data indicate that sediment and most upland soil would not designate as DW. Some post excavation TCLP testing is indicated for some upland soil to ensure excavated soil is disposed in a proper manner. Input from EPA (Dave Bartus) indicates that soil with an extractable TCLP lead concentration up to 7.5 mg/l could be disposed with materials containing PCB concentrations greater than 50 mg/kg without treatment (i.e., would meet the Land Disposal Restriction treatment standards). This finding needs to be confirmed with Ecology.

REFERENCES

Corps (Corps of Engineers, Seattle District), Letter to Ralph Palumbo (Yarmuth Wilsdon, PLLC – Sediment Sampling), Reference: NWS-2020-339; June 30, 2020.

DOF (Dalton, Olmsted & Fuglevand, Inc.), 2020a, Remedial Investigation Report, Industrial Container Services, WA, LLC [Former NW Cooperage Site], Seattle, Washington; Public Review Draft: February 2020.

DOF, 2020b, Feasibility Study Report, Industrial Container Services, WA, LLC [Former NW Cooperage Site], Seattle, Washington; Public Review Draft: March 8, 2020.

DOF, 2020c, Work Plan to Determine Extent of Hot-Spots and PCB Concentrations in Soil and Sediment Greater Than 50 ppm; ICS [Former] Northwest Cooperage Site, Seattle, Washington; August 2020.

DOF, 2021, Memorandum to Vicki Sutton (Ecology), Re: Extent of Precipitate Cap, Embayment, ICS/NWC RI/FS, June 30, 2021.

Attachments

Table 1 – Embayment Sediment and Upland Soil Analytical Data

Figure 1 – Site Vicinity Map

Figure 2a – Hot-Spot Characterization Focus Areas

Figure 2b – Site Layout and Topography

Figure 3a – Sample Location Map

Figure 3b – Surface Sediment (approx. <1.0') Sample Location Map

Figure 3c - Core Sediment (approx. >1.0') Sample Location Map

Figure 4a – PCB Concentrations in Soil and Sediment (0 to 3.0 Feet)

Figure 4b – PCB Concentrations in Sediment (approx. <3.0 Feet)

Figure 4c – PCB Concentrations in Soil and Sediment (3 to 5 Feet)

Figure 4d – PCB Concentrations in Sediment (approx. 3.0 to 5 Feet)

Figure 4e – PCB Concentrations in Soil and Sediment (5 to 10 Feet)

Figure 4f – PCB Concentrations in Soil and Sediment (10 to 15 Feet)

Figure 4g – PCB Concentrations in Soil and Sediment (15 to 20 Feet)

Figure 5a – DRO+RRO Concentrations in Soil and Sediment (0 to 3.0 Feet)

Figure 5b – DRO+RRO Concentrations in Sediment (approx. <3.0 Feet)

Figure 5c – DRO+RRO Concentrations in Soil and Sediment (3 to 5 Feet)

Figure 5d – DRO+RRO Concentrations in Sediment (approx. 3.0 to 5 Feet)

Figure 5e – DRO+RRO Concentrations in Soil and Sediment (5 to 10 Feet)

Figure 5f – DRO+RRO Concentrations in Soil and Sediment (10 to 15 Feet)

Figure 5g – DRO+RRO Concentrations in Soil and Sediment (15 to 20 Feet)

Figure 6a – Lead Concentrations in Soil and Sediment (0 to 3.0 Feet)

Figure 6b – Lead Concentrations in Sediment (approx. <3.0 Feet)

Figure 6c – Lead Concentrations in Soil and Sediment (3 to 5 Feet)

Figure 6d – Lead Concentrations in Sediment (approx. 3.0 to 5 Feet)

Figure 6e – Lead Concentrations in Soil and Sediment (5 to 10 Feet)

Figure 6f – Lead Concentrations in Soil and Sediment (10 to 15 Feet)

Figure 6g – Lead Concentrations in Soil and Sediment (15 to 20 Feet)

Figure 7a – Mercury Concentrations in Soil and Sediment (0 to 3.0 Feet)
Figure 7b – Mercury Concentrations in Sediment (approx. <3.0 Feet)
Figure 7c – Mercury Lead Concentrations in Soil and Sediment (3 to 5 Feet)
Figure 7d – Mercury Lead Concentrations in Sediment (approx. 3.0 to 5 Feet)
Figure 7e – Mercury Lead Concentrations in Soil and Sediment (5 to 10 Feet)
Figure 7f – Mercury Lead Concentrations in Soil and Sediment (10 to 15 Feet)
Figure 7g – Mercury Lead Concentrations in Soil and Sediment (15 to 20 Feet)
Figure 8 – PCB Section Trend Locations
Figure 9a – PCBs Along Section A-A'
Figure 9b – PCBs Along Section B-B'
Figure 9c – PCBs Along Section C-C'
Figure 9d – PCBs Along Section D-D'
Figure 9e – PCBs Along Section E-E'
Figure 9f – PCBs Along Section F-F'
Figure 9g – PCBs Along Section G-G'
Figure 9h – PCBs Along Section H-H'
Figure 9i – PCBs Along Section I-I'
Figure 9J – PCBs Along Section J-J'
Figure 9k – PCBs Along Section K-K'
Figure 9l – PCBs Along Section L-L'
Figure 10 – Lead TCLP Plot

Appendix A – Well, Probe and Core Logs
Appendix B – Data Validation Reports – DMD Inc.
Appendix C – Laboratory Reports (Oct. 2020 to Jan. 2021)
Appendix D – Photographs Embayment Sediment Sampling
Appendix E – Historic Aerial Photographs
Appendix F – MTCA-Stat Output
Appendix G – Refined Extent of Precipitate Cap

TABLE 1 - Embayment Sediment and Upland Soil Analytical Data

Location	Collection Date	Spl. Depth (feet)	North NAD83	East NAD83	Petroleum Hydrocarbons (mg/kg-dw)			Aroclor PCBs (ug/kg-dw)									Total Metals (mg/kg-dw)		
					DRO	RRO	DRO+RRO	1016	1221	1232	1242	1248	1254	1260	1262	1268	Total	Pb	Hg
Sediment Samples																			
DSS-01	Dec-12	0.32	200361	1269757	84	550	634	20 U	20 U	20 U	20 U	420	420	350	-----	-----	1190	70	0.17
DSS-02	Jul-12	0.32	200359	1269797	52	280	332	38 U	38 U	38 U	38 U	190	210	170	-----	-----	570	36	0.12
DSS-03	Jul-12	0.32	200373	1269829	120	440	560	97 U	97 U	97 U	97 U	450	530	560	-----	-----	1540	92	0.45
DSS-04	Jul-12	0.32	200323	1269823	1400	3000	4400	310 U	310 U	310 U	310 U	3800 J	10,000	14,000	-----	-----	27800	1250	2.42
DSS-05	Jul-12	0.32	200350	1269867	76	240	316	97 U	97 U	97 U	3500	97 U	1700	1200	-----	-----	6400	150	0.28
DSS-06	Jul-12	0.32	200304	1269886	570	1600	2170	250 U	250 U	250 U	250 U	2500 J	5800	7000	-----	-----	15300	633	7.7
DSS-07	Jul-12	0.32	200363	1269925	17	83	100	38 U	38 U	38 U	38 U	71	190 U	520	-----	-----	591	76	0.25
DSS-08	Jul-12	0.32	200336	1269926	200	620	820	63 U	63 U	63 U	63 U	950 U	2000	1400	-----	-----	3400	201	3.8
DSS-09	Jul-12	0.32	200296	1269935	6700	15,000	21700	5400 U	5400 U	5400 U	120,000	5400 U	44,000	30,000	-----	-----	194000	5920	14.3
DSS-10	Jul-12	0.32	200288	1269967	14	56	70	39 U	39 U	39 U	39 U	690	630	600	-----	-----	1920	59	0.21
DSS-11	Jul-12	0.32	200289	1269996	56	220	276	120 U	120 U	120 U	120 U	1500	1800	2000	-----	-----	5300	626	0.71
DSS-12	Jul-12	0.32	200311	1270016	12,000	42,000	54000	240 U	240 U	240 U	11,000	240 U	8900	2600	-----	-----	22500	3930	0.16
DSS-13	Jul-12	0.32	200318	1270038	43	90	133	39 U	39 U	39 U	39 U	280	230	200	-----	-----	710	42	0.12
DSS-14	Jul-12	0.32	200382	1270016	24	130	154	39 U	39 U	39 U	39 U	72	180	330	-----	-----	582	201	0.17
DSS-15	Jul-12	0.32	200363	1270018	68	280	348	96 U	96 U	96 U	96 U	680	740	680	-----	-----	2100	55.5	0.21
DSS-16	Jul-12	0.32	200380	1270065	8.5	35	43.5	4.0 U	4.0 U	4.0 U	4.0 U	8.0	12	22	-----	-----	42	18	0.03
DSS-17	Jul-12	0.32	200331	1270081	24	100	124	39 U	39 U	39 U	39 U	190	270	280	-----	-----	740	44	0.15
DSS-18	Jul-12	0.32	200370	1270116	18	83	101	40 U	40 U	40 U	40 U	110	190	200	-----	-----	500	56	0.20
DSS-19	Jul-12	0.32	200363	1270177	240	710	950	410 U	410 U	410 U	410 U	4400	4700	3400	-----	-----	12500	343	1.73
DSS-20	Jul-12	0.32	200370	1270209	28	88	116	39 U	39 U	39 U	39 U	240	320	230	-----	-----	790	42	0.18
DSS-21	Jul-12	0.32	200361	1270227	49	150	199	40 U	40 U	40 U	40 U	450	580	490	-----	-----	1520	56	0.54
DSS-22	Jul-12	0.32	200367	1270258	58	170	228	38 U	38 U	38 U	38 U	540	760	400	-----	-----	1700	22	0.17
DSS-23	Jul-12	0.32	200324	1270140	34	95	129	20 U	20 U	20 U	20 U	180	200	180	-----	-----	560	30	0.08
DSS-24	Jul-12	0.32	200331	1270215	52	180	232	98 U	98 U	98 U	98 U	590	560	560	-----	-----	1710	60	0.22
DSS-25	Jul-12	0.32	200334	1270265	77	230	307	96 U	96 U	96 U	96 U	500	530	420	-----	-----	1450	50	0.34
DSS-26	Sep-14	0.32	200272	1270156	54	180	234	39 U	39 U	39 U	39 U	1600	1800	770	-----	-----	4170	1690	0.83
DSS-27	Jul-12	0.32	200274	1270208	150	520	670	280 U	280 U	280 U	280 U	980 U	3100	2700	-----	-----	5800	683	0.92
DSS-28	Jul-12	0.32	200302	1270233	170	570	740	38 U	38 U	38 U	38 U	1100	1200	580	-----	-----	2880	48	0.34
DSS-29	Jul-12	0.32	200277	1270273	11	120	131	3.8 U	3.8 U	3.8 U	3.8 U	11 U	30	29	-----	-----	59	74	0.05
DSS-30	Jul-12	0.32	200288	1270328	6.3 U	14	14	3.9 U	3.9 U	3.9 U	3.9 U	39 U	130	44	-----	-----	174	16	0.06
SED1	Sep-14	0.32	200331	1269892	-----	-----	-----	82,000 U	82,000 U	82,000 U	82,000 U	630,000	770,000	200,000	-----	-----	1600000	6330	61
SED2	Sep-14	0.32	200319	1269941	-----	-----	-----	470 U	470 U	470 U	470 U	12000	18000	5500	-----	-----	35500	4080	9.0
SED4	Sep-14	0.32	200332	1270162	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	30	0.06
LDWSS84	Sep-14	0.32	200324	1269997	-----	-----	-----	180 U	180 U	180 U	180 U	2000	2600	1800	-----	-----	6400	226	0.78
B5a2	Sep-14	0.32	200299	1270183	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	136	0.18
HS-1	Oct-20	0.5-1.0	200342	1269875	6.1 U	12.1 U	12.1 U	20 U	20 U	20 U	20 U	15.5 J	10.6 J	20 U	20 U	20 U	26.1	4.2	0.01 J
HS-4**	Oct-20	0-0.8	200332	1269875	-----	-----	-----	498 U	498 U	498 U	498 U	5360	8420	4990	498 U	498 U	18770	-----	-----
HS-5	Oct-20	0-1	200331	1269885	1130	4090	5220	497 U	497 U	497 U	497 U	6560	6910	4540	497 U	497 U	18010	133	1.5
HS-6*	Oct-20	2.0-3.0	200332	1269895	-----	-----	-----	20 U	20 U	20 U	20 U	20.9	11.5 J	9.5 J	20 U	20 U	41.9	-----	-----
HS-7	Oct-20	3.0-4.0	200332	1269905	4600	8410	13010	200 U	200 U	200 U	200 U	29500	20500	11800	200 U	200 U	61800	1280	31
HS-8**	Oct-20	2.5-3.5	200328	1269915	-----	-----	-----	497 U	497 U	497 U	497 U	17400	14500	5420	497 U	497 U	37320	-----	-----

TABLE 1 - Embayment Sediment and Upland Soil Analytical Data

Location	Collection Date	Spl. Depth (feet)	North NAD83	East NAD83	Petroleum Hydrocarbons (mg/kg-dw)			Aroclor PCBs (ug/kg-dw)										Total Metals (mg/kg-dw)	
					DRO	RRO	DRO+RRO	1016	1221	1232	1242	1248	1254	1260	1262	1268	Total	Pb	Hg
HS-9	Oct-20	0-1	200323	1269875	28100	23600	51700	1630 U	1630 U	1630 U	1630 U	22400	26700	37900	1630 U	1630 U	87000	33700	14
HS-12	Oct-20	0-1	200322	1269915	2490	6520	9010	5530 U	5530 U	5530 U	5530 U	71100	56000	30000	5530 U	5530 U	157100	1180	13
HS-13**	Oct-20	0-1	200321	1269925	-----	-----	-----	497 U	497 U	497 U	497 U	9430	14900	6290	497 U	497 U	30620	-----	-----
HS-14**	Oct-20	0-1	200322	1269955	-----	-----	-----	993 U	993 U	993 U	993 U	37600	32100	14000	993 U	993 U	83700	-----	-----
HS-15	Oct-20	0-1	200312	1269885	26300	56700	83000	65300 U	65300 U	65300 U	65300 U	570000	440000	153000	65300 U	65300 U	1163000	5590	52
HS-17**	Oct-20	0-1	200312	1269905	-----	-----	-----	49700 U	49700 U	49700 U	49700 U	296000	197000	78900	49700 U	49700 U	571900	-----	-----
HS-21	Oct-20	0-1	200312	1269945	20000	46900	66900	1740 U	1740 U	1740 U	1740 U	19200	27900	13100	1740 U	1740 U	60200	9030	94
HS-22**	Oct-20	0-1	200312	1269955	-----	-----	-----	49800 U	49800 U	49800 U	49800 U	241000	297000	296000	49800 U	49800 U	834000	-----	-----
HS-23**	Oct-20	0-1	200312	1269965	-----	-----	-----	497 U	497 U	497 U	497 U	12000	12300	8240	497 U	497 U	32540	-----	-----
HS-29	Oct-20	0-1	200302	1269955	8390	21600	29990	788 U	788 U	788 U	788 U	23300	21100	9680	788 U	788 U	54080	3950	25
HS-30**	Oct-20	0-1	200302	1269965	-----	-----	-----	496 U	496 U	496 U	496 U	4900	5190	8170	496 U	496 U	18260	-----	-----
HS-34	Oct-20	0-1	200292	1269925	4330	9760	14090	1530 U	1530 U	1530 U	1530 U	21800	15300	4720	1530 U	1530 U	41820	1680	3.9
HS-36**	Oct-20	0-1	200291	1269955	-----	-----	-----	993 U	993 U	993 U	993 U	34600	16200	10400	993 U	993 U	61200	-----	-----
HS-37*	Oct-20	0-1	200283	1269925	-----	-----	-----	2520 U	2520 U	2520 U	2520 U	755000	306000	43600	2520 U	2520 U	1104600	-----	-----
HS-38	Oct-20	0-1	200283	1269935	6490	23000	29490	54100 U	54100 U	54100 U	54100 U	631000	572000	565000	54100 U	54100 U	1768000	7890	52
HS-39*	Oct-20	0-1	200282	1269945	-----	-----	-----	1060 U	1060 U	1060 U	1060 U	27600	19000	10000 J	1060 U	1060 U	56600	-----	-----
HS-40**	Oct-20	0-1	200282	1269955	-----	-----	-----	496 U	496 U	496 U	496 U	6670	11900	5590	496 U	496 U	24160	-----	-----
HSA1*	Oct-20	1-2	200322	1269895	-----	-----	-----	1710 U	1710 U	1710 U	1710 U	19000	26100	9800	1710 U	1710 U	54900	-----	-----
HSA1*	Oct-20	2-3	200322	1269895	-----	-----	-----	199 U	199 U	199 U	199 U	2380	2450	955	199 U	199 U	5785	880	-----
HSA1	Oct-20	3-4	200322	1269895	185	267	452	20 U	20 U	20 U	20 U	277	232	123	20 U	20 U	632	36	0.26
HSA1*	Oct-20	4.5-5	200322	1269895	-----	-----	-----	199 U	199 U	199 U	199 U	5750	5160	1830	199 U	199 U	12740	-----	-----
HSA2**	Oct-20	2-3	200314	1269920	-----	-----	-----	1990 U	1990 U	1990 U	1990 U	39000	57400	33200	1990 U	1990 U	129600	12400	-----
HSA2	Oct-20	3-4	200314	1269920	23700	21100	44800	806 U	806 U	806 U	806 U	15500	24400	7170	806 U	806 U	47070	8440	1.2
HSA2**	Oct-20	4-5	200314	1269920	-----	-----	-----	99.5 U	99.5 U	99.5 U	99.5 U	2100	2610	1530	99.5 U	99.5 U	6240	4050	-----
HSA3**	Oct-20	2-3	200299	1269949	-----	-----	-----	497 U	497 U	497 U	497 U	14800	19400	9210	497 U	497 U	43410	7290	-----
HSA3	Oct-20	3-3.5	200299	1269949	866	1870	2736	199 U	199 U	199 U	199 U	1430	2040	742	199 U	199 U	4212	609	2.0
HSA3*	Oct-20	5-6	200299	1269949	-----	-----	-----	20 U	20 U	20 U	20 U	24.2	30.8 J	11.7 J	20 U	20 U	66.7	16	-----
HSA4	Oct-20	2-3	200290	1269934	43300	99100	142400	3860 U	3860 U	3860 U	3860 U	45500	55200	70700	3860 U	3860 U	171400	14900	52
HSA4	Oct-20	3-4	200290	1269934	25700	20500	46200	200 U	200 U	200 U	200 U	7410 J	5120	3000	200 U	200 U	15530	7200	2.7
HSA4**	Oct-20	4-5	200290	1269934	-----	-----	-----	1990 U	1990 U	1990 U	1990 U	20300	8850 J	4050	1990 U	1990 U	33200	1110	-----
HSA4**	Oct-20	5-6	200290	1269934	-----	-----	-----	99.6 U	99.6 U	99.6 U	99.6 U	1560	859	495	99.6 U	99.6 U	2914	213	-----
HSA4*	Oct-20	6-7	200290	1269934	-----	-----	-----	197 U	197 U	197 U	197 U	1170	614	219	197 U	197 U	2003	-----	-----
Core A	Nov-12	1.3	200360	1269800	180	450	630	75 U	75 U	75 U	75 U	810	870	690	-----	-----	2370	87	0.24
Core A	Nov-12	3.9	200360	1269800	32	52	84	3.8 U	3.8 U	3.8 U	3.8 U	42	31	26	-----	-----	99	10	0.17
Core A	Nov-12	5.1	200360	1269800	29	43	72	3.8 U	3.8 U	3.8 U	3.8 U	12	7.8	7.3	-----	-----	27.1	11	0.12
Core A	Nov-12	6.3	200360	1269800	29	58	87	3.8 U	3.8 U	3.8 U	3.8 U	4.8 U	3.8 U	3.8 U	-----	-----	3.8 U	12	0.15
Core A	Nov-12	7.2	200360	1269800	44	77	121	3.8 U	3.8 U	3.8 U	3.8 U	6.3 U	3.8 U	3.8 U	-----	-----	3.8 U	10	0.14
Core B	Nov-12	1.1	200357	1269857	29	56	85	37 U	37 U	37 U	37 U	170	140	120	-----	-----	430	14.9	0.04
Core B	Nov-12	3.3	200357	1269857	6700	7600	14300	400 U	400 U	400 U	400 U	9600	11,000	8600	-----	-----	29200	796	13.1
Core B	Nov-12	4.4	200357	1269857	4200	10000	14200	1500 U	1500 U	1500 U	1500 U	23,000	12,000	9100	-----	-----	44100	218	1.8 J
Core B	Nov-12	5.5	200357	1269857	39	75	114	3.9 U	3.9 U	3.9 U	50	3.9 U	24	23	-----	-----	97	12.4	0.13
Core B	Nov-12	6.6	200357	1269857	47	100	147	4.0 U	4.0 U	4.0 U	4.0 U	5.6 U	4.0 U	4.0 U	-----	-----	4.0 U	13.3	0.19 J

TABLE 1 - Embayment Sediment and Upland Soil Analytical Data

Location	Collection Date	Spl. Depth (feet)	North NAD83	East NAD83	Petroleum Hydrocarbons (mg/kg-dw)			Aroclor PCBs (ug/kg-dw)										Total Metals (mg/kg-dw)	
					DRO	RRO	DRO+RRO	1016	1221	1232	1242	1248	1254	1260	1262	1268	Total	Pb	Hg
Core C	Nov-12	2.3	200342	1269851	34	57	91	3.6 U	3.6 U	3.6 U	3.6 U	18	21	16	----	----	55	13.1	0.04
Core C	Nov-12	3.3	200342	1269851	27	39	66	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	----	----	3.8 U	7.9	0.12
Core C	Nov-12	4.4	200342	1269851	20	41	61	3.6 U	3.6 U	3.6 U	3.6 U	3.6 U	3.6 U	3.6 U	----	----	3.6 U	8.0	0.03
Core D	Nov-12	2.1	200325	1269895	12,000	9900	21900	200 U	200 U	200 U	200 U	6200	7700	3100	----	----	17000	4430	39
Core D	Nov-12	3.8	200325	1269895	39	64	103	3.9 U	3.9 U	3.9 U	3.9 U	27	30	10	----	----	67	28.3	2.05
Core D	Nov-12	5.3	200325	1269895	27	44	71	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	----	----	3.9 U	10.6	0.14
Core D	Nov-12	6.7	200325	1269895	43	76	119	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	----	----	3.9 U	11.6	0.15 J
Core F	Nov-12	1.7	200322	1269928	12000	2100	14100	3.8 U	3.8 U	3.8 U	3.8 U	130 U	160	170	----	----	330	4380	0.29 J
Core F	Nov-12	4.5	200322	1269928	43	72	115	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	----	----	4.0 U	11.5	0.16 J
Core F	Nov-12	5.8	200322	1269928	40	49	89	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	----	----	4.0 U	17.4	0.17
Core F	Nov-12	8.3	200322	1269928	17	26	43	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	----	----	3.9 U	11.5	0.09
Core F	Nov-12	9.7	200322	1269928	6.5 U	13 U	13 U	3.7 U	3.7 U	3.7 U	3.7 U	3.7 U	3.7 U	3.7 U	----	----	3.7 U	2.1	0.02
Core G	Nov-12	3	200350	1269965	85	140	225	39 U	39 U	39 U	39 U	610	670	270	----	----	1550	22.5	0.20
Core G	Nov-12	5.1	200350	1269965	6700	9600	16300	78 U	78 U	78 U	78 U	3600	3600	2800	----	----	10000	1340	0.49
Core G	Nov-12	6.8	200350	1269965	73	120	193	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	----	----	4.0 U	33.9	0.20
Core H	Nov-12	1.7	200317	1269980	300	580	880	170 U	170 U	170 U	170 U	7400	4900	5800	----	----	18100	168	0.39
Core H	Nov-12	3.3	200317	1269980	1400	2000	3400	580 U	580 U	580 U	580 U	13,000	16,000	9100	----	----	38100	936	4.85
Core H	Nov-12	4.7	200317	1269980	28	50	78	18 U	18 U	18 U	260	18 U	93 U	18 U	----	----	260	6.5	0.04
Core I	Nov-12	2.6	200354	1270036	290	560	850	140 U	140 U	140 U	140 U	5100	6000	1900	----	----	13000	123	1.8
Core I	Nov-12	4.2	200354	1270036	76	130	206	3.9 U	3.9 U	3.9 U	3.9 U	170	160	65	----	----	395	25	0.30
Core I	Nov-12	5.9	200354	1270036	61	120	181	3.9 U	3.9 U	3.9 U	3.9 U	70	46	27	----	----	143	39	0.24 J
Core I	Nov-12	7.8	200354	1270036	250	460	710	3.8 U	3.8 U	3.8 U	36	3.8 U	19 U	5.6	----	----	41.6	19	0.14
Core J	Nov-12	4.9	200348	1270100	1600	1400	3000	3.8 U	3.8 U	3.8 U	3.8 U	47	110	180	----	----	337	224	0.29
Core J	Nov-12	6.8	200348	1270100	40	72	112	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	----	----	4.0 U	11	0.08 J
Core J	Nov-12	8.5	200348	1270100	33	62	95	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	----	----	3.8 U	14	0.11
Core J	Nov-12	10.4	200348	1270100	41	58	99	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	----	----	3.9 U	22	0.11
Core K	Nov-12	2.2	200357	1270196	560	1200	1760	170 U	170 U	170 U	170 U	5000	5100	2900	----	----	13000	310	2.0
Core K	Nov-12	3.8	200357	1270196	70	180	250	38 U	38 U	38 U	38 U	760	590	260	----	----	1610	79	0.38 J
Core K	Nov-12	5.5	200357	1270196	620	440	1060	3.8 U	3.8 U	3.8 U	3.8 U	22	76 U	81	----	----	103	241	0.21
Core K	Nov-12	7	200357	1270196	28	55	83	3.7 U	3.7 U	3.7 U	3.7 U	3.7 U	3.7 U	3.7 U	----	----	3.7 U	18	0.12
Core L	Nov-12	1.9	200303	1270196	1200	1400	2600	38 U	38 U	38 U	38 U	910	880	520	----	----	2310	87	0.34
Core L	Nov-12	3.5	200303	1270196	77	120	197	4.0 U	4.0 U	4.0 U	4.0 U	8.0	9.2	6.0	----	----	23.2	62	0.63
Core L	Nov-12	5	200303	1270196	24	42	66	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	----	----	3.9 U	12	0.31
Core M	Nov-12	0.6	200337	1270246	55	160	215	37 U	37 U	37 U	37 U	370	360	380	----	----	1110	58	0.21
Core M	Nov-12	1.6	200337	1270246	16	29	45	3.8 U	3.8 U	3.8 U	3.8 U	98	120	94	----	----	312	24	0.04
Core M	Nov-12	2.7	200337	1270246	6.1 U	12 U	12 U	3.7 U	3.7 U	3.7 U	3.7 U	3.7 U	3.7 U	3.7 U	----	----	3.7 U	1.9	0.3 U
LDW-SC40	Feb-06	0-1.3	200339	1270298	----	----	----	20 U	20 U	20 U	20 U	61	100	40 U	----	----	161	18	0.05
LDW-SC40	Feb-06	1.3-2	200339	1270298	----	----	----	4 U	4 U	4 U	4 U	4 U	4 U	4 U	----	----	4.0 U	44	0.05 U
LDW-SC40	Feb-06	2-4	200339	1270298	----	----	----	4 U	4 U	4 U	4 U	4 U	4 U	4 U	----	----	4.0 U	2.0 U	0.05 U

TABLE 1 - Embayment Sediment and Upland Soil Analytical Data

Location	Collection Date	Spl. Depth (feet)	North NAD83	East NAD83	Petroleum Hydrocarbons (mg/kg-dw)			Aroclor PCBs (ug/kg-dw)									Total Metals (mg/kg-dw)		
					DRO	RRO	DRO+RRO	1016	1221	1232	1242	1248	1254	1260	1262	1268	Total	Pb	Hg
Upland Soil Samples																			
LP-1	Oct-12	3 - 5'	199889	1270243	23	70	93	3.8 U	3.8 U	3.8 U	3.8 U	17	26	49	----	----	92	403	0.14
LP-1	Oct-12	6.5 - 8'	199889	1270243	820	1700	2520	140 U	140 U	140 U	140 U	4100	4600	1900	----	----	10600	448	3.1
LP-1	Oct-12	10.5 - 12'	199889	1270243	8.2	18	26	3.9 U	3.9 U	3.9 U	3.9 U	10	12	12	----	----	34	2.5	0.3 U
LP-2	Oct-12	3 - 5'	199970	1270215	7.2	31	38	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	16	33	----	----	49	106	0.18
LP-2	Oct-12	5.5 - 7.5'	199970	1270215	6.8 U	14 U	14 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	----	----	3.8 U	4.3	0.06
LP-2	Oct-12	8 - 10'	199970	1270215	6.9 U	14 U	14 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	----	----	3.8 U	3.4	0.03
LP-3	Oct-12	3 - 5'	200044	1270155	32	100	132	130 U	130 U	130 U	130 U	1900 U	3300	520 U	----	----	3300	110	0.37
LP-3	Oct-12	6 - 8'	200044	1270155	6200	11,000	17200	980 U	980 U	980 U	980 U	53000	36000	24000	----	----	113000	3600	8.7
LP-3	Oct-12	10 - 12'	200044	1270155	120	170	290	37 U	37 U	37 U	37 U	1000	760	310	----	----	2070	4.2	0.13
LP-3	Oct-12	15 - 16'	200044	1270155	92	170	262	39 U	39 U	39 U	39 U	460	380	210	----	----	1050	23	0.08 J
LP3-10N	Jan-21	2-3	200052	1270150	17	81	98	19 U	19 U	19 U	19 U	504	474	236	19 U	19 U	1214	153	0.97
LP3-10N	Jan-21	5-7	200052	1270150	11800	21700	33500	2490 U	2490 U	2490 U	2490 U	51500	28200	6660	2490 U	2490 U	86360	669	1.5
LP3-10N	Jan-21	10-11	200052	1270150	379	663	1042	20 U	20 U	20 U	20 U	778	443	202	20 U	20 U	1423	6.3	0.11
LP3-20N	Feb-21	1.5-2.5	200061	1270145	135	599	734	100 U	100 U	100 U	100 U	1260	873	345	100 U	100 U	2478	586	0.38
LP3-20N	Feb-21	5.5-6.5	200061	1270145	10900	19700	30600	5500 U	5500 U	5500 U	5500 U	34800	21400	4700 J	5500 U	5500 U	60900	2370	4.9
LP3-20N	Feb-21	10.5-11.5	200061	1270145	215	455	670	99 U	99 U	99 U	99 U	1110	603	348	99 U	99 U	2061	64	0.10
LP3-10S	Jan-21	5-5.5	200035	1270161	438	1370	1808	992 U	992 U	992 U	992 U	10000	7260	5950	992 U	992 U	23210	53	0.16
LP3-10S	Jan-21	5.5-6.5	200035	1270161	12800	24700	37500	1980 U	1980 U	1980 U	1980 U	61000	24100	11700	1980 U	1980 U	96800	5070	4.1
LP3-10S	Jan-21	10-11	200035	1270161	105	113	218	20 U	20 U	20 U	20 U	395	149	87	20 U	20 U	631	4	0.06
LP3-20S	Feb-21	5-6	200027	1270166	92.8	265	358	100 U	100 U	100 U	100 U	1940	1590	930	100 U	100 U	4460	46	0.04
LP3-20S	Feb-21	6.2-7.2	200027	1270166	11000	24800	35800	6650 U	6650 U	6650 U	6650 U	90600	55800	24300	6650 U	6650 U	170700	2890	5.8
LP3-20S	Feb-21	10-11	200027	1270166	238	237	475	20 U	20 U	20 U	20 U	577	284	135	20 U	20 U	996	4.9	0.03
LP3-10W	Jan-21	2-3	200038	1270147	85	335	420	99 U	99 U	99 U	99 U	809	698	193	99 U	99 U	1700	150	0.31
LP3-10W	Jan-21	5-7	200038	1270147	10500	21300	31800	4920 U	4920 U	4920 U	4920 U	101000	78600	29700	4920 U	4920 U	209300	3100	6.0
LP3-10W	Jan-21	10-12	200038	1270147	3300	7630	10930	492 U	492 U	492 U	492 U	6470	4430	4680	492 U	492 U	15580	80	0.38
LP3-10W	Jan-21	13-14	200038	1270147	416	459	875	20 U	20 U	20 U	20 U	39	30	65	20 U	20 U	134	12	0.14
LP3-20W	Feb-21	1.5-2.5	200032	1270139	2460	5530	7990	2770 U	2770 U	2770 U	2770 U	6460	4480 J	719 J	2770 U	2770 U	11659	113	0.02
LP3-20W	Feb-21	5.5-6.5	200032	1270139	3880	8880	12760	2490 U	2490 U	2490 U	2490 U	27800	15000	5380	2490 U	2490 U	48180	1580	12
LP3-20W	Feb-21	10.5-11.5	200032	1270139	249	299	548	99 U	99 U	99 U	99 U	1970	1000	427	99 U	99 U	3397	7	0.07
LP3-10E	Feb-21	1-2	200052	1270164	45.8	238	284	100 U	100 U	100 U	100 U	1060	1230	495	100 U	100 U	2785	134	0.23
LP3-10E	Feb-21	5-6	200052	1270164	37.8	188	226	100 U	100 U	100 U	100 U	1280	1260	555	100 U	100 U	3095	88	0.04
LP3-10E	Feb-21	10-11	200052	1270164	18.7	56.7	75	20 U	20 U	20 U	20 U	46.6	33.1	22.8	20 U	20 U	103	4	0.04
LP-4	Oct-12	8 - 10'	200125	1270110	620	1300	1920	200 U	200 U	200 U	200 U	7400	4000	3900	----	----	15300	748	0.74
LP-4	Oct-12	10 - 12'	200125	1270110	760	440	1200	55 U	55 U	55 U	55 U	810	780	560	----	----	2150	118	2.1
LP-4	Oct-12	14 - 15'	200125	1270110	10	18	28	3.8 U	3.8 U	3.8 U	3.8 U	31	21	12	----	----	64	1.6	0.03 U
LP-5	Jan-21	5.5-6.5	200152	1270104	189	509	698	199 U	199 U	199 U	199 U	4280	2150	1800	199 U	199 U	8230	10	0.17
LP-5	Jan-21	7-8	200152	1270104	62.4	112	174	100 U	100 U	100 U	100 U	839	420	217	100 U	100 U	1476	6	0.07
LP-5	Jan-21	10-11	200152	1270104	27.6	51.1	79	20 U	20 U	20 U	20 U	126	68.5	47.8	20 U	20 U	242	2.6 J	0.02 J
LP-6	Jan-21	6-7	200149	1270093	565	1300	1865	200 U	200 U	200 U	200 U	1930	916	799	200 U	200 U	3645	210	0.22
LP-6	Jan-21	10-11	200149	1270093	9940	23500	33440	1790 U	1790 U	1790 U	1790 U	22500	18500	11000	1790 U	1790 U	52000	892	28
LP-6	Jan-21	11.5-12.5	200149	1270093	128	228	356	100 U	100 U	100 U	100 U	1270	793	720	100 U	100 U	2783	6.5	0.05

TABLE 1 - Embayment Sediment and Upland Soil Analytical Data

Location	Collection Date	Spl. Depth (feet)	North NAD83	East NAD83	Petroleum Hydrocarbons (mg/kg-dw)			Aroclor PCBs (ug/kg-dw)										Total Metals (mg/kg-dw)	
					DRO	RRO	DRO+RRO	1016	1221	1232	1242	1248	1254	1260	1262	1268	Total	Pb	Hg
LP-8	Jan-21	10-11	200114	1270093	333	531	864	100 U	100 U	100 U	100 U	4310	2210	1150	100 U	100 U	7670	31	0.15
LP-8	Jan-21	12-13	200114	1270093	71.9	73	145	20 U	20 U	20 U	20 U	361	169	118	20 U	20 U	648	2.3	0.03
LP-9	Jan-21	5-6	200112	1270131	7 U	16	16	20 U	20 U	20 U	20 U	68.5	67.1	32.8	20 U	20 U	168	2.9	0.03 J
LP-9	Jan-21	8-9	200112	1270131	7.05	20	27	20 U	20 U	20 U	20 U	20 U	3 J	3 J	20 U	20 U	6	3.1	0.03 J
LP-9	Jan-21	11-12	200112	1270131	8.27	24	32	20 U	20 U	20 U	20 U	58.8	30.6	20.5	20 U	20 U	110	2.3	0.01 J
LP-10	Jan-21	5-6	200103	1270120	559	1180	1739	199 U	199 U	199 U	199 U	4090	2820 J	1600	199 U	199 U	8510	119	0.09
LP-10	Jan-21	7-8	200103	1270120	3680	11200	14880	1390 U	1390 U	1390 U	1390 U	10500	7580	4320	1390 U	1390 U	22400	311	0.12
LP-10	Jan-21	10-11	200103	1270120	90.1	122	212.1	100 U	100 U	100 U	100 U	759	455	269	100 U	100 U	1483	7.6	0.17
LP-11	Jan-21	3-3.8	200095	1270105	175	443	618	99 U	99 U	99 U	99 U	226	133	52	99 U	99 U	411	18.5	0.07
LP-11	Jan-21	5.5-6.5	200095	1270105	704	1200	1904	993 U	993 U	993 U	993 U	11800	4410	2900	993 U	993 U	19110	144	0.15
LP-11	Jan-21	10.5-11.5	200095	1270105	751	1260	2011	499 U	499 U	499 U	499 U	10600	8530	13000	499 U	499 U	32130	381	0.38
LP-12	Jan-21	5-6	200085	1270130	5040	10800	15840	1190 U	1190 U	1190 U	1190 U	24600	18300	11800	1190 U	1190 U	54700	179	0.19
LP-12	Jan-21	7-8	200085	1270130	128	240	368	100 U	100 U	100 U	100 U	967	569	490	100 U	100 U	2026	7	0.08
LP-12	Jan-21	10-11	200085	1270130	82.3	123	205	20 U	20 U	20 U	20 U	202	143	116	20 U	20 U	461	3	0.05
LP-13	Jan-21	5-6	200073	1270101	346	708	1054	199 U	199 U	199 U	199 U	2360	1480	1010	199 U	199 U	4850	40	0.14
LP-13	Jan-21	10-11	200073	1270101	9000	20100	29100	197 U	197 U	197 U	197 U	2780	3290	2900	197 U	197 U	8970	69	0.85
LP-13	Jan-21	12-13	200073	1270101	105	182	287	20 U	20 U	20 U	20 U	217	130	109	20 U	20 U	456	2.0 J	0.02 J
LP-14	Jan-21	5-6	200053	1270120	1770	4450	6220	499 U	499 U	499 U	499 U	5900	2360	1070	499 U	499 U	9330	42	0.41
LP-14	Jan-21	6.5-7.5	200053	1270120	103	240	343	99 U	99 U	99 U	99 U	466	326	264	99 U	99 U	1056	4	0.15
LP-14	Jan-21	10-11	200053	1270120	186	237	423	99 U	99 U	99 U	99 U	1080	468	414	99 U	99 U	1962	6	0.06
LP-15	Jan-21	5-6	199979	1270187	57.2	170	227	20 U	20 U	20 U	20 U	15.1	14 J	17 J	20 U	20 U	46	22	0.05
LP-15	Jan-21	7-8	199979	1270187	1310	3060	4370	99 U	99 U	99 U	99 U	303 J	430	433	99 U	99 U	1166	48	0.31
LP-15	Jan-21	13-14	199979	1270187	33	112	145	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	5	0.06
LP-16	Jan-21	5.5-6.5	199965	1270174	103	290	393	20 U	20 U	20 U	20 U	20 U	262	463	20 U	20 U	725	60	0.12
LP-16	Jan-21	7-8	199965	1270174	7.0 U	20.4	20	20 U	20 U	20 U	20 U	20 U	18 J	14 J	20 U	20 U	32	13	0.28
LP-16	Jan-21	10-11	199965	1270174	18.3	101	119	20 U	20 U	20 U	20 U	20 U	20 U	4 J	20 U	20 U	4	1.9 J	0.04
LP-17	Jan-21	5.5-6.5	200211	1269878	44	205	249	20 U	20 U	20 U	20 U	46	58	49	20 U	20 U	153	69	0.05
LP-17	Jan-21	10-11	200211	1269878	1870	1430	3300	19 U	19 U	19 U	19 U	121	97	63	19 U	19 U	281	238	0.89
LP-17	Jan-21	13.5-14.5	200211	1269878	10	77	87	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	0.99 J	0.03 U
LP-18	Jan-21	5-6	200271	1269920	29	228	257	20 U	20 U	20 U	20 U	19 J	30	36	20 U	20 U	85	370	0.13
LP-18	Jan-21	7-8	200271	1269920	2040	6290	8330	99 U	99 U	99 U	99 U	1500	1270	1310	99 U	99 U	4080	447	0.35
LP-18	Jan-21	10-11	200271	1269920	14	81	95	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	56	0.03 J
P-1	Jul-08	2.5-3	200270	1269840	620	690	1310	9200 U	9200 U	9200 U	14000	9200 U	28000	76000	-----	-----	118000	50	-----
P-2	Jul-08	5-6.5	200250	1269935	4500	8700	13200	1200 U	1200 U	1200 U	1200 U	2700	5500	12000	-----	-----	20200	3570	-----
P-2	Jul-08	10-10.5	200250	1269935	47	74	121	32 U	32 U	32 U	64	32 U	38	32 U	-----	-----	102	13	-----
P-2	Jul-08	15-15.5	200250	1269935	23	34	57	32 U	32 U	32 U	49	32 U	32 U	32 U	-----	-----	49	3	-----
P-3	Jul-08	5-5.5	200258	1269958	6800	18000	24800	3500 U	3500 U	3500 U	3500 U	13000	6200	8900	-----	-----	28100	7	-----
P-3	Jul-08	10-10.5	200258	1269958	120	160	280	350 U	350 U	350 U	350 U	1200	500	720	-----	-----	2420	3	-----
P-3	Jul-08	15-15.5	200258	1269958	67	70	137	160 U	160 U	160 U	160 U	360	250	280	-----	-----	890	3 U	-----
P-4	Jul-08	5-5.5	200191	1269974	190	230	420	32 U	32 U	32 U	32 U	290 U	97 U	65 U	-----	-----	97 U	9	-----
P-4	Jul-08	10-10.5	200191	1269974	7.2 U	16	16	32 U	32 U	32 U	32 U	32 U	32 U	32 U	-----	-----	32 U	3	-----
P-4	Jul-08	15-15.5	200191	1269974	6.7 U	13 U	13 U	32 U	32 U	32 U	32 U	32 U	32 U	32 U	-----	-----	32 U	3	-----

TABLE 1 - Embayment Sediment and Upland Soil Analytical Data

Location	Collection Date	Spl. Depth (feet)	North NAD83	East NAD83	Petroleum Hydrocarbons (mg/kg-dw)			Aroclor PCBs (ug/kg-dw)									Total Metals (mg/kg-dw)		
					DRO	RRO	DRO+RRO	1016	1221	1232	1242	1248	1254	1260	1262	1268	Total	Pb	Hg
P-5	Jul-08	6-6.5	200228	1269976	2300	5600	7900	1200 U	1200 U	1200 U	11000	1200 U	1700	1200 U	-----	-----	12700	8	-----
P-5	Jul-08	10-10.5	200228	1269976	25	30	55	32 U	32 U	32 U	32 U	32 U	32 U	32 U	-----	-----	32 U	4	-----
P-5	Jul-08	15-15.5	200228	1269976	30	31	61	31 U	31 U	31 U	31 U	31 U	31 U	31 U	-----	-----	31 U	3 U	-----
P-6	Jul-08	5-5.5	200246	1269991	200	640	840	31 U	31 U	31 U	31 U	76 U	130	62	-----	-----	192	219	-----
P-6	Jul-08	10-10.5	200246	1269991	780	1200	1980	290 U	290 U	290 U	290 U	1700	1200	520	-----	-----	3420	150	-----
P-6	Jul-08	15-15.5	200246	1269991	18	66	84	32 U	32 U	32 U	32 U	32 U	32 U	32 U	-----	-----	32 U	3	-----
P-7	Jul-08	5-5.5	200177	1270037	130	460	590	32 U	32 U	32 U	32 U	32 U	87	54	-----	-----	141	178	-----
P-7	Jul-08	10-10.5	200177	1270037	9.2	30	39.2	32 U	32 U	32 U	32 U	32 U	32 U	32 U	-----	-----	32 U	4	-----
P-7	Jul-08	15-15.5	200177	1270037	6 U	15	15	32 U	32 U	32 U	32 U	32 U	32 U	32 U	-----	-----	32 U	3	-----
P-8	Jul-08	0.5-1	200208	1270040	11000	24000	35000	9000 U	9000 U	9000 U	48000	9000 U	36000	35000	-----	-----	119000	687	-----
P-8	Jul-08	5-5.5	200208	1270040	100	230	330	33 U	33 U	33 U	33 U	33 U	57	33 U	-----	-----	57	39	-----
P-8	Jul-08	10-10.5	200208	1270040	1500	3400	4900	380 U	380 U	380 U	380 U	930	1000	610	-----	-----	2540	161	-----
P-8	Jul-08	15-15.5	200208	1270040	29	80	109	32 U	32 U	32 U	32 U	32 U	32 U	32 U	-----	-----	32 U	21	-----
P8-10N	Jan-21	0.5-1.5	200216	1270043	1190	1740	2930	491 U	491 U	491 U	491 U	9060	3190	2810	491 U	491 U	15060	78	0.07
P8-10N	Jan-21	5-6	200216	1270043	111	197	308	20 U	20 U	20 U	20 U	56.9	57.7	26.1	20 U	20 U	141	31	0.19
P8-20N	Jan-21	0.5-1.5	200226	1270044	8590	31200	39790	4930 U	4930 U	4930 U	4930 U	70500	32500	26500	4930 U	4930 U	129500	3780	3.1
P8-20N	Jan-21	2-3	200226	1270044	-----	-----	-----	20 U	20 U	20 U	20 U	173	305	309	20 U	20 U	787	-----	-----
P8-20N	Jan-21	5-6	200226	1270044	101	305	406	20 U	20 U	20 U	20 U	60.4	73.4	64.7	20 U	20 U	199	68	0.18
P8-30N	Jan-21	0.5-1.5	200236	1270045	2700	7270	9970	556 U	556 U	556 U	556 U	9670	4540	1660	556 U	556 U	15870	1440	0.70
P8-30N	Jan-21	5-6	200236	1270045	23.1	19.3	42.4	20 U	20 U	20 U	20 U	20 U	13 J	6 J	20 U	20 U	19	4.5	0.03 U
P8-10S	Jan-21	1-2	200197	1270040	1500	3100	4600	262 U	262 U	262 U	262 U	4470	2090	682	262 U	262 U	7242	15	0.48
P8-10S	Jan-21	2-3	200197	1270040	222	632	854	20 U	20 U	20 U	20 U	136	105	27	20 U	20 U	268	-----	-----
P8-10S	Jan-21	5-6	200197	1270040	102	218	320	15 U	15 U	15 U	15 U	45	93	35	15 U	15 U	173	86	0.17
P8-10NW	Jan-21	0.5-1.5	200216	1270037	5750	11200	16950	196 U	196 U	196 U	196 U	6280	2720	2190	196 U	196 U	11190	294	0.40
P8-10NW	Jan-21	5-6	200216	1270037	172	437	609	20 U	20 U	20 U	20 U	88.1	134	71	20 U	20 U	293	55	0.15
P8-20NW	Jan-21	0.5-1.5	200226	1270036	6490	13900	20390	452 U	452 U	452 U	452 U	12700	5760	12300 J	452 U	452 U	30760	226	1.1
P8-20NW	Jan-21	5-6	200226	1270036	119	443	562	20 U	20 U	20 U	20 U	59.9	82.3	35.7	20 U	20 U	178	207	0.71
P8-30NW	Jan-21	0.5-1.5	200236	1270037	4250	14200	18450	2710 U	2710 U	2710 U	2710 U	40600	18900	4780	2710 U	2710 U	64280	74.9	0.52
P830NW	Jan-21	2-3	200236	1270037	-----	-----	-----	100 U	100 U	100 U	100 U	1330	1400	698	100 U	100 U	3428	-----	-----
P8-30NW	Jan-21	5-6	200236	1270037	151	138	289	20 U	20 U	20 U	20 U	176	147	20.8	20 U	20 U	344	5.7	0.04
P8-15SW	Jan-21	0.5-1.5	200200	1270025	2160	4080	6240	197 U	197 U	197 U	197 U	4540	1850	2300	197 U	197 U	8690	212	2.7
P8-15SW	Jan-21	5-6	200200	1270025	314	468	782	20 U	20 U	20 U	20 U	60.1	79.1	42.1	20 U	20 U	181	17	0.08
P8-10SE	Jan-21	0.5-1.5	200195	1270051	1050	2380	3430	995 U	995 U	995 U	995 U	11000	4340	3550	995 U	995 U	18890	12	0.03
P8-10SE	Jan-21	2-3	200195	1270051	-----	-----	-----	20 U	20 U	20 U	20 U	25.4	35.5	15.2 J	20 U	20 U	76	-----	-----
P8-10SE	Jan-21	5-6	200195	1270051	216	463	679	20 U	20 U	20 U	20 U	87.5	63.2	25.6	20 U	20 U	176	26	0.12
P8-10NE	Jan-21	0.5-1.5	200215	1270053	2040	4220	6260	495 U	495 U	495 U	495 U	15500	8820	1440	495 U	495 U	25760	6710	0.52
P8-10NE	Jan-21	5-6	200215	1270053	208	390	598	20 U	20 U	20 U	20 U	186	109	56.3	20 U	20 U	351	50	0.16
P8-7W	Jan-21	1-2	200206	1270035	4800	11600	16400	99 U	99 U	99 U	99 U	1400	696	502	99 U	99 U	2598	31	0.06
P8-7W	Jan-21	5-6	200206	1270035	89.4	141	230.4	20 U	20 U	20 U	20 U	67.3	75.3	48.3	20 U	20 U	191	112	0.33
P8-10E	Jan-21	1-2	200205	1270052	2550	5040	7590	92 U	92 U	92 U	92 U	1060	640	533	92 U	92 U	2233	148	0.36
P8-10E	Jan-21	5-6	200205	1270052	542	1240	1782	20 U	20 U	20 U	20 U	65.9	66.5	29.8	20 U	20 U	162	23	0.08
P-9	Jul-08	2-2.5	200296	1270057	22	34	56	32 U	32 U	32 U	32 U	32 U	32 U	32 U	-----	-----	32 U	4	-----

TABLE 1 - Embayment Sediment and Upland Soil Analytical Data

Location	Collection Date	Spl. Depth (feet)	North NAD83	East NAD83	Petroleum Hydrocarbons (mg/kg-dw)			Aroclor PCBs (ug/kg-dw)										Total Metals (mg/kg-dw)	
					DRO	RRO	DRO+RRO	1016	1221	1232	1242	1248	1254	1260	1262	1268	Total	Pb	Hg
P-9	Jul-08	6-6.5	200296	1270057	58	240	298	33 U	33 U	33 U	33 U	33 U	71	99			170	25	
P-9	Jul-08	10-10.5	200296	1270057	940	3100	4040	560 U	560 U	560 U	560 U	2600	2400	1300	----	----	6300	52	----
P-9	Jul-08	12-12.5	200296	1270057	310	230	540	32 U	32 U	32 U	32 U	32 U	32 U	32 U	----	----	32 U	52	----
P-10	Jul-08	5-5.5	200273	1270082	6.1 U	13	13	33 U	33 U	33 U	33 U	33 U	33 U	33 U	----	----	33 U	4	----
P-10	Jul-08	10-10.5	200273	1270082	6.8 U	19	19	31 U	31 U	31 U	31 U	31 U	31 U	31 U	----	----	31 U	3	----
P-10	Jul-08	17.5-18	200273	1270082	6.8 U	17	17	32 U	32 U	32 U	32 U	32 U	32 U	32 U	----	----	32 U	3	----
P-11	Nov-14	3 - 4.5'	200029	1269980	5.2 U	10 U	10 U	3.7 U	3.7 U	3.7 U	3.7 U	3.7 U	3.1	3.7 U	----	----	3.1	4.9	0.05
P-11	Nov-14	9.5 - 11'	200029	1269980	8.2 U	17	17	3.9 U	3.9 U	3.9 U	3.9 U	9.8 U	3.9 U	3.9 U	----	----	9.8 U	4.2	0.04 U
P-11	Nov-14	15 - 17'	200029	1269980	6.0 U	12 U	12 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	----	----	4.0 U	1.3	0.02 U
P-12	Nov-14	3 - 4.5'	200103	1269981	6.9	11 U	6.9	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	5.3	3.8 U	----	----	5.3	1.7	0.03 U
P-12	Nov-14	6 - 8'	200103	1269981	----	----	----	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	----	----	4.0 U	----	----
P-12	Nov-14	9.8 - 11'	200103	1269981	7.0 U	14 U	14 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	----	----	3.9 U	3.1	0.04
P-12	Nov-14	12 - 14'	200103	1269981	6.8 U	14 U	14 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	----	----	3.8 U	2.8	0.03
P-12	Nov-14	15 - 17'	200103	1269981	6.5 U	13 U	13 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	----	----	3.8 U	2.1	0.03 U
P-13	Nov-14	4 - 6'	200118	1269928	1600	760	2360	3.9 U	3.9 U	3.9 U	3.9 U	230	1100	280	----	----	1610	147	0.17
P-13	Nov-14	6 - 8'	200118	1269928	----	----	----	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	----	----	4.0 U	----	----
P-13	Nov-14	9.5 - 11'	200118	1269928	6.4 U	13 U	13 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	----	----	3.8 U	1.8	0.03 U
P-13	Nov-14	16.5 - 18'	200118	1269928	6.2 U	12 U	12 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	----	----	3.9 U	1.7	0.03 U
P-14	Nov-14	3 - 5'	200170	1269882	15	20	35	3.8 U	3.8 U	3.8 U	3.8 U	24	43	27	----	----	94	49	0.07
P-14	Nov-14	6 - 8'	200170	1269882	----	----	----	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	----	----	3.8 U	----	----
P-14	Nov-14	10 - 11.5'	200170	1269882	6.7 U	13 U	13 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	----	----	3.9 U	3.4	0.05
P-14	Nov-14	15 - 17'	200170	1269882	6.1 U	12 U	12 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	----	----	3.8 U	1.6	0.03 U
P-15	Nov-14	3 - 5'	200186	1269923	260	160	420	3.7 U	3.7 U	3.7 U	3.7 U	7.5 U	20	5.9	----	----	25.9	46	0.07
P-15	Nov-14	6 - 8'	200186	1269923	----	----	----	3.8 U	3.8 U	3.8 U	3.8 U	5.8 U	5.2	2.3 J	----	----	5.2	----	----
P-15	Nov-14	8.5 - 10'	200186	1269923	25	78	103	4.0 U	4.0 U	5.0 U	4.0 U	4.0 U	4.0 U	4.0 U	----	----	nd	9	0.05
P-15	Nov-14	15 - 17'	200186	1269923	6.2 U	12 U	12 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	----	----	3.9 U	1.2	0.03 U
P-16	Dec-14	3 - 4'	200228	1270120	5.4 U	11 U	11 U	3.8 U	3.8 U	3.8 U	3.8 U	13 U	160	23	----	----	183	2.1	0.02 U
P-16	Dec-14	6 - 8'	200228	1270120	----	----	----	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	----	----	3.8 U	----	----
P-16	Dec-14	9 - 10'	200228	1270120	7.0 U	14 U	14 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	----	----	3.9 U	2.2	0.03
P-16	Dec-14	15 - 17'	200228	1270120	6.8 U	14 U	14 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	----	----	3.8 U	1.9	0.03 U
P-17	Nov-14	4.5 - 6.5'	200289	1269833	950	290	1240	490 U	490 U	490 U	490 U	490 U	9800 U	34000	----	----	34000	8	0.06
P-17	Nov-14	6.7 - 8'	200289	1269833	----	----	----	130 U	130 U	130 U	130 U	650 U	2900	5500	----	----	8400	----	----
P-17	Nov-14	9 - 11'	200289	1269833	7.7 U	16	16	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	12 U	22	----	----	22	3.6	0.03
P-17	Nov-14	12 - 14'	200289	1269833	----	----	----	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	----	----	3.8 U	----	----
P-17	Nov-14	15 - 17'	200289	1269833	6.1 U	12 U	12 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	2.1	----	----	2.1	1.5	0.02 U
P-17	Nov-14	21 - 23'	200289	1269833	----	----	----	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	----	----	3.8 U	----	----
P-18	Dec-14	3 - 5'	200176	1270073	840	740	1580	22 U	22 U	22 U	22 U	3500	1600	420	----	----	5520	38	0.2
P-18	Dec-14	9 - 10'	200176	1270073	210	410	620	19 U	19 U	19 U	19 U	110	190	69	----	----	369	69	0.22
P-18	Dec-14	12 - 14'	200176	1270073	----	----	----	----	----	----	----	----	----	----	----	----	----	56	----
P-18	Dec-14	14 - 16'	200176	1270073	2900	5500	8400	20 U	20 U	20 U	20 U	3600	6100	2000	----	----	11700	950	4.8
P-18	Dec-14	21 - 23'	200176	1270073	6.3 U	13 U	12 U	3.8 U	3.8 U	3.8 U	3.8 U	43	43	27	----	----	113	----	----
P-18	Dec-14	31 - 33'	200176	1270073	6.1 U	12 U	12 U	3.8 U	3.8 U	3.8 U	3.8 U	5.1	3.8	3.8 U	----	----	8.9	1.2	0.03 U

TABLE 1 - Embayment Sediment and Upland Soil Analytical Data

Location	Collection Date	Spl. Depth (feet)	North NAD83	East NAD83	Petroleum Hydrocarbons (mg/kg-dw)			Aroclor PCBs (ug/kg-dw)										Total Metals (mg/kg-dw)				
					DRO	RRO	DRO+RRO	1016	1221	1232	1242	1248	1254	1260	1262	1268	Total	Pb	Hg			
P-18	Dec-14	41 - 43'	200176	1270073	----	----	----	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	----	----	4.0 U	----	----
P-19	Dec-14	3 - 4'	200102	1270073	300	1100	1400	19 U	19 U	19 U	19 U	660	670	120	----	----	1450	61	0.1			
P-19	Dec-14	9 - 10'	200102	1270073	29	50	79	20 U	20 U	20 U	20 U	340	290	170	----	----	800	2.9	0.03 U			
P-19	Dec-14	15 - 17'	200102	1270073	7.6	19	27	20 U	20 U	20 U	20 U	28	43	60	----	----	131	6.2	0.04			
P-19	Dec-14	21 - 23'	200102	1270073	----	----	----	4.0 U	4.0 U	4.0 U	4.0 U	9.9 U	12	26	----	----	38	----	----			
P-20	Nov-14	2 - 4'	200131	1270135	11	11	22	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	5.1	----	----	5.1	2.6	0.03			
P-20	Nov-14	9.5 - 11'	200131	1270135	6.8 U	14 U	14 U	3.8 U	3.8 U	3.8 U	3.8 U	13	14	10	----	----	37	2.3	0.03			
P-20	Nov-14	12 - 14'	200131	1270135	----	----	----	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	----	----	3.9 U	----	----
P-20	Nov-14	15 - 17'	200131	1270135	6.6 U	13 U	13 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	----	----	3.9 U	2.1	0.02 U
P-21	Dec-14	6 - 8'	200078	1270110	270	500	770	380 U	380 U	380 U	380 U	4400	3300	1500	----	----	9200	127	0.23			
P-21	Dec-14	12 - 14'	200078	1270110	290	690	980	96 U	96 U	96 U	96 U	1900	1900	500	----	----	4300	24	2.9			
P-21	Dec-14	15 - 17'	200078	1270110	6.7 U	13 U	13 U	4.0 U	4.0 U	4.0 U	4.0 U	4.6	4.9	4.0 U	----	----	9.5	2.3	0.04			
P-21	Dec-14	21 - 23'	200078	1270110	----	----	----	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	----	----	4.0 U	----	----
P-21	Dec-14	31 - 33'	200078	1270110	6.1 U	12 U	12 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	----	----	3.8 U	1.3	0.03 U
P-22	Nov-14	3 - 4.5'	200045	1270101	15	41	56	3.7 U	3.7 U	3.7 U	3.7 U	65	120	98	----	----	283	42	0.06			
P-22	Nov-14	6 - 8'	200045	1270101	----	----	----	20 U	20 U	20 U	20 U	370	540	240	----	----	1150	----	----			
P-22	Nov-14	9 - 11'	200045	1270101	8.7	19	28	4.0 U	4.0 U	4.0 U	4.0 U	13	19	16	----	----	48	2.8	0.03			
P-22	Nov-14	12 - 14'	200045	1270101	----	----	----	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	4.1	2.5 J	----	----	4.1	----	----			
P-22	Nov-14	15 - 17'	200045	1270101	6.7 U	13 U	12 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	----	----	4.0 U	2.7	0.03 U
P-23	Nov-14	2 - 4'	200088	1270159	5	22	27	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	96 U	520	----	----	520	76	0.03			
P-23	Nov-14	9.5 - 11	200088	1270159	6.8 U	14 U	14 U	3.8 U	3.8 U	3.8 U	3.8 U	28	23	14	----	----	65	2.6	0.03 U			
P-23	Nov-14	12 - 14'	200088	1270159	6.1 U	12 U	12 U	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
P-23	Nov-14	15 - 17'	200088	1270159	6.9 U	14 U	14 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	----	----	3.9 U	1.9	0.03 U
P-24	Nov-14	3 - 5'	200002	1270177	12	20	32	4.0 U	4.0 U	4.0 U	4.0 U	6.0 U	42	58	----	----	100	21	0.05			
P-24	Nov-14	9 - 10.5'	200002	1270177	810	2000	2810	4.0 U	4.0 U	4.0 U	4.0 U	980	1400	420	----	----	2800	34	2.1			
P-24	Nov-14	12 - 14'	200002	1270177	----	----	----	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	----	----	3.9 U	----	----
P-24	Nov-14	15 - 17'	200002	1270177	6.2 U	12 U	12 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	----	----	3.9 U	1.2	0.03 U
P-25	Nov-14	1 - 3'	199938	1270191	27	53	80	38 U	38 U	38 U	38 U	38 U	1600	2200	----	----	3800	42	0.38			
P-25	Nov-14	9 - 11'	199938	1270191	14	37	51	3.8 U	3.8 U	3.8 U	3.8 U	29 U	220	300	----	----	520	5.8	0.05			
P-25	Nov-14	12 - 14'	199938	1270191	----	----	----	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	----	----	3.8 U	----	----
P-25	Nov-14	15 - 17'	199938	1270191	12	13 U	12	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	----	----	3.9 U	1.5	0.03 U
P-26	Nov-14	3 - 5'	199981	1270213	28	86	114	3.8 U	3.8 U	3.8 U	3.8 U	18	53	57	----	----	128	76	0.06			
P-26	Nov-14	6 - 8'	199981	1270213	----	----	----	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	----	----	3.8 U	----	----
P-26	Nov-14	9 - 11'	199981	1270213	6.9 U	14 U	14 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	----	----	3.9 U	2.8	0.03 U
P-26	Nov-14	15 - 17'	199981	1270213	6.8 U	14 U	14 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	----	----	3.8 U	2.8	0.03 U
P-27	Nov-14	1 - 3'	199886	1270262	9	34	43	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	99 U	40	----	----	40	388	0.24			
P-27	Nov-14	6 - 8'	199886	1270262	----	----	----	----	----	----	----	----	----	----	----	----	----	4	----			
P-27	Nov-14	9 - 11'	199886	1270262	7.2 U	14 U	14 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	5.7 U	3.4	----	----	3.4	52	0.06			
P-27	Nov-14	15 - 17'	199886	1270262	6.2 U	12 U	12 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	----	----	3.9 U	1.4	0.03 U
P-27	Nov-14	31 - 33'	199886	1270262	8.8	13 U	9	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	----	----	3.8 U	1.9	0.03 U
P-28	Dec-14	3 - 5'	200247	1269824	13	13 U	13	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	4.7 U	5.4	----	----	5.4	2.2	0.03 U			
P-28	Dec-14	8.5 - 10'	200247	1269824	9.4 U	25	25	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	5.1	----	----	5.1	3.4	0.04 U			

TABLE 1 - Embayment Sediment and Upland Soil Analytical Data

Location	Collection Date	Spl. Depth (feet)	North NAD83	East NAD83	Petroleum Hydrocarbons (mg/kg-dw)			Aroclor PCBs (ug/kg-dw)										Total Metals (mg/kg-dw)	
					DRO	RRO	DRO+RRO	1016	1221	1232	1242	1248	1254	1260	1262	1268	Total	Pb	Hg
P-28	Dec-14	15 - 17'	200247	1269824	6.0 U	12 U	12 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	9.4 U	13	-----	-----	13	1.2	0.02 U
P-28	Dec-14	21 - 23'	200247	1269824	-----	-----	-----	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	-----	-----	3.8 U	-----	-----
P-28	Dec-14	31 - 33'	200247	1269824	6.0 U	12 U	12 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	-----	-----	3.8 U	0.8	0.02 U
P-29	Dec-14	3 - 4'	200265	1269944	17000	48000	65000	24 U	24 U	24 U	24 U	17000	9700	5600	-----	-----	32300	4590	5.3
P-29	Dec-14	6 - 8'	200265	1269944	8400	20000	28400	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	13	-----
P-29	Dec-14	9 - 10'	200265	1269944	110	220	330	3.9 U	3.9 U	3.9 U	3.9 U	460	320	290	-----	-----	1070	8.2	0.03 U
P-29	Dec-14	15 - 17'	200265	1269944	32	34	66	3.9 U	3.9 U	3.9 U	3.9 U	150	170	45	-----	-----	365	2.1	0.03
P-29	Dec-14	21 - 23'	200265	1269944	-----	-----	-----	19 U	19 U	19 U	19 U	530	600	140	-----	-----	1270	-----	-----
P-29	Dec-14	31 - 33'	200265	1269944	6.4 U	13 U	13 U	3.8 U	3.8 U	3.8 U	3.8 U	4.9	2.6	2.8	-----	-----	10.3	2.1	0.03
P-29	Dec-14	41 - 43'	200265	1269944	-----	-----	-----	3.8 U	3.8 U	3.8 U	3.8 U	6.4	5.0	3.0 J	-----	-----	11.4	-----	-----
P-29	Dec-14	49 - 50'	200265	1269944	-----	-----	-----	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	-----	-----	3.8 U	-----	-----
P-30	Dec-14	6 - 7'	200295	1270067	800	2500	3300	3.9 U	3.9 U	3.9 U	3.9 U	450	330	200	-----	-----	980	71	0.26
P-30	Dec-14	9 - 10'	200295	1270067	100	260	360	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
P-30	Dec-14	12.5 - 13.5'	200295	1270067	230	810	1040	4.0 U	4.0 U	4.0 U	4.0 U	530	400	230	-----	-----	1160	42	0.08
P-30	Dec-14	15 - 16.5'	200295	1270067	16	31	47	3.9 U	3.9 U	3.9 U	3.9 U	19 U	12 U	4.8 U	-----	-----	19 U	18	0.12
P-30	Dec-14	21 - 23'	200295	1270067	-----	-----	-----	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	-----	-----	3.9 U	-----	-----
P-30	Dec-14	31 - 33'	200295	1270067	6.0 U	12 U	12 U	3.8 U	3.8 U	3.8 U	3.8 U	5.3	6	3.8 U	-----	-----	11.3	1.3	0.02 U
P-30	Dec-14	41 - 43'	200295	1270067	-----	-----	-----	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	-----	-----	3.9 U	-----	-----
P-30	Dec-14	49 - 50'	200295	1270067	-----	-----	-----	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	-----	-----	3.9 U	-----	-----
P-31	Dec-14	3 - 4'	200244	1270179	6.5 U	13 U	13 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	-----	-----	3.8 U	6.6	0.06
P-31	Dec-14	9 - 11'	200244	1270179	6.8 U	14 U	14 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	-----	-----	3.8 U	1.9	0.03 U
P-31	Dec-14	15 - 17'	200244	1270179	6.8 U	14 U	14 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	-----	-----	3.8 U	1.6	0.03 U
P-31	Dec-14	31 - 33'	200244	1270179	6.2 U	12 U	12 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	-----	-----	3.9 U	1.1	0.03 U
P-32	Dec-14	16 - 17.5'	200183	1269973	6.2 U	12 U	12 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	-----	-----	3.9 U	1.2	0.02 U
P-32	Dec-14	31 - 33'	200183	1269973	5.8 U	12 U	12 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	-----	-----	3.9 U	0.9	0.03 U
P-33	Dec-14	15 - 17'	199983	1270159	6.7 U	14 U	14 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	-----	-----	4.0 U	2.5	0.03 U
P-33	Dec-14	31 - 33'	199983	1270159	6.2 U	12 U	12 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	-----	-----	3.9 U	1.1	0.03 U
PP-1	Nov-20	5-6	200332	1269701	5.6 U	18.9	18.9	15 U	15 U	15 U	15 U	15 U	24.7	11 J	15 U	15 U	36	17	0.18 J
PP-1	Nov-20	7.5-8.5	200332	1269701	6.0 U	15.6	15.6	16 U	16 U	16 U	16 U	16 U	16 U	5 J	16 U	16 U	5	9.8	0.02 J
PP-2	Nov-20	5-6	200334	1269732	6.0 U	14.2	14.2	16 U	16 U	16 U	16 U	16 U	16 U	16 U	16 U	16 U	16 U	2.3 J	0.01 J
PP-2	Nov-20	6.5-7.5	200334	1269732	6.5 U	13 U	13 U	18 U	18 U	18 U	18 U	18 U	18 U	18 U	18 U	18 U	18 U	2.3 J	0.01
PP-3	Nov-20	1-2	200325	1269763	288	4090	4378	20 U	20 U	20 U	20 U	20 U	24.4	38.2	20 U	20 U	62.6	88	0.06
PP-3	Nov-20	5-6	200325	1269763	6.3 U	12.5 U	13 U	20 U	20 U	20 U	20 U	20 U	20 U	4 J	20 U	20 U	4	15	0.05
PP-4	Oct-20	2.5	200266	1269796	5.6 U	16.8	22	20 U	20 U	20 U	20 U	20 U	20 U	12 J	20 U	20 U	11.9	4.1	0.03
PP-4	Oct-20	7.5	200266	1269796	11.1	13.9	25	20 U	20 U	20 U	20 U	35.9	52.7	117	20 U	20 U	206	1.3 J	0.01 J
PP-5	Nov-20	1.5-2.5	200289	1269788	24.9	68.6	93.5	18 U	18 U	18 U	18 U	18 U	13.9 J	33.7	18 U	18 U	47.6	19	0.05
PP-5	Nov-20	8-9	200289	1269788	7.1 U	19.0	19.0	19 U	19 U	19 U	19 U	19 U	19 U	19 U	19 U	19 U	19 U	3.2	0.12
PP-7	Nov-20	2-3	200243	1269800	5.56	11.3	17	20 U	20 U	20 U	20 U	20 U	24.5	100	20 U	20 U	124.5	2.9	0.01 J
PP-7	Nov-20	7-8	200243	1269800	29	29.4	58	20 U	20 U	20 U	20 U	14.6 J	20.8	69.7	20 U	20 U	105	2.3 J	0.01 J
PP-8*	Oct-20	2.5-3.5	200303	1269824	1160	3550	4710	1450 U	1450 U	1450 U	1450 U	14700	12500	13000	1450 U	1450 U	40200	-----	-----
PP-8	Oct-20	5.5-6.5	200303	1269824	91.7	238	330	99 U	99 U	99 U	99 U	641	543	450	99 U	99 U	1634	18	0.06
PP-8*	Oct-20	7.3-8.3	200303	1269824	-----	-----	-----	20 U	20 U	20 U	20 U	16.2 J	16.8 J	21	20 U	20 U	54	-----	-----

TABLE 1 - Embayment Sediment and Upland Soil Analytical Data

Location	Collection Date	Spl. Depth (feet)	North NAD83	East NAD83	Petroleum Hydrocarbons (mg/kg-dw)			Aroclor PCBs (ug/kg-dw)										Total Metals (mg/kg-dw)	
					DRO	RRO	DRO+RRO	1016	1221	1232	1242	1248	1254	1260	1262	1268	Total	Pb	Hg
PP-8	Oct-20	10-11	200303	1269824	7.0 U	17.9	25	20 U	20 U	20 U	20 U	11.4	5 J	8 J	20 U	20 U	24	3.1	0.04
PP-9	Oct-20	2-3	200265	1269819	13.2	31	44	99 U	99 U	99 U	99 U	175	352	980	99 U	99 U	1507	14	0.04
PP-9*	Oct-20	5-6	200265	1269819	-----	-----	-----	199 U	199 U	199 U	199 U	1110 J	2940	4370	199 U	199 U	8420	-----	-----
PP-9	Oct-20	7-8	200265	1269819	51.7	183	235	20 U	20 U	20 U	20 U	20 U	28.5	58.8	20 U	20 U	87	2.7 J	0.03 J
PP-10	Oct-20	2-3	200221	1269829	4140	279 U	4419	20 U	20 U	20 U	20 U	12.2 J	9.1 J	16.7 J	20 U	20 U	38	2.4	0.01 J
PP-10*	Oct-20	5-6	200221	1269829	41.5	20.4	62	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
PP-10	Oct-20	7-8	200221	1269829	15.7	27.1	43	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	1.6 J	0.01
PP-11	Oct-20	2-3	200285	1269857	19.5	28.5	48	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	5.7	0.02
PP-11	Oct-20	6.5-7.5	200285	1269857	34.8	43.4	78	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	4.7	0.03
PP-12	Oct-20	2.5-3.5	200257	1269846	12100	1640	13740	199 U	199 U	199 U	199 U	2150	3150 J	5340	199 U	199 U	10640	16	0.10
PP-12*	Oct-20	5-6	200257	1269846	7630	852	8482	100 U	100 U	100 U	100 U	626	1110 J	1770	100 U	100 U	3506	-----	-----
PP-12	Oct-20	6.5-7.5	200257	1269846	39.4	24.6	64	100 U	100 U	100 U	100 U	75 J	107	209	100 U	100 U	391	1.4 J	0.01 J
PP-13	Nov-20	2-3	200269	1269872	5690	2340	8030	20 U	20 U	20 U	20 U	20 U	20 U	5 J	20 U	20 U	5	26	0.04
PP-13	Nov-20	5-6	200269	1269872	24.1	17.1	41	20 U	20 U	20 U	20 U	8 J	5 J	9 J	20 U	20 U	22	5.5	0.04
PP-15	Nov-20	2-3	200263	1269898	49	73.2	122	20 U	20 U	20 U	20 U	5 J	5 J	8 J	20 U	20 U	18	55	0.08
PP-15	Nov-20	5-6	200263	1269898	51.4	39.7	91	20 U	20 U	20 U	20 U	20 U	10.7 J	7 J	20 U	20 U	11	10	0.09
PP-16	Nov-20	2-3	200234	1269889	2520	5190	7710	200 U	200 U	200 U	200 U	9920	3980	1220	200 U	200 U	15120	11800	0.13
PP-16	Nov-20	5-6	200234	1269889	187	141	328	200 U	200 U	200 U	200 U	1580	883	270	200 U	200 U	2733	4.1	0.03 J
PP-16	Nov-20	7.5-8.5	200234	1269889	-----	-----	-----	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	-----	-----
PP-17	Oct-20	1-2	200211	1269878	8010	13700	21710	400 U	400 U	400 U	400 U	9910	6740	1180	400 U	400 U	17830	943	0.13
PP-17*	Oct-20	5-6	200211	1269878	169	296	465	20 U	20 U	20 U	20 U	73.6	44.2	16.6 J	20 U	20 U	118	23	-----
PP-17	Oct-20	7.5-8.5	200211	1269878	58	151	209	20 U	20 U	20 U	20 U	28.3	20	7 J	20 U	20 U	55	3.0	0.04
PP-18*	Oct-20	2-3	200271	1269920	8470	24000	32470	3370 U	3370 U	3370 U	3370 U	38900	21200	9970	3370 U	3370 U	70070	6270	-----
PP-18	Oct-20	5-6	200271	1269920	1180	2130	3310	20 U	20 U	20 U	20 U	669	858	258	20 U	20 U	1785	2410	0.47
PP-18*	Oct-20	7-8	200271	1269920	245	339	584	100 U	100 U	100 U	100 U	403	346	95 J	100 U	100 U	844	23	-----
PP-18	Oct-20	10-11	200271	1269920	443	944	1387	20 U	20 U	20 U	20 U	770	578	304	20 U	20 U	1652	13	0.03
PP-19	Oct-20	2-3	200253	1269920	1540	2110	3650	20 U	20 U	20 U	20 U	497	711	364	20 U	20 U	1572	386	0.74
PP-19*	Oct-20	5-6	200253	1269920	287	307	594	20 U	20 U	20 U	20 U	423	329	107	20 U	20 U	859	-----	0.14
PP-19	Oct-20	7-8	200253	1269920	49.8	43.3	93	20 U	20 U	20 U	20 U	160	108	46.6	20 U	20 U	315	8.1	0.07
PP-20	Oct-20	5-6.5	200230	1269911	26	20.3	46	20 U	20 U	20 U	20 U	17.9 J	12.9 J	10.3 J	20 U	20 U	41	8.1	0.02
PP-20	Oct-20	10-11	200230	1269911	6.9 U	21.1	21	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	2.5 J	0.03
PP-21	Oct-20	2-3	200212	1269915	124	246	370	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	32	0.12
PP-21	Oct-20	6.5-7.5	200212	1269915	127	440	567	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	33	0.06
PP-22	Oct-20	2-3	200230	1269932	3170	2010	5180	20 U	20 U	20 U	20 U	243	185	243	20 U	20 U	671	42	0.02
PP-22*	Oct-20	5-6	200230	1269932	35.1	82.2	117	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	-----	-----
PP-22	Oct-20	7-8	200230	1269932	15	20	35	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	2.0 J	0.04
PP-23	Oct-20	1-2	200232	1269957	2090	3920	6010	494 U	494 U	494 U	494 U	9960	7550	13300	494 U	494 U	30810	0.9 J	0.0182 U
PP-23*	Oct-20	5-6	200232	1269957	366	587	953	498 U	498 U	498 U	498 U	710	630	732	498 U	498 U	2072	-----	-----
PP-23	Oct-20	7.5-8.5	200232	1269957	309	369	678	99 U	99 U	99 U	99 U	465	274	184	99 U	99 U	923	1.7 J	0.02 J
PP-24	Oct-20	1.5-2.5	200205	1269954	11400	21800	33200	1000 U	1000 U	1000 U	1000 U	23200	12800	4620	1000 U	1000 U	40620	16	1.1
PP-24*	Oct-20	5-6	200205	1269954	66.4	82.1	149	20 U	20 U	20 U	20 U	57.8	37.9	9.7 J	20 U	20 U	105	-----	0.03 J
PP-24	Oct-20	7.5-8.5	200205	1269954	13.1	32	45	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	46	0.04

TABLE 1 - Embayment Sediment and Upland Soil Analytical Data

Location	Collection Date	Spl. Depth (feet)	North NAD83	East NAD83	Petroleum Hydrocarbons (mg/kg-dw)			Aroclor PCBs (ug/kg-dw)									Total Metals (mg/kg-dw)			
					DRO	RRO	DRO+RRO	1016	1221	1232	1242	1248	1254	1260	1262	1268	Total	Pb	Hg	
PP-25	Oct-20	7-8	200265	1269956	127	284	411	20 U	20 U	20 U	20 U	319	353	172	20 U	20 U	844	1.7 J	0.08	
PP-25	Oct-20	10-11	200265	1269956	107	151	258	20 U	20 U	20 U	20 U	733	439	393	20 U	20 U	1565	2.4 J	0.05	
PP-26	Oct-20	7.5-8.5	200245	1269969	303	908	1211	20 U	20 U	20 U	20 U	433	396	361	20 U	20 U	1190	4.1	0.22	
PP-26*	Oct-20	10-11	200245	1269969	76.8	48.8	126	20 U	20 U	20 U	20 U	191	205	364	20 U	20 U	760	-----	-----	
PP-26	Oct-20	12-13	200245	1269969	155	172	327	20 U	20 U	20 U	20 U	379	291	229	20 U	20 U	899	2.1 J	0.02 J	
PP-27*	Oct-20	1-2	200206	1269977	5150	11100	16250	2580 U	2580 U	2580 U	2580 U	10600	6220	8770	2580 U	2580 U	25590	-----	-----	
PP-27	Oct-20	5-6	200206	1269977	63.7	47.7	111	20 U	20 U	20 U	20 U	84.9	20 U	15.6 J	11.0 J	20 U	20 U	112	1.7 J	0.02 J
PP-27	Oct-20	10-11	200206	1269977	14.4	23.5	37.9	20 U	20 U	20 U	20 U	30.8	20 U	9.6 J	6 J	20 U	20 U	46	1.7 J	0.01 J
PP-28	Oct-20	2-3	200257	1269988	3940	9980	13920	99 U	99 U	99 U	99 U	729	799	99 U	99 U	99 U	1528	20	0.01 J	
PP-28*	Oct-20	5-6	200257	1269988	477	1220	1697	20 U	20 U	20 U	20 U	17.2 J	29.9	19.4 J	20 U	20 U	47	-----	0.01 J	
PP-28	Oct-20	10-11	200257	1269988	9400	23100	32500	199 U	199 U	199 U	199 U	8000	5980	3020	199 U	199 U	17000	1090	14	
PP-28*	Oct-20	12-13	200257	1269988	78	139	217	20 U	20 U	20 U	20 U	39.5	24.8	10.9 J	20 U	20 U	75	-----	0.03	
PP-28	Oct-20	13-14	200257	1269988	27	60.3	87.3	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	1.9 J	0.02 J	
PP-30	Oct-20	1-2	200267	1270027	8640	19000	27640	2660 U	2660 U	2660 U	2660 U	27400	9950	2770	2660 U	2660 U	40120	-----	-----	
PP-30	Oct-20	5-6	200267	1270027	18.5	57.7	76.2	20 U	20 U	20 U	20 U	20 U	32.2	22.3	20 U	20 U	54.5	18	0.02 J	
PP-30	Oct-20	12-13	200267	1270027	29.8	55	84.8	20 U	20 U	20 U	20 U	17.0 J	16.5 J	17.2 J	20 U	20 U	50.7	10	0.09 J	
PP-31	Oct-20	1.5-2.5	200233	1270036	915	2490	3405	199 U	199 U	199 U	199 U	7170	4870	1490	199 U	199 U	13530	154	0.15	
PP-31*	Oct-20	5-6	200233	1270036	24.3	26.1	50.4	20 U	20 U	20 U	20 U	20 U	5 J	20 U	20 U	20 U	5	-----	-----	
PP-31	Oct-20	6.5-7.5	200233	1270036	1720	4610	6330	20 U	20 U	20 U	20 U	233	352	448	20 U	20 U	1033	14	0.05	
PP-31*	Oct-20	10-11	200233	1270036	14.4	35	49.4	20 U	20 U	20 U	20 U	18.9 J	8.1 J	2 J	20 U	20 U	27	-----	-----	
PP-31*	Oct-20	12-13	200233	1270036	12	28.3	40.3	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	nd	-----	-----	
PP-32	Oct-20	5.5-6.5	200296	1270053	164	402	566	99 U	99 U	99 U	99 U	1670	1280	1240	99 U	99 U	4190	61	0.12	
PP-32	Oct-20	10-11	200296	1270053	241	563	804	99 U	99 U	99 U	99 U	2510	1500	1820	99 U	99 U	5830	294	0.32	
PP-33	Oct-20	2-3	200261	1270039	420	1230	1650	100 U	100 U	100 U	100 U	877	649	426	100 U	100 U	1952	52	0.24	
PP-33	Oct-20	5-6	200261	1270039	35.5	117	153	20 U	20 U	20 U	20 U	86	108	137	20 U	20 U	331	36	0.16	
PP-33	Oct-20	12-13	200261	1270039	33	49.4	82	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	6.0	0.02 J	
PP-34*	Oct-20	1-2	200282	1270070	146	292	438	20 U	20 U	20 U	20 U	139	84.9	55	20 U	20 U	279	-----	-----	
PP-34	Oct-20	5-6	200282	1270070	130	334	464	20 U	20 U	20 U	20 U	384	248	229	20 U	20 U	861	22	0.15	
PP-34	Oct-20	10-11	200282	1270070	23.2	79.3	103	20 U	20 U	20 U	20 U	46.2	68.3	99.9	20 U	20 U	214	46	0.03	
PP-35*	Oct-20	1.7-2	200311	1270070	1330	4180	5510	573 U	573 U	573 U	573 U	15900	5730	1970	573 U	573 U	23600	-----	-----	
PP-35	Oct-20	5-6	200311	1270070	61.8	265	327	20 U	20 U	20 U	20 U	160	82.7	86.3	20 U	20 U	329	47	0.05	
PP-35	Oct-20	10-11	200311	1270070	40.4	98.9	139	20 U	20 U	20 U	20 U	271	166	183	20 U	20 U	620	36	0.05	
PP-35*	Oct-20	12-13	200311	1270070	149	410	559	20 U	20 U	20 U	20 U	241	123	137	20 U	20 U	501	-----	-----	
PP-35	Oct-20	15-16	200311	1270070	485	730	1215	99 U	99 U	99 U	99 U	2340	1690	1420	99 U	99 U	5450	110	0.50	
PP-35	Oct-20	17-18	200311	1270070	119	284	403	20 U	20 U	20 U	20 U	94.2	72 J	28.5	20 U	20 U	195	39	0.19	
PP-36	Oct-20	1-2	200249	1270067	1810	6050	7860	994 U	994 U	994 U	994 U	13800	8010	1870	994 U	994 U	23680	689	4.0	
PP-36	Oct-20	5-6	200249	1270067	19.1	75.7	94.8	20 U	20 U	20 U	20 U	27	17 J	20 U	20 U	20 U	37	62	0.04	
PP-36	Oct-20	10-11	200249	1270067	7.65	26.6	34.3	20 U	20 U	20 U	20 U	20 U	26.6 J	17.2 J	20 U	20 U	44	6.4	0.02 J	
PP-37	Oct-20	1.5-2.5	200288	1270088	69.5	209	279	20 U	20 U	20 U	20 U	151	85.8	108	20 U	20 U	345	48	0.09	
PP-37	Oct-20	10-11	200288	1270088	1020	2620	3640	498 U	498 U	498 U	498 U	4700	3410	3610	498 U	498 U	11720	153	0.25	
PP-37*	Oct-20	12-13	200288	1270088	826	1940	2766	99 U	99 U	99 U	99 U	985	1140	474	99 U	99 U	2599	-----	-----	
PP-37*	Oct-20	17-18	200288	1270088	21.1	58.1	79	20 U	20 U	20 U	20 U	7 J	6 J	20 U	20 U	20 U	13	-----	-----	

TABLE 1 - Embayment Sediment and Upland Soil Analytical Data

Location	Collection Date	Spl. Depth (feet)	North NAD83	East NAD83	Petroleum Hydrocarbons (mg/kg-dw)			Aroclor PCBs (ug/kg-dw)									Total Metals (mg/kg-dw)		
					DRO	RRO	DRO+RRO	1016	1221	1232	1242	1248	1254	1260	1262	1268	Total	Pb	Hg
PP-38	Oct-20	1.5-2.5	200306	1270123	5240	16100	21340	----	----	----	----	----	----	----	----	----	----	27	0.06
PP-38	Oct-20	5-6	200306	1270123	952	3010	3962	199 U	199 U	199 U	199 U	3060	1770 J	603 J	199 U	199 U	5433	43	0.15
PP-38	Oct-20	10-11	200306	1270123	148	331	479	20 U	20 U	20 U	20 U	169	152	67.6	20 U	20 U	389	48	0.15
PP-38*	Oct-20	12.5-13.5	200306	1270123	346	456	802	20 U	20 U	20 U	20 U	333	184	204	20 U	20 U	721	----	----
PP-38*	Oct-20	16-17	200306	1270123	6.0 U	12.1 U	12.1 U	20 U	20 U	20 U	20 U	7 J	5 J	20 U	20 U	20 U	12	----	----
PP-39	Oct-20	2-3	200277	1270112	16400	37000	53400	997 U	997 U	997 U	997 U	16100 J	8910	27000	997 U	997 U	52010	2170	5.0
PP-39	Oct-20	5-6	200277	1270112	77.1	237	314.1	20 U	20 U	20 U	20 U	151	88.8	101	20 U	20 U	341	58	0.05
PP-39	Oct-20	7-8	200277	1270112	2170	7040	9210	1990 U	1990 U	1990 U	1990 U	13400	8710	10900	1990 U	1990 U	33010	296	0.33
PP-39	Oct-20	10-11	200277	1270112	267	835	1102	20 U	20 U	20 U	20 U	112	99.6	149	20 U	20 U	361	827	0.58
PP-40*	Oct-20	2-3	200259	1270124	51.9	158	210	20 U	20 U	20 U	20 U	140	208	142	20 U	20 U	490	----	----
PP-40	Oct-20	5-6	200259	1270124	7 U	13 U	13 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	1.8 J	0.02 J
PP-40	Oct-20	10-11	200259	1270124	7 U	13 U	13 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	11	0.01 J
DOF-MW1	Oct-12	4 - 5'	199988	1270151	8.1	16	24	3.7 U	3.7 U	3.7 U	3.7 U	9.3 U	83 U	470	----	----	470	11	0.04
DOF-MW1	Oct-12	6.5 - 7.5'	199988	1270151	6.8 U	14 U	14 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	5.8	9.8	----	----	15.6	3.0	0.05
DOF-MW1	Oct-12	11 - 12'	199988	1270151	7.1 U	14 U	14 U	3.8 U	3.8 U	3.8 U	3.8 U	6.4	7.6 U	26	----	----	32.4	2.0	0.03
DOF-MW2	Oct-12	2 - 3'	199928	1269979	5.0 U	10 U	10 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	----	----	3.9 U	1.8	0.02 U
DOF-MW2	Oct-12	8 - 9'	199928	1269979	5.2 U	10 U	10 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	----	----	3.8 U	2.9	0.23
DOF-MW2	Oct-12	12 - 13'	199928	1269979	6.7 U	13 U	13 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	----	----	3.8 U	4.7	0.04
DOF-MW3	Oct-12	2 - 4'	199878	1269775	5.3 U	11 U	11 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	----	----	3.8 U	3.4	0.03 U
DOF-MW3	Oct-12	7 - 8'	199878	1269775	22	17	39	3.7 U	3.7 U	3.7 U	3.7 U	3.7 U	3.7 U	3.7 U	----	----	3.7 U	2.8	0.02 U
DOF-MW4	Oct-12	3 - 4'	199985	1269797	8.4	11 U	8.4	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	----	----	3.8 U	2.1	0.02 U
DOF-MW4	Oct-12	7 - 8'	199985	1269797	15	18	33	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	----	----	nd	3.9	0.03 U
DOF-MW4	Oct-12	10 - 11'	199985	1269797	17	27	44	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.1	2.3	----	----	5.4	6.3	0.04
DOF-MW5	Oct-12	3 - 4'	200064	1269721	23	22	45	3.7 U	3.7 U	3.7 U	3.7 U	3.7 U	3.7 U	3.7 U	----	----	3.7 U	2.3	0.02 U
DOF-MW5	Oct-12	7 - 8'	200064	1269721	22	25	47	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	----	----	3.8 U	1.9	0.02 U
DOF-MW6	Oct-12	3 - 5'	200248	1269827	19,000	1200 U	19000	19 U	19 U	19 U	19 U	130	160	180	----	----	470	2.6	0.04
DOF-MW6	Oct-12	6 - 8'	200248	1269827	12,000	1200 U	12000	20 U	20 U	20 U	20 U	260	390 U	1200	----	----	1460	2.3	0.02 U
DOF-MW6	Oct-12	9 - 10'	200248	1269827	34	40	74	4.0 U	4.0 U	4.0 U	4.0 U	9.9	12 U	32	----	----	41.9	4.2	0.04 U
DOF-MW7	Oct-12	3 - 4'	200184	1269970	970	820	1790	140 U	140 U	140 U	140 U	220	210 U	670	----	----	890	8.4	0.03
DOF-MW7	Oct-12	7 - 8'	200184	1269970	6.6 U	13 U	13 U	3.9 U	3.9 U	3.9 U	3.9 U	3.2	2.3	4.1	----	----	9.6	3.0	0.03
DOF-MW7	Oct-12	11 - 12'	200184	1269970	6.5 U	13 U	13 U	3.9 U	3.9 U	3.9 U	3.9 U	3.3	2.4	2.5	----	----	8.2	2.4	0.03 U
DOF-MW8	Oct-12	3 - 4'	200098	1270037	5.2	10 U	5	3.7 U	3.7 U	5.6 U	3.7 U	3.7 U	5.3	3.1	----	----	8.4	1.5	0.02 U
DOF-MW8	Oct-12	7 - 8'	200098	1270037	6.5 U	13 U	13 U	3.9 U	3.9 U	4.9 U	3.9 U	3.9 U	3.9 U	3.9 U	----	----	4.9 U	3.0	0.03
DOF-MW8	Oct-12	11 - 12'	200098	1270037	6.5 U	13 U	13 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	----	----	3.8 U	2.4	0.03 U
MW-Ap	Oct-15	9 - 10'	200173	1269797	7.0 U	14 U	14 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	----	----	3.9 U	2.5	0.03 U
MW-Bp	Oct-15	9 - 10'	200095	1269852	6.3 U	13 U	13 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	----	----	3.9 U	2.2	0.02 U
MW-Cp	Oct-15	9 - 10'	199995	1269943	11	25	36	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	----	----	3.8 U	4.1	0.03
MW-Du	Oct-15	9 - 10'	200273	1269723	16	32	48	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	----	----	3.9 U	3.0	0.03
MW-Du	Oct-15	15 - 17'	200273	1269723	6.1 U	12 U	12 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	----	----	3.8 U	1.1	0.02 U
MW-Ju	Oct-15	3 - 4'	200282	1270134	14,000	32,000	46000	120 U	120 U	120 U	120 U	19,000	15,000	5800	----	----	39800	49	0.10
MW-Ju	Oct-15	10 - 11'	200282	1270134	79	150	229	3.8 U	3.8 U	3.8 U	3.8 U	40	48	19	----	----	107	401	0.07
MW-Ju	Oct-15	15 - 16	200282	1270134	6.7 U	13 U	13 U	4.0 U	4.0 U	4.0 U	4.0 U	6.2	5.8	1.4 J	----	----	13.4	2.3	0.03 U

TABLE 1 - Embayment Sediment and Upland Soil Analytical Data

Location	Collection Date	Spl. Depth (feet)	North NAD83	East NAD83	Petroleum Hydrocarbons (mg/kg-dw)			Aroclor PCBs (ug/kg-dw)										Total Metals (mg/kg-dw)	
					DRO	RRO	DRO+RRO	1016	1221	1232	1242	1248	1254	1260	1262	1268	Total	Pb	Hg
SA-MW1	Apr-07	5-6.5	200268	1269944	15000	49000	64000	5000 U	10000 U	5000 U	51000	5000 U	18000	7500	-----	-----	76500	836	2.0
SA-MW1	Apr-07	12.5-13.5	200268	1269944	50 U	100 U	100 U	5 U	10 U	5 U	240	5 U	81	41	-----	-----	362	6.4	0.77
SA-MW2	Apr-07	7.5-8	200311	1270090	1000	3000	4000	25 U	49 U	25 U	100	25 U	65	46	-----	-----	211	77	0.02
SA-MW2	Apr-07	10-11.5	200311	1270090	61	210	271	49 U	97 U	49 U	400	49 U	160	210	-----	-----	770	25	0.06
SA-MW2	Apr-07	15-16.5	200311	1270090	1000	2100	3100	500 U	990 U	500 U	6300	500 U	2800	2800	-----	-----	11900	204	0.32
SA-MW3	Apr-07	10-11.5	200249	1270174	50 U	100 U	100 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	-----	-----	5 U	1.8	0.02
HC-B1	Sep-86	1	200304	1270043	-----	-----	-----	-----	-----	-----	-----	-----	1930	-----	-----	-----	3030	57	0.05
HC-B1	Sep-86	5-7	200304	1270043	-----	-----	-----	-----	-----	-----	-----	-----	4370	-----	-----	-----	6580	158	0.19
HC-B1	Sep-86	7-8.5	200304	1270043	-----	-----	-----	-----	-----	-----	-----	-----	3480	-----	-----	-----	5484	171	0.22
HC-B1	Sep-86	8.5-10.5	200304	1270043	-----	-----	-----	-----	-----	-----	-----	-----	3420	-----	-----	-----	5070	52	0.06
HC-B2	Sep-86	1	200174	1270080	-----	-----	-----	-----	-----	-----	-----	-----	1050	-----	-----	-----	1670	7	0.02
HC-B2	Sep-86	5-7	200174	1270080	-----	-----	-----	-----	-----	-----	-----	-----	12400	-----	-----	-----	15300	444	0.26
HC-B2	Sep-86	7-8.5	200174	1270080	-----	-----	-----	-----	-----	-----	-----	-----	1670	-----	-----	-----	5990	158	2.2
HC-B2	Sep-86	8.5-10	200174	1270080	-----	-----	-----	-----	-----	-----	-----	-----	2310	-----	-----	-----	3070	28	0.06
HC-B4	Sep-86	2-3	199867	1269934	-----	-----	-----	-----	-----	-----	-----	-----	420	-----	-----	-----	740	23	0.12
HC-B4	Sep-86	4.5-6	199867	1269934	-----	-----	-----	-----	-----	-----	-----	-----	30 U	-----	-----	-----	30 U	1	0.02
HC-B4	Sep-86	7-8.5	199867	1269934	-----	-----	-----	-----	-----	-----	-----	-----	30 U	-----	-----	-----	30 U	1	0.01
HC-B5	Sep-86	1	199983	1269979	-----	-----	-----	-----	-----	-----	-----	-----	30 U	-----	-----	-----	30 U	1	0.02
HC-B5	Sep-86	2-3.5	199983	1269979	-----	-----	-----	-----	-----	-----	-----	-----	30 U	-----	-----	-----	30 U	1	0.03
HC-B5	Sep-86	5-6.5	199983	1269979	-----	-----	-----	-----	-----	-----	-----	-----	30 U	-----	-----	-----	30 U	2	0.02
HC-B5	Sep-86	7-8.5	199983	1269979	-----	-----	-----	-----	-----	-----	-----	-----	30 U	-----	-----	-----	30 U	nd	0.02

Notes: DRO - Diesel Range Organics
RRO - Heavy Oil Range Organics
U - Not detected at indicated concentration
J - Estimated Concentration
H - Analyzed outside recommended holding time
nd - Not detected

TABLE 1 - Embayment Sediment and Upland Soil Analytical Data

Location	Collection Date	Spl. Depth (feet)	TCLP RCRA Metals (mg/l) (DW Threshold)							
			As	Ba	Cd	Cr	Pb	Se	Ag	Hg
Sediment Samples			(5)	(100)	(1)	(5)	(5)	(1)	(5)	(0.2)
DSS-01	Dec-12	0.32	----	----	----	----	----	----	----	----
DSS-02	Jul-12	0.32	----	----	----	----	----	----	----	----
DSS-03	Jul-12	0.32	----	----	----	----	----	----	----	----
DSS-04	Jul-12	0.32	----	----	----	----	----	----	----	----
DSS-05	Jul-12	0.32	----	----	----	----	----	----	----	----
DSS-06	Jul-12	0.32	----	----	----	----	----	----	----	----
DSS-07	Jul-12	0.32	----	----	----	----	----	----	----	----
DSS-08	Jul-12	0.32	----	----	----	----	----	----	----	----
DSS-09	Jul-12	0.32	----	----	----	----	----	----	----	----
DSS-10	Jul-12	0.32	----	----	----	----	----	----	----	----
DSS-11	Jul-12	0.32	----	----	----	----	----	----	----	----
DSS-12	Jul-12	0.32	----	----	----	----	----	----	----	----
DSS-13	Jul-12	0.32	----	----	----	----	----	----	----	----
DSS-14	Jul-12	0.32	----	----	----	----	----	----	----	----
DSS-15	Jul-12	0.32	----	----	----	----	----	----	----	----
DSS-16	Jul-12	0.32	----	----	----	----	----	----	----	----
DSS-17	Jul-12	0.32	----	----	----	----	----	----	----	----
DSS-18	Jul-12	0.32	----	----	----	----	----	----	----	----
DSS-19	Jul-12	0.32	----	----	----	----	----	----	----	----
DSS-20	Jul-12	0.32	----	----	----	----	----	----	----	----
DSS-21	Jul-12	0.32	----	----	----	----	----	----	----	----
DSS-22	Jul-12	0.32	----	----	----	----	----	----	----	----
DSS-23	Jul-12	0.32	----	----	----	----	----	----	----	----
DSS-24	Jul-12	0.32	----	----	----	----	----	----	----	----
DSS-25	Jul-12	0.32	----	----	----	----	----	----	----	----
DSS-26	Sep-14	0.32	----	----	----	----	----	----	----	----
DSS-27	Jul-12	0.32	----	----	----	----	----	----	----	----
DSS-28	Jul-12	0.32	----	----	----	----	----	----	----	----
DSS-29	Jul-12	0.32	----	----	----	----	----	----	----	----
DSS-30	Jul-12	0.32	----	----	----	----	----	----	----	----
SED1	Sep-14	0.32	0.2 U	1.4	0.01 U	0.03	0.10 U	0.2 U	0.02 U	0.0001 U
SED2	Sep-14	0.32	0.2 U	0.64	0.01 U	0.02 U	0.10 U	0.2 U	0.02 U	0.0001 U
SED4	Sep-14	0.32	0.2 U	0.02	0.01 U	0.02 U	0.10 U	0.2 U	0.02 U	0.0001 U
LDWSS84	Sep-14	0.32	0.2 U	0.06	0.01 U	0.02 U	0.2	0.2 U	0.02 U	0.0001 U
B5a2	Sep-14	0.32	0.2 U	0.18	0.01 U	0.02 U	0.6	0.2 U	0.02 U	0.0001 U
HS-1	Oct-20	0.5-1.0	0.06 J	0.38	0.01 U	0.01	0.10 U	0.25 U	0.02 U	0.00010 U
HS-4**	Oct-20	0-0.8	----	----	----	----	----	----	----	----
HS-5	Oct-20	0-1	----	----	----	----	----	----	----	----
HS-6*	Oct-20	2.0-3.0	0.12 J	0.25	0.01 U	0.03 U	0.007	0.25 U	0.02 U	0.00010 U
HS-7	Oct-20	3.0-4.0	0.08 J	0.51	0.01 U	0.01	0.32	0.25 U	0.02 U	0.00005 J
HS-8**	Oct-20	2.5-3.5	----	----	----	----	----	----	----	----

TABLE 1 - Embayment Sediment and Upland Soil Analytical Data

Location	Collection Date	Spl. Depth (feet)	TCLP RCRA Metals (mg/l) (DW Threshold)							
			As	Ba	Cd	Cr	Pb	Se	Ag	Hg
HS-9	Oct-20	0-1	0.03 J	1.1	0.003 J	0.04	0.02	0.25 U	0.02 U	0.00010 U
HS-12	Oct-20	0-1	0.10 J	2.3	0.0007 J	0.003 J	0.10 U	0.25 U	0.02 U	0.00010 U
HS-13**	Oct-20	0-1	----	----	----	----	----	----	----	----
HS-14**	Oct-20	0-1	----	----	----	----	----	----	----	----
HS-15	Oct-20	0-1	0.25 U	0.31	0.005 J	0.09	0.01	0.25 U	0.02 U	0.00010 U
HS-17**	Oct-20	0-1	----	----	----	----	----	----	----	----
HS-21	Oct-20	0-1	0.10 J	1.7	0.01 U	0.008 J	0.10 U	0.25 U	0.02 U	0.00009 J
HS-22**	Oct-20	0-1	----	----	----	----	----	----	----	----
HS-23**	Oct-20	0-1	----	----	----	----	----	----	----	----
HS-29	Oct-20	0-1	0.04 J	0.72	0.002 J	0.10	0.04 J	0.25 U	0.02 U	0.00010 U
HS-30**	Oct-20	0-1	----	----	----	----	----	----	----	----
HS-34	Oct-20	0-1	0.08 J	0.78	0.007 J	0.03	2.15	0.25 U	0.02 U	0.00010 U
HS-36**	Oct-20	0-1	----	----	----	----	----	----	----	----
HS-37*	Oct-20	0-1	----	----	----	----	----	----	----	----
HS-38	Oct-20	0-1	0.25 U	1.4	0.02	0.05	4.5	0.05 J	0.02 U	0.0004
HS-39*	Oct-20	0-1	----	----	----	----	----	----	----	----
HS-40**	Oct-20	0-1	----	----	----	----	----	----	----	----
HSA1*	Oct-20	1-2	----	----	----	----	----	----	----	----
HSA1*	Oct-20	2-3	----	----	----	----	----	----	----	----
HSA1	Oct-20	3-4	0.25 U	0.1	0.003 J	0.01 J	0.02 J	0.25 U	0.02 U	0.00010 U
HSA1*	Oct-20	4.5-5	----	----	----	----	----	----	----	----
HSA2**	Oct-20	2-3	----	----	----	----	----	----	----	----
HSA2	Oct-20	3-4	0.05 J	5.9	0.002 J	0.01 J	0.22	0.25 U	0.02 U	0.00010 U
HSA2**	Oct-20	4-5	----	----	----	----	----	----	----	----
HSA3**	Oct-20	2-3	----	----	----	----	----	----	----	----
HSA3	Oct-20	3-3.5	0.02 J	0.82	0.006 J	0.05	3.0	0.25 U	0.02 U	0.00010 U
HSA3*	Oct-20	5-6	----	----	----	----	----	----	----	----
HSA4	Oct-20	2-3	0.09 J	4.8	0.0007 J	0.01 J	1.0	0.25 U	0.02 U	0.00010 U
HSA4	Oct-20	3-4	0.09	10.7	0.01 U	0.02 J	1.2	0.25 U	0.02 U	0.00010 U
HSA4**	Oct-20	4-5	----	----	----	----	----	----	----	----
HSA4**	Oct-20	5-6	----	----	----	----	----	----	----	----
HSA4*	Oct-20	6-7	----	----	----	----	----	----	----	----
Core A	Nov-12	1.3	----	----	----	----	----	----	----	----
Core A	Nov-12	3.9	----	----	----	----	----	----	----	----
Core A	Nov-12	5.1	----	----	----	----	----	----	----	----
Core A	Nov-12	6.3	----	----	----	----	----	----	----	----
Core A	Nov-12	7.2	----	----	----	----	----	----	----	----
Core B	Nov-12	1.1	----	----	----	----	----	----	----	----
Core B	Nov-12	3.3	----	----	----	----	----	----	----	----
Core B	Nov-12	4.4	----	----	----	----	----	----	----	----
Core B	Nov-12	5.5	----	----	----	----	----	----	----	----
Core B	Nov-12	6.6	----	----	----	----	----	----	----	----

TABLE 1 - Embayment Sediment and Upland Soil Analytical Data

Location	Collection Date	Spl. Depth (feet)	TCLP RCRA Metals (mg/l) (DW Threshold)							
			As	Ba	Cd	Cr	Pb	Se	Ag	Hg
Core C	Nov-12	2.3	----	----	----	----	----	----	----	----
Core C	Nov-12	3.3	----	----	----	----	----	----	----	----
Core C	Nov-12	4.4	----	----	----	----	----	----	----	----
Core D	Nov-12	2.1	----	----	----	----	----	----	----	----
Core D	Nov-12	3.8	----	----	----	----	----	----	----	----
Core D	Nov-12	5.3	----	----	----	----	----	----	----	----
Core D	Nov-12	6.7	----	----	----	----	----	----	----	----
Core F	Nov-12	1.7	----	----	----	----	----	----	----	----
Core F	Nov-12	4.5	----	----	----	----	----	----	----	----
Core F	Nov-12	5.8	----	----	----	----	----	----	----	----
Core F	Nov-12	8.3	----	----	----	----	----	----	----	----
Core F	Nov-12	9.7	----	----	----	----	----	----	----	----
Core G	Nov-12	3	----	----	----	----	----	----	----	----
Core G	Nov-12	5.1	----	----	----	----	----	----	----	----
Core G	Nov-12	6.8	----	----	----	----	----	----	----	----
Core H	Nov-12	1.7	----	----	----	----	----	----	----	----
Core H	Nov-12	3.3	----	----	----	----	----	----	----	----
Core H	Nov-12	4.7	----	----	----	----	----	----	----	----
Core I	Nov-12	2.6	----	----	----	----	----	----	----	----
Core I	Nov-12	4.2	----	----	----	----	----	----	----	----
Core I	Nov-12	5.9	----	----	----	----	----	----	----	----
Core I	Nov-12	7.8	----	----	----	----	----	----	----	----
Core J	Nov-12	4.9	----	----	----	----	----	----	----	----
Core J	Nov-12	6.8	----	----	----	----	----	----	----	----
Core J	Nov-12	8.5	----	----	----	----	----	----	----	----
Core J	Nov-12	10.4	----	----	----	----	----	----	----	----
Core K	Nov-12	2.2	----	----	----	----	----	----	----	----
Core K	Nov-12	3.8	----	----	----	----	----	----	----	----
Core K	Nov-12	5.5	----	----	----	----	----	----	----	----
Core K	Nov-12	7	----	----	----	----	----	----	----	----
Core L	Nov-12	1.9	----	----	----	----	----	----	----	----
Core L	Nov-12	3.5	----	----	----	----	----	----	----	----
Core L	Nov-12	5	----	----	----	----	----	----	----	----
Core M	Nov-12	0.6	----	----	----	----	----	----	----	----
Core M	Nov-12	1.6	----	----	----	----	----	----	----	----
Core M	Nov-12	2.7	----	----	----	----	----	----	----	----
LDW-SC40	Feb-06	0-1.3	----	----	----	----	----	----	----	----
LDW-SC40	Feb-06	1.3-2	----	----	----	----	----	----	----	----
LDW-SC40	Feb-06	2-4	----	----	----	----	----	----	----	----

TABLE 1 - Embayment Sediment and Upland Soil Analytical Data

Location	Collection Date	Spl. Depth (feet)	TCLP RCRA Metals (mg/l) (DW Threshold)							
			As	Ba	Cd	Cr	Pb	Se	Ag	Hg
Upland Soil Samples										
LP-1	Oct-12	3 - 5'	----	----	----	----	----	----	----	----
LP-1	Oct-12	6.5 - 8'	----	----	----	----	----	----	----	----
LP-1	Oct-12	10.5 - 12'	----	----	----	----	----	----	----	----
LP-2	Oct-12	3 - 5'	----	----	----	----	----	----	----	----
LP-2	Oct-12	5.5 - 7.5'	----	----	----	----	----	----	----	----
LP-2	Oct-12	8 - 10'	----	----	----	----	----	----	----	----
LP-3	Oct-12	3 - 5'	----	----	----	----	----	----	----	----
LP-3	Oct-12	6 - 8'	----	----	----	----	----	----	----	----
LP-3	Oct-12	10 - 12'	----	----	----	----	----	----	----	----
LP-3	Oct-12	15 - 16'	----	----	----	----	----	----	----	----
LP3-10N	Jan-21	2-3	----	----	----	----	----	----	----	----
LP3-10N	Jan-21	5-7	----	----	----	----	----	----	----	----
LP3-10N	Jan-21	10-11	----	----	----	----	----	----	----	----
LP3-20N	Feb-21	1.5-2.5	----	----	----	----	----	----	----	----
LP3-20N	Feb-21	5.5-6.5	----	----	----	----	----	----	----	----
LP3-20N	Feb-21	10.5-11.5	----	----	----	----	----	----	----	----
LP3-10S	Jan-21	5-5.5	----	----	----	----	----	----	----	----
LP3-10S	Jan-21	5.5-6.5	0.25 U	1.6	0.003 J	0.051	2.8	0.099 J	0.015 U	0.0001 HU
LP3-10S	Jan-21	10-11	----	----	----	----	----	----	----	----
LP3-20S	Feb-21	5-6	----	----	----	----	----	----	----	----
LP3-20S	Feb-21	6.2-7.2	----	----	----	----	----	----	----	----
LP3-20S	Feb-21	10-11	----	----	----	----	----	----	----	----
LP3-10W	Jan-21	2-3	----	----	----	----	----	----	----	----
LP3-10W	Jan-21	5-7	----	----	----	----	----	----	----	----
LP3-10W	Jan-21	10-12	----	----	----	----	----	----	----	----
LP3-10W	Jan-21	13-14	----	----	----	----	----	----	----	----
LP3-20W	Feb-21	1.5-2.5	----	----	----	----	----	----	----	----
LP3-20W	Feb-21	5.5-6.5	0.25 U	1.1	0.01 U	0.025 U	0.257	0.113 J	0.015 U	0.0001 HU
LP3-20W	Feb-21	10.5-11.5	----	----	----	----	----	----	----	----
LP3-10E	Feb-21	1-2	----	----	----	----	----	----	----	----
LP3-10E	Feb-21	5-6	----	----	----	----	----	----	----	----
LP3-10E	Feb-21	10-11	----	----	----	----	----	----	----	----
LP-4	Oct-12	8 - 10'	----	----	----	----	----	----	----	----
LP-4	Oct-12	10 - 12'	----	----	----	----	----	----	----	----
LP-4	Oct-12	14 - 15'	----	----	----	----	----	----	----	----
LP-5	Jan-21	5.5-6.5	----	----	----	----	----	----	----	----
LP-5	Jan-21	7-8	----	----	----	----	----	----	----	----
LP-5	Jan-21	10-11	----	----	----	----	----	----	----	----
LP-6	Jan-21	6-7	----	----	----	----	----	----	----	----
LP-6	Jan-21	10-11	0.25 U	0.357	0.002 J	0.020 J	0.787	0.072 J	0.015 U	0.00002 JH
LP-6	Jan-21	11.5-12.5	----	----	----	----	----	----	----	----

TABLE 1 - Embayment Sediment and Upland Soil Analytical Data

Location	Collection Date	Spl. Depth (feet)	TCLP RCRA Metals (mg/l) (DW Threshold)							
			As	Ba	Cd	Cr	Pb	Se	Ag	Hg
LP-8	Jan-21	10-11	----	----	----	----	----	----	----	----
LP-8	Jan-21	12-13	----	----	----	----	----	----	----	----
LP-9	Jan-21	5-6	----	----	----	----	----	----	----	----
LP-9	Jan-21	8-9	----	----	----	----	----	----	----	----
LP-9	Jan-21	11-12	----	----	----	----	----	----	----	----
LP-10	Jan-21	5-6	----	----	----	----	----	----	----	----
LP-10	Jan-21	7-8	----	----	----	----	----	----	----	----
LP-10	Jan-21	10-11	----	----	----	----	----	----	----	----
LP-11	Jan-21	3-3.8	----	----	----	----	----	----	----	----
LP-11	Jan-21	5.5-6.5	----	----	----	----	----	----	----	----
LP-11	Jan-21	10.5-11.5	----	----	----	----	----	----	----	----
LP-12	Jan-21	5-6	----	----	----	----	----	----	----	----
LP-12	Jan-21	7-8	----	----	----	----	----	----	----	----
LP-12	Jan-21	10-11	----	----	----	----	----	----	----	----
LP-13	Jan-21	5-6	----	----	----	----	----	----	----	----
LP-13	Jan-21	10-11	----	----	----	----	----	----	----	----
LP-13	Jan-21	12-13	----	----	----	----	----	----	----	----
LP-14	Jan-21	5-6	----	----	----	----	----	----	----	----
LP-14	Jan-21	6.5-7.5	----	----	----	----	----	----	----	----
LP-14	Jan-21	10-11	----	----	----	----	----	----	----	----
LP-15	Jan-21	5-6	----	----	----	----	----	----	----	----
LP-15	Jan-21	7-8	----	----	----	----	----	----	----	----
LP-15	Jan-21	13-14	----	----	----	----	----	----	----	----
LP-16	Jan-21	5.5-6.5	----	----	----	----	----	----	----	----
LP-16	Jan-21	7-8	----	----	----	----	----	----	----	----
LP-16	Jan-21	10-11	----	----	----	----	----	----	----	----
LP-17	Jan-21	5.5-6.5	----	----	----	----	----	----	----	----
LP-17	Jan-21	10-11	----	----	----	----	----	----	----	----
LP-17	Jan-21	13.5-14.5	----	----	----	----	----	----	----	----
LP-18	Jan-21	5-6	----	----	----	----	----	----	----	----
LP-18	Jan-21	7-8	----	----	----	----	----	----	----	----
LP-18	Jan-21	10-11	----	----	----	----	----	----	----	----
P-1	Jul-08	2.5-3	----	----	----	----	----	----	----	----
P-2	Jul-08	5-6.5	----	----	----	----	----	----	----	----
P-2	Jul-08	10-10.5	----	----	----	----	----	----	----	----
P-2	Jul-08	15-15.5	----	----	----	----	----	----	----	----
P-3	Jul-08	5-5.5	----	----	----	----	----	----	----	----
P-3	Jul-08	10-10.5	----	----	----	----	----	----	----	----
P-3	Jul-08	15-15.5	----	----	----	----	----	----	----	----
P-4	Jul-08	5-5.5	----	----	----	----	----	----	----	----
P-4	Jul-08	10-10.5	----	----	----	----	----	----	----	----
P-4	Jul-08	15-15.5	----	----	----	----	----	----	----	----

TABLE 1 - Embayment Sediment and Upland Soil Analytical Data

Location	Collection Date	Spl. Depth (feet)	TCLP RCRA Metals (mg/l) (DW Threshold)							
			As	Ba	Cd	Cr	Pb	Se	Ag	Hg
P-5	Jul-08	6-6.5	----	----	----	----	----	----	----	----
P-5	Jul-08	10-10.5	----	----	----	----	----	----	----	----
P-5	Jul-08	15-15.5	----	----	----	----	----	----	----	----
P-6	Jul-08	5-5.5	----	----	----	----	----	----	----	----
P-6	Jul-08	10-10.5	----	----	----	----	----	----	----	----
P-6	Jul-08	15-15.5	----	----	----	----	----	----	----	----
P-7	Jul-08	5-5.5	----	----	----	----	----	----	----	----
P-7	Jul-08	10-10.5	----	----	----	----	----	----	----	----
P-7	Jul-08	15-15.5	----	----	----	----	----	----	----	----
P-8	Jul-08	0.5-1	----	----	----	----	----	----	----	----
P-8	Jul-08	5-5.5	----	----	----	----	----	----	----	----
P-8	Jul-08	10-10.5	----	----	----	----	----	----	----	----
P-8	Jul-08	15-15.5	----	----	----	----	----	----	----	----
P8-10N	Jan-21	0.5-1.5	----	----	----	----	----	----	----	----
P8-10N	Jan-21	5-6	----	----	----	----	----	----	----	----
P8-20N	Jan-21	0.5-1.5	0.25 U	2.2	0.012	1.4	6.7	0.047 J	0.015 U	0.0001 UH
P8-20N	Jan-21	2-3	----	----	----	----	----	----	----	----
P8-20N	Jan-21	5-6	----	----	----	----	----	----	----	----
P8-30N	Jan-21	0.5-1.5	----	----	----	----	----	----	----	----
P8-30N	Jan-21	5-6	----	----	----	----	----	----	----	----
P8-10S	Jan-21	1-2	----	----	----	----	----	----	----	----
P8-10S	Jan-21	2-3	----	----	----	----	----	----	----	----
P8-10S	Jan-21	5-6	----	----	----	----	----	----	----	----
P8-10NW	Jan-21	0.5-1.5	----	----	----	----	----	----	----	----
P8-10NW	Jan-21	5-6	----	----	----	----	----	----	----	----
P8-20NW	Jan-21	0.5-1.5	----	----	----	----	----	----	----	----
P8-20NW	Jan-21	5-6	----	----	----	----	----	----	----	----
P8-30NW	Jan-21	0.5-1.5	----	----	----	----	----	----	----	----
P830NW	Jan-21	2-3	----	----	----	----	----	----	----	----
P8-30NW	Jan-21	5-6	----	----	----	----	----	----	----	----
P8-15SW	Jan-21	0.5-1.5	----	----	----	----	----	----	----	----
P8-15SW	Jan-21	5-6	----	----	----	----	----	----	----	----
P8-10SE	Jan-21	0.5-1.5	----	----	----	----	----	----	----	----
P8-10SE	Jan-21	2-3	----	----	----	----	----	----	----	----
P8-10SE	Jan-21	5-6	----	----	----	----	----	----	----	----
P8-10NE	Jan-21	0.5-1.5	0.25 U	11.7	0.212	0.007 J	2.8	0.211 J	0.015 U	0.0001 UH
P8-10NE	Jan-21	5-6	----	----	----	----	----	----	----	----
P8-7W	Jan-21	1-2	----	----	----	----	----	----	----	----
P8-7W	Jan-21	5-6	----	----	----	----	----	----	----	----
P8-10E	Jan-21	1-2	----	----	----	----	----	----	----	----
P8-10E	Jan-21	5-6	----	----	----	----	----	----	----	----
P-9	Jul-08	2-2.5	----	----	----	----	----	----	----	----

TABLE 1 - Embayment Sediment and Upland Soil Analytical Data

Location	Collection Date	Spl. Depth (feet)	TCLP RCRA Metals (mg/l) (DW Threshold)							
			As	Ba	Cd	Cr	Pb	Se	Ag	Hg
P-9	Jul-08	6-6.5	----	----	----	----	----	----	----	----
P-9	Jul-08	10-10.5	----	----	----	----	----	----	----	----
P-9	Jul-08	12-12.5	----	----	----	----	----	----	----	----
P-10	Jul-08	5-5.5	----	----	----	----	----	----	----	----
P-10	Jul-08	10-10.5	----	----	----	----	----	----	----	----
P-10	Jul-08	17.5-18	----	----	----	----	----	----	----	----
P-11	Nov-14	3 - 4.5'	----	----	----	----	----	----	----	----
P-11	Nov-14	9.5 - 11'	----	----	----	----	----	----	----	----
P-11	Nov-14	15 - 17'	----	----	----	----	----	----	----	----
P-12	Nov-14	3 - 4.5'	----	----	----	----	----	----	----	----
P-12	Nov-14	6 - 8'	----	----	----	----	----	----	----	----
P-12	Nov-14	9.8 - 11'	----	----	----	----	----	----	----	----
P-12	Nov-14	12 - 14'	----	----	----	----	----	----	----	----
P-12	Nov-14	15 - 17'	----	----	----	----	----	----	----	----
P-13	Nov-14	4 - 6'	----	----	----	----	----	----	----	----
P-13	Nov-14	6 -8'	----	----	----	----	----	----	----	----
P-13	Nov-14	9.5 - 11'	----	----	----	----	----	----	----	----
P-13	Nov-14	16.5 - 18'	----	----	----	----	----	----	----	----
P-14	Nov-14	3 - 5'	----	----	----	----	----	----	----	----
P-14	Nov-14	6 - 8'	----	----	----	----	----	----	----	----
P-14	Nov-14	10 - 11.5'	----	----	----	----	----	----	----	----
P-14	Nov-14	15 - 17'	----	----	----	----	----	----	----	----
P-15	Nov-14	3 - 5'	----	----	----	----	----	----	----	----
P-15	Nov-14	6 - 8'	----	----	----	----	----	----	----	----
P-15	Nov-14	8.5 - 10'	----	----	----	----	----	----	----	----
P-15	Nov-14	15 - 17'	----	----	----	----	----	----	----	----
P-16	Dec-14	3 - 4'	----	----	----	----	----	----	----	----
P-16	Dec-14	6 - 8'	----	----	----	----	----	----	----	----
P-16	Dec-14	9 - 10'	----	----	----	----	----	----	----	----
P-16	Dec-14	15 - 17'	----	----	----	----	----	----	----	----
P-17	Nov-14	4.5 - 6.5'	----	----	----	----	----	----	----	----
P-17	Nov-14	6.7 - 8'	----	----	----	----	----	----	----	----
P-17	Nov-14	9 - 11'	----	----	----	----	----	----	----	----
P-17	Nov-14	12 - 14'	----	----	----	----	----	----	----	----
P-17	Nov-14	15 - 17'	----	----	----	----	----	----	----	----
P-17	Nov-14	21 - 23'	----	----	----	----	----	----	----	----
P-18	Dec-14	3 - 5'	----	----	----	----	----	----	----	----
P-18	Dec-14	9 - 10'	----	----	----	----	----	----	----	----
P-18	Dec-14	12 - 14'	----	----	----	----	----	----	----	----
P-18	Dec-14	14 - 16'	----	----	----	----	----	----	----	----
P-18	Dec-14	21 - 23'	----	----	----	----	----	----	----	----
P-18	Dec-14	31 - 33'	----	----	----	----	----	----	----	----

TABLE 1 - Embayment Sediment and Upland Soil Analytical Data

Location	Collection Date	Spl. Depth (feet)	TCLP RCRA Metals (mg/l) (DW Threshold)							
			As	Ba	Cd	Cr	Pb	Se	Ag	Hg
P-18	Dec-14	41 - 43'	----	----	----	----	----	----	----	----
P-19	Dec-14	3 - 4'	----	----	----	----	----	----	----	----
P-19	Dec-14	9 - 10'	----	----	----	----	----	----	----	----
P-19	Dec-14	15 - 17'	----	----	----	----	----	----	----	----
P-19	Dec-14	21 - 23'	----	----	----	----	----	----	----	----
P-20	Nov-14	2 - 4'	----	----	----	----	----	----	----	----
P-20	Nov-14	9.5 - 11'	----	----	----	----	----	----	----	----
P-20	Nov-14	12 - 14'	----	----	----	----	----	----	----	----
P-20	Nov-14	15 - 17'	----	----	----	----	----	----	----	----
P-21	Dec-14	6 - 8'	----	----	----	----	----	----	----	----
P-21	Dec-14	12 - 14'	----	----	----	----	----	----	----	----
P-21	Dec-14	15 - 17'	----	----	----	----	----	----	----	----
P-21	Dec-14	21 - 23'	----	----	----	----	----	----	----	----
P-21	Dec-14	31 - 33'	----	----	----	----	----	----	----	----
P-22	Nov-14	3 - 4.5'	----	----	----	----	----	----	----	----
P-22	Nov-14	6 - 8'	----	----	----	----	----	----	----	----
P-22	Nov-14	9 - 11'	----	----	----	----	----	----	----	----
P-22	Nov-14	12 - 14'	----	----	----	----	----	----	----	----
P-22	Nov-14	15 - 17'	----	----	----	----	----	----	----	----
P-23	Nov-14	2 - 4'	----	----	----	----	----	----	----	----
P-23	Nov-14	9.5 - 11'	----	----	----	----	----	----	----	----
P-23	Nov-14	12 - 14'	----	----	----	----	----	----	----	----
P-23	Nov-14	15 - 17'	----	----	----	----	----	----	----	----
P-24	Nov-14	3 - 5'	----	----	----	----	----	----	----	----
P-24	Nov-14	9 - 10.5'	----	----	----	----	----	----	----	----
P-24	Nov-14	12 - 14'	----	----	----	----	----	----	----	----
P-24	Nov-14	15 - 17'	----	----	----	----	----	----	----	----
P-25	Nov-14	1 - 3'	----	----	----	----	----	----	----	----
P-25	Nov-14	9 - 11'	----	----	----	----	----	----	----	----
P-25	Nov-14	12 - 14'	----	----	----	----	----	----	----	----
P-25	Nov-14	15 - 17'	----	----	----	----	----	----	----	----
P-26	Nov-14	3 - 5'	----	----	----	----	----	----	----	----
P-26	Nov-14	6 - 8'	----	----	----	----	----	----	----	----
P-26	Nov-14	9 - 11'	----	----	----	----	----	----	----	----
P-26	Nov-14	15 - 17'	----	----	----	----	----	----	----	----
P-27	Nov-14	1 - 3'	----	----	----	----	----	----	----	----
P-27	Nov-14	6 - 8'	----	----	----	----	----	----	----	----
P-27	Nov-14	9 - 11'	----	----	----	----	----	----	----	----
P-27	Nov-14	15 - 17'	----	----	----	----	----	----	----	----
P-27	Nov-14	31 - 33'	----	----	----	----	----	----	----	----
P-28	Dec-14	3 - 5'	----	----	----	----	----	----	----	----
P-28	Dec-14	8.5 - 10'	----	----	----	----	----	----	----	----

TABLE 1 - Embayment Sediment and Upland Soil Analytical Data

Location	Collection Date	Spl. Depth (feet)	TCLP RCRA Metals (mg/l) (DW Threshold)							
			As	Ba	Cd	Cr	Pb	Se	Ag	Hg
P-28	Dec-14	15 - 17'	----	----	----	----	----	----	----	----
P-28	Dec-14	21 - 23'	----	----	----	----	----	----	----	----
P-28	Dec-14	31 - 33'	----	----	----	----	----	----	----	----
P-29	Dec-14	3 - 4'	----	----	----	----	----	----	----	----
P-29	Dec-14	6 - 8'	----	----	----	----	----	----	----	----
P-29	Dec-14	9 - 10'	----	----	----	----	----	----	----	----
P-29	Dec-14	15 - 17'	----	----	----	----	----	----	----	----
P-29	Dec-14	21 - 23'	----	----	----	----	----	----	----	----
P-29	Dec-14	31 - 33'	----	----	----	----	----	----	----	----
P-29	Dec-14	41 - 43'	----	----	----	----	----	----	----	----
P-29	Dec-14	49 - 50'	----	----	----	----	----	----	----	----
P-30	Dec-14	6 - 7'	----	----	----	----	----	----	----	----
P-30	Dec-14	9 - 10'	----	----	----	----	----	----	----	----
P-30	Dec-14	12.5 - 13.5	----	----	----	----	----	----	----	----
P-30	Dec-14	15 - 16.5'	----	----	----	----	----	----	----	----
P-30	Dec-14	21 - 23'	----	----	----	----	----	----	----	----
P-30	Dec-14	31 - 33'	----	----	----	----	----	----	----	----
P-30	Dec-14	41 - 43'	----	----	----	----	----	----	----	----
P-30	Dec-14	49 - 50'	----	----	----	----	----	----	----	----
P-31	Dec-14	3 - 4'	----	----	----	----	----	----	----	----
P-31	Dec-14	9 - 11'	----	----	----	----	----	----	----	----
P-31	Dec-14	15 - 17'	----	----	----	----	----	----	----	----
P-31	Dec-14	31 - 33'	----	----	----	----	----	----	----	----
P-32	Dec-14	16 - 17.5'	----	----	----	----	----	----	----	----
P-32	Dec-14	31 - 33'	----	----	----	----	----	----	----	----
P-33	Dec-14	15 - 17'	----	----	----	----	----	----	----	----
P-33	Dec-14	31 - 33'	----	----	----	----	----	----	----	----
PP-1	Nov-20	5-6	----	----	----	----	----	----	----	----
PP-1	Nov-20	7.5-8.5	----	----	----	----	----	----	----	----
PP-2	Nov-20	5-6	----	----	----	----	----	----	----	----
PP-2	Nov-20	6.5-7.5	----	----	----	----	----	----	----	----
PP-3	Nov-20	1-2	----	----	----	----	----	----	----	----
PP-3	Nov-20	5-6	----	----	----	----	----	----	----	----
PP-4	Oct-20	2.5	----	----	----	----	----	----	----	----
PP-4	Oct-20	7.5	----	----	----	----	----	----	----	----
PP-5	Nov-20	1.5-2.5	----	----	----	----	----	----	----	----
PP-5	Nov-20	8-9	----	----	----	----	----	----	----	----
PP-7	Nov-20	2-3	----	----	----	----	----	----	----	----
PP-7	Nov-20	7-8	----	----	----	----	----	----	----	----
PP-8*	Oct-20	2.5-3.5	----	----	----	----	----	----	----	----
PP-8	Oct-20	5.5-6.5	----	----	----	----	----	----	----	----
PP-8*	Oct-20	7.3-8.3	----	----	----	----	----	----	----	----

TABLE 1 - Embayment Sediment and Upland Soil Analytical Data

Location	Collection Date	Spl. Depth (feet)	TCLP RCRA Metals (mg/l) (DW Threshold)							
			As	Ba	Cd	Cr	Pb	Se	Ag	Hg
PP-8	Oct-20	10-11	----	----	----	----	----	----	----	----
PP-9	Oct-20	2-3	----	----	----	----	----	----	----	----
PP-9*	Oct-20	5-6	----	----	----	----	----	----	----	----
PP-9	Oct-20	7-8	----	----	----	----	----	----	----	----
PP-10	Oct-20	2-3	----	----	----	----	----	----	----	----
PP-10*	Oct-20	5-6	----	----	----	----	----	----	----	----
PP-10	Oct-20	7-8	----	----	----	----	----	----	----	----
PP-11	Oct-20	2-3	----	----	----	----	----	----	----	----
PP-11	Oct-20	6.5-7.5	----	----	----	----	----	----	----	----
PP-12	Oct-20	2.5-3.5	----	----	----	----	----	----	----	----
PP-12*	Oct-20	5-6	----	----	----	----	----	----	----	----
PP-12	Oct-20	6.5-7.5	----	----	----	----	----	----	----	----
PP-13	Nov-20	2-3	----	----	----	----	----	----	----	----
PP-13	Nov-20	5-6	----	----	----	----	----	----	----	----
PP-15	Nov-20	2-3	----	----	----	----	----	----	----	----
PP-15	Nov-20	5-6	----	----	----	----	----	----	----	----
PP-16	Nov-20	2-3	0.25 U	0.015 U	0.004 J	0.025 U	0.027	0.25 U	0.015 U	0.0001 UH
PP-16	Nov-20	5-6	----	----	----	----	----	----	----	----
PP-16	Nov-20	7.5-8.5	----	----	----	----	----	----	----	----
PP-17	Oct-20	1-2	----	----	----	----	----	----	----	----
PP-17*	Oct-20	5-6	----	----	----	----	----	----	----	----
PP-17	Oct-20	7.5-8.5	----	----	----	----	----	----	----	----
PP-18*	Oct-20	2-3	----	----	----	----	----	----	----	----
PP-18	Oct-20	5-6	----	----	----	----	----	----	----	----
PP-18*	Oct-20	7-8	----	----	----	----	----	----	----	----
PP-18	Oct-20	10-11	----	----	----	----	----	----	----	----
PP-19	Oct-20	2-3	----	----	----	----	----	----	----	----
PP-19*	Oct-20	5-6	----	----	----	----	----	----	----	----
PP-19	Oct-20	7-8	----	----	----	----	----	----	----	----
PP-20	Oct-20	5-6.5	----	----	----	----	----	----	----	----
PP-20	Oct-20	10-11	----	----	----	----	----	----	----	----
PP-21	Oct-20	2-3	----	----	----	----	----	----	----	----
PP-21	Oct-20	6.5-7.5	----	----	----	----	----	----	----	----
PP-22	Oct-20	2-3	----	----	----	----	----	----	----	----
PP-22*	Oct-20	5-6	----	----	----	----	----	----	----	----
PP-22	Oct-20	7-8	----	----	----	----	----	----	----	----
PP-23	Oct-20	1-2	----	----	----	----	----	----	----	----
PP-23*	Oct-20	5-6	----	----	----	----	----	----	----	----
PP-23	Oct-20	7.5-8.5	----	----	----	----	----	----	----	----
PP-24	Oct-20	1.5-2.5	----	----	----	----	----	----	----	----
PP-24*	Oct-20	5-6	----	----	----	----	----	----	----	----
PP-24	Oct-20	7.5-8.5	----	----	----	----	----	----	----	----

TABLE 1 - Embayment Sediment and Upland Soil Analytical Data

Location	Collection Date	Spl. Depth (feet)	TCLP RCRA Metals (mg/l) (DW Threshold)							
			As	Ba	Cd	Cr	Pb	Se	Ag	Hg
PP-25	Oct-20	7-8	----	----	----	----	----	----	----	----
PP-25	Oct-20	10-11	----	----	----	----	----	----	----	----
PP-26	Oct-20	7.5-8.5	----	----	----	----	----	----	----	----
PP-26*	Oct-20	10-11	----	----	----	----	----	----	----	----
PP-26	Oct-20	12-13	----	----	----	----	----	----	----	----
PP-27*	Oct-20	1-2	----	----	----	----	----	----	----	----
PP-27	Oct-20	5-6	----	----	----	----	----	----	----	----
PP-27	Oct-20	10-11	----	----	----	----	----	----	----	----
PP-28	Oct-20	2-3	----	----	----	----	----	----	----	----
PP-28*	Oct-20	5-6	----	----	----	----	----	----	----	----
PP-28	Oct-20	10-11	----	----	----	----	----	----	----	----
PP-28*	Oct-20	12-13	----	----	----	----	----	----	----	----
PP-28	Oct-20	13-14	----	----	----	----	----	----	----	----
PP-30	Oct-20	1-2	----	----	----	----	----	----	----	----
PP-30	Oct-20	5-6	----	----	----	----	----	----	----	----
PP-30	Oct-20	12-13	----	----	----	----	----	----	----	----
PP-31	Oct-20	1.5-2.5	----	----	----	----	----	----	----	----
PP-31*	Oct-20	5-6	----	----	----	----	----	----	----	----
PP-31	Oct-20	6.5-7.5	----	----	----	----	----	----	----	----
PP-31*	Oct-20	10-11	----	----	----	----	----	----	----	----
PP-31*	Oct-20	12-13	----	----	----	----	----	----	----	----
PP-32	Oct-20	5.5-6.5	----	----	----	----	----	----	----	----
PP-32	Oct-20	10-11	----	----	----	----	----	----	----	----
PP-33	Oct-20	2-3	----	----	----	----	----	----	----	----
PP-33	Oct-20	5-6	----	----	----	----	----	----	----	----
PP-33	Oct-20	12-13	----	----	----	----	----	----	----	----
PP-34*	Oct-20	1-2	----	----	----	----	----	----	----	----
PP-34	Oct-20	5-6	----	----	----	----	----	----	----	----
PP-34	Oct-20	10-11	----	----	----	----	----	----	----	----
PP-35*	Oct-20	1.7-2	----	----	----	----	----	----	----	----
PP-35	Oct-20	5-6	----	----	----	----	----	----	----	----
PP-35	Oct-20	10-11	----	----	----	----	----	----	----	----
PP-35*	Oct-20	12-13	----	----	----	----	----	----	----	----
PP-35	Oct-20	15-16	----	----	----	----	----	----	----	----
PP-35	Oct-20	17-18	----	----	----	----	----	----	----	----
PP-36	Oct-20	1-2	----	----	----	----	----	----	----	----
PP-36	Oct-20	5-6	----	----	----	----	----	----	----	----
PP-36	Oct-20	10-11	----	----	----	----	----	----	----	----
PP-37	Oct-20	1.5-2.5	----	----	----	----	----	----	----	----
PP-37	Oct-20	10-11	----	----	----	----	----	----	----	----
PP-37*	Oct-20	12-13	----	----	----	----	----	----	----	----
PP-37*	Oct-20	17-18	----	----	----	----	----	----	----	----

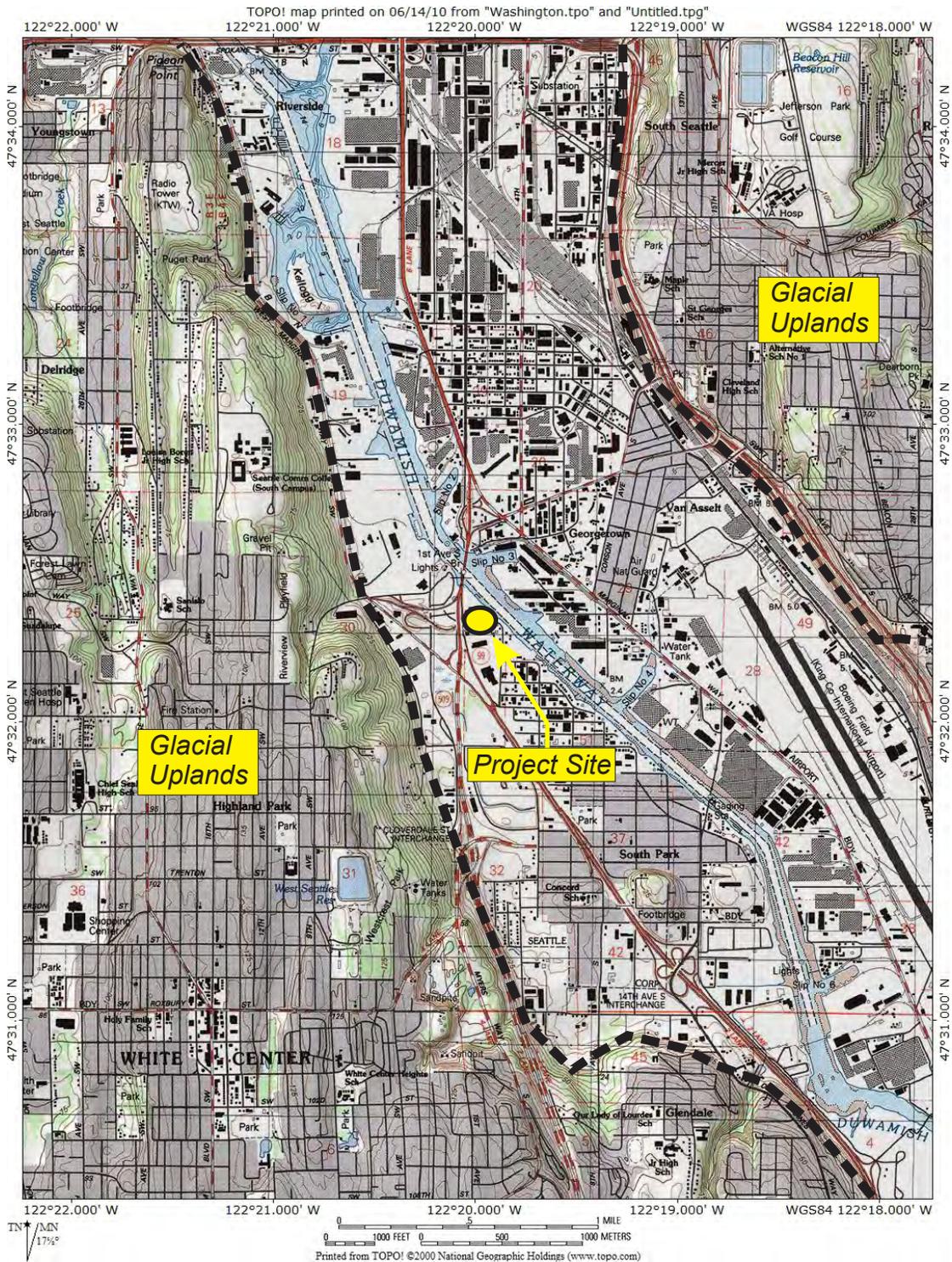
TABLE 1 - Embayment Sediment and Upland Soil Analytical Data

Location	Collection Date	Spl. Depth (feet)	TCLP RCRA Metals (mg/l) (DW Threshold)							
			As	Ba	Cd	Cr	Pb	Se	Ag	Hg
PP-38	Oct-20	1.5-2.5	----	----	----	----	----	----	----	----
PP-38	Oct-20	5-6	----	----	----	----	----	----	----	----
PP-38	Oct-20	10-11	----	----	----	----	----	----	----	----
PP-38*	Oct-20	12.5-13.5	----	----	----	----	----	----	----	----
PP-38*	Oct-20	16-17	----	----	----	----	----	----	----	----
PP-39	Oct-20	2-3	----	----	----	----	----	----	----	----
PP-39	Oct-20	5-6	----	----	----	----	----	----	----	----
PP-39	Oct-20	7-8	----	----	----	----	----	----	----	----
PP-39	Oct-20	10-11	----	----	----	----	----	----	----	----
PP-40*	Oct-20	2-3	----	----	----	----	----	----	----	----
PP-40	Oct-20	5-6	----	----	----	----	----	----	----	----
PP-40	Oct-20	10-11	----	----	----	----	----	----	----	----
DOF-MW1	Oct-12	4 - 5'	----	----	----	----	----	----	----	----
DOF-MW1	Oct-12	6.5 - 7.5'	----	----	----	----	----	----	----	----
DOF-MW1	Oct-12	11 - 12'	----	----	----	----	----	----	----	----
DOF-MW2	Oct-12	2 - 3'	----	----	----	----	----	----	----	----
DOF-MW2	Oct-12	8 - 9'	----	----	----	----	----	----	----	----
DOF-MW2	Oct-12	12 - 13'	----	----	----	----	----	----	----	----
DOF-MW3	Oct-12	2 - 4'	----	----	----	----	----	----	----	----
DOF-MW3	Oct-12	7 - 8'	----	----	----	----	----	----	----	----
DOF-MW4	Oct-12	3 - 4'	----	----	----	----	----	----	----	----
DOF-MW4	Oct-12	7 - 8'	----	----	----	----	----	----	----	----
DOF-MW4	Oct-12	10 - 11'	----	----	----	----	----	----	----	----
DOF-MW5	Oct-12	3 - 4'	----	----	----	----	----	----	----	----
DOF-MW5	Oct-12	7 - 8'	----	----	----	----	----	----	----	----
DOF-MW6	Oct-12	3 - 5'	----	----	----	----	----	----	----	----
DOF-MW6	Oct-12	6 - 8'	----	----	----	----	----	----	----	----
DOF-MW6	Oct-12	9 - 10'	----	----	----	----	----	----	----	----
DOF-MW7	Oct-12	3 - 4'	----	----	----	----	----	----	----	----
DOF-MW7	Oct-12	7 - 8'	----	----	----	----	----	----	----	----
DOF-MW7	Oct-12	11 - 12'	----	----	----	----	----	----	----	----
DOF-MW8	Oct-12	3 - 4'	----	----	----	----	----	----	----	----
DOF-MW8	Oct-12	7 - 8'	----	----	----	----	----	----	----	----
DOF-MW8	Oct-12	11 - 12'	----	----	----	----	----	----	----	----
MW-Ap	Oct-15	9 - 10'	----	----	----	----	----	----	----	----
MW-Bp	Oct-15	9 - 10'	----	----	----	----	----	----	----	----
MW-Cp	Oct-15	9 - 10'	----	----	----	----	----	----	----	----
MW-Du	Oct-15	9 - 10'	----	----	----	----	----	----	----	----
MW-Du	Oct-15	15 - 17'	----	----	----	----	----	----	----	----
MW-Ju	Oct-15	3 - 4'	----	----	----	----	----	----	----	----
MW-Ju	Oct-15	10 - 11'	----	----	----	----	----	----	----	----
MW-Ju	Oct-15	15 - 16'	----	----	----	----	----	----	----	----

TABLE 1 - Embayment Sediment and Upland Soil Analytical Data

Location	Collection Date	Spl. Depth (feet)	TCLP RCRA Metals (mg/l) (DW Threshold)							
			As	Ba	Cd	Cr	Pb	Se	Ag	Hg
SA-MW1	Apr-07	5-6.5	----	----	----	----	----	----	----	----
SA-MW1	Apr-07	12.5-13.5	----	----	----	----	----	----	----	----
SA-MW2	Apr-07	7.5-8	----	----	----	----	----	----	----	----
SA-MW2	Apr-07	10-11.5	----	----	----	----	----	----	----	----
SA-MW2	Apr-07	15-16.5	----	----	----	----	----	----	----	----
SA-MW3	Apr-07	10-11.5	----	----	----	----	----	----	----	----
HC-B1	Sep-86	1	----	----	----	----	----	----	----	----
HC-B1	Sep-86	5-7	----	----	----	----	----	----	----	----
HC-B1	Sep-86	7-8.5	----	----	----	----	----	----	----	----
HC-B1	Sep-86	8.5-10.5	----	----	----	----	----	----	----	----
HC-B2	Sep-86	1	----	----	----	----	----	----	----	----
HC-B2	Sep-86	5-7	----	----	----	----	----	----	----	----
HC-B2	Sep-86	7-8.5	----	----	----	----	----	----	----	----
HC-B2	Sep-86	8.5-10	----	----	----	----	----	----	----	----
HC-B4	Sep-86	2-3	----	----	----	----	----	----	----	----
HC-B4	Sep-86	4.5-6	----	----	----	----	----	----	----	----
HC-B4	Sep-86	7-8.5	----	----	----	----	----	----	----	----
HC-B5	Sep-86	1	----	----	----	----	----	----	----	----
HC-B5	Sep-86	2-3.5	----	----	----	----	----	----	----	----
HC-B5	Sep-86	5-6.5	----	----	----	----	----	----	----	----
HC-B5	Sep-86	7-8.5	----	----	----	----	----	----	----	----

DRO - Diesel Range Organics
RRO - Heavy Oil Range Organics
U - Not detected at indicated concentration
J - Estimated Concentration
H - Analyzed outside recommended holding time
nd - Not detected
 - Exceeds TCLP DW Threshold criteria



ICS/NW Cooprage Site

Vicinity Map

SUM-008-00 (ICS)

June 2010

Dalton, Olmsted & Fuglevand, Inc.

FIGURE

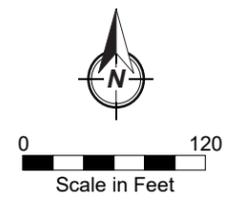
1

PLOT TIME: 2/23/2018 8:40 AM MOD TIME: 2/23/2018 12:10 PM USER: Lee Barras DWG: D:\Projects\ICS-NW Cooperage\Figures\2018-02\2018-02-23 ICS MW2CDR.dwg



- - - Property Boundary
- Hot-Spot Characterization Focus Area

Image: Google Maps Pro
Date: 05-22-17



Ref: 2018 PropertiesHS.cdr

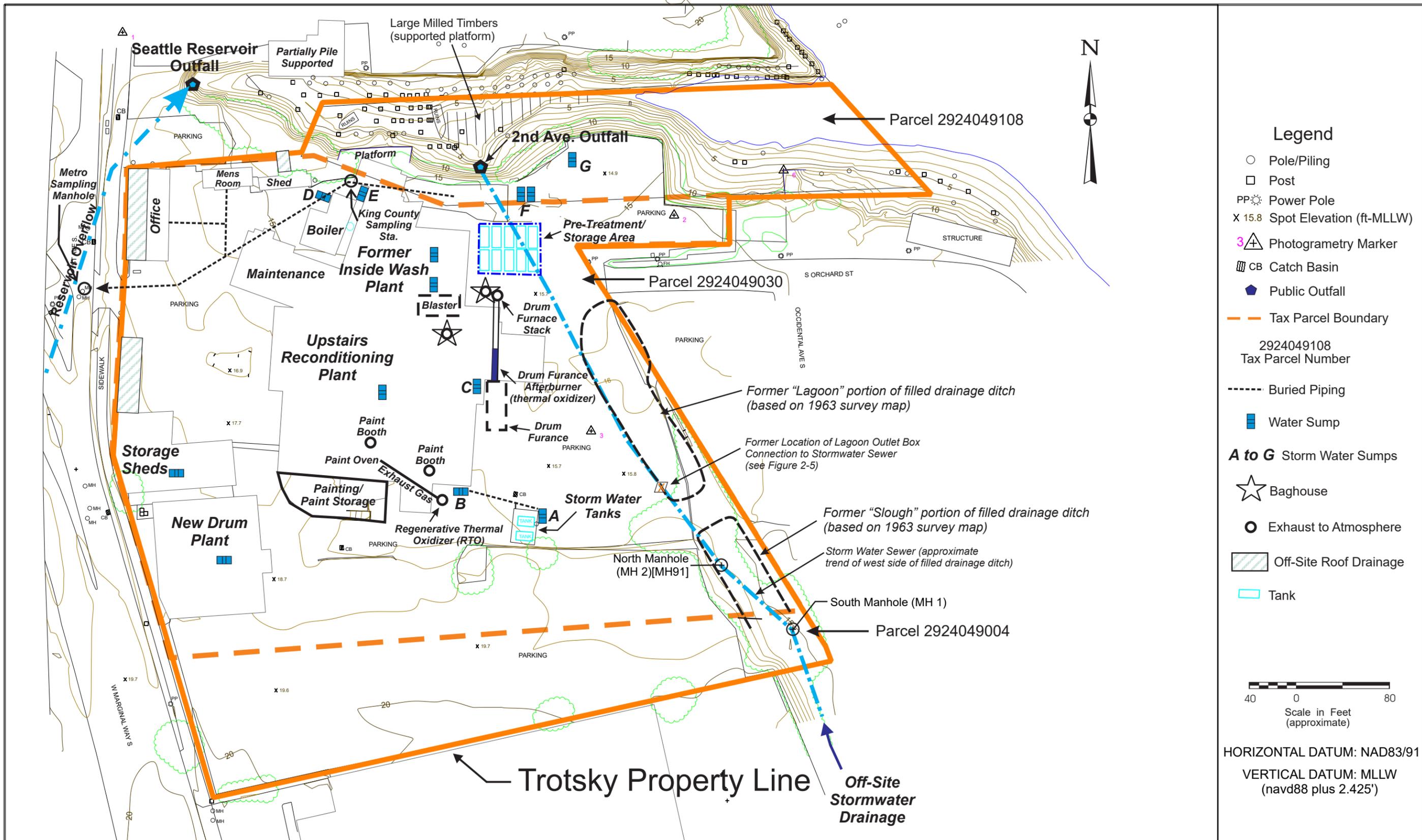
ICS/NW Cooperage Site
Seattle, Washington

Hot-Spot Characterization Focus Area



FIGURE 2a

May 2021



Legend

- Pole/Piling
- Post
- PP: Power Pole
- X 15.8 Spot Elevation (ft-MLLW)
- 3+ Photogrammetry Marker
- CB Catch Basin
- Public Outfall
- Tax Parcel Boundary
- 2924049108 Tax Parcel Number
- Buried Piping
- Water Sump
- A to G** Storm Water Sumps
- ☆ Baghouse
- Exhaust to Atmosphere
- Off-Site Roof Drainage
- Tank

40 0 80
Scale in Feet (approximate)

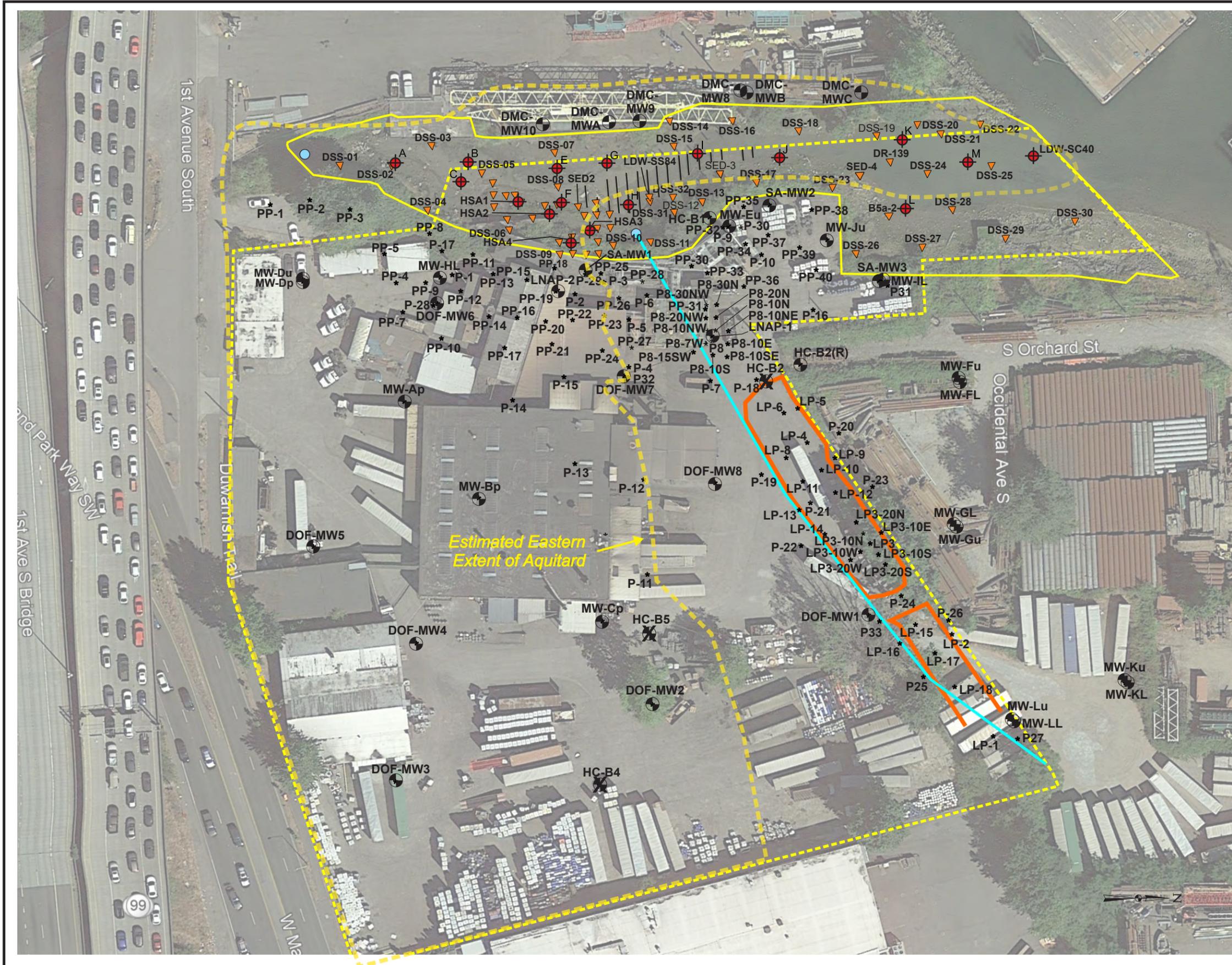
HORIZONTAL DATUM: NAD83/91
VERTICAL DATUM: MLLW (navd88 plus 2.425')

Notes:

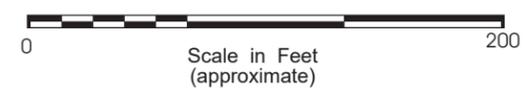
- 1) Property Survey by Continental Survey Co. (12-15-09)
- 2) Topography by David C. Smith Associates (Flown 3-18-10)
- 3) Buried pipe, Metro sampling points, and sump locations have not been surveyed
- 4) All sump connections are above ground except near stormwater tanks

Ref: ICS-NW Cooperae Working Base rev1HS.cdr

ICS/NW Cooperae Site		FIGURE 2b
Site Layout and Topography		
SUM-008 (ICS)	May 2021	
<i>Dalton, Olmsted & Fuglevand, Inc.</i>		



- Legend**
- MW-Ku Monitoring Well
 - HC-B2 Abandoned Well
 - P-24 Push-Probe
 - DSS-30 Surface Sediment Sample
 - J Sediment Core
 - Outfall
 - Stormsewer
 - Former Lagoon



ICS/NW Cooperage
Seattle, Washington

Sample Location Map

SUM-008-03 FS **FIGURE 3a** May 2021
Dalton, Olmsted & Fuglevand, Inc.

ALASKA MARINE LINES

DUWAMISH WATERWAY

RESERVOIR OVERFLOW OUTFALL

REFINED PRECIPITATE EXTENT

+3' OF SOFTER SEDIMENT

OUTFALL

TROTSKY PROPERTY

S Orchard St

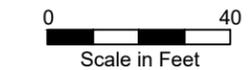
OCCIDENTAL AVE S.

NOTES

1. Topographic and feature survey performed by Bush, Roed & Hitchings, Inc. - July 2018
2. Horizontal Datum: NAD 83/91 Washington State Plane Coordinates, North Zone (US feet).
3. Vertical Datum: NAVD88 (feet). Difference from NAVD 88 to MLLW = 2.39'
4. Background image source: Google Earth Pro 2020. Use for visual reference only.

LEGEND

- Refined Extent of Precipitate Cap
- - - +3' of Softer Sediment
- DSS-11 Surface Sediment Sample Location & ID
- Core I Sediment Core Location & ID
- ◆ DMC-MWB (x) Well Location & ID
- PP-27 Push-Probe Location & ID
- Trotsky Property Boundary



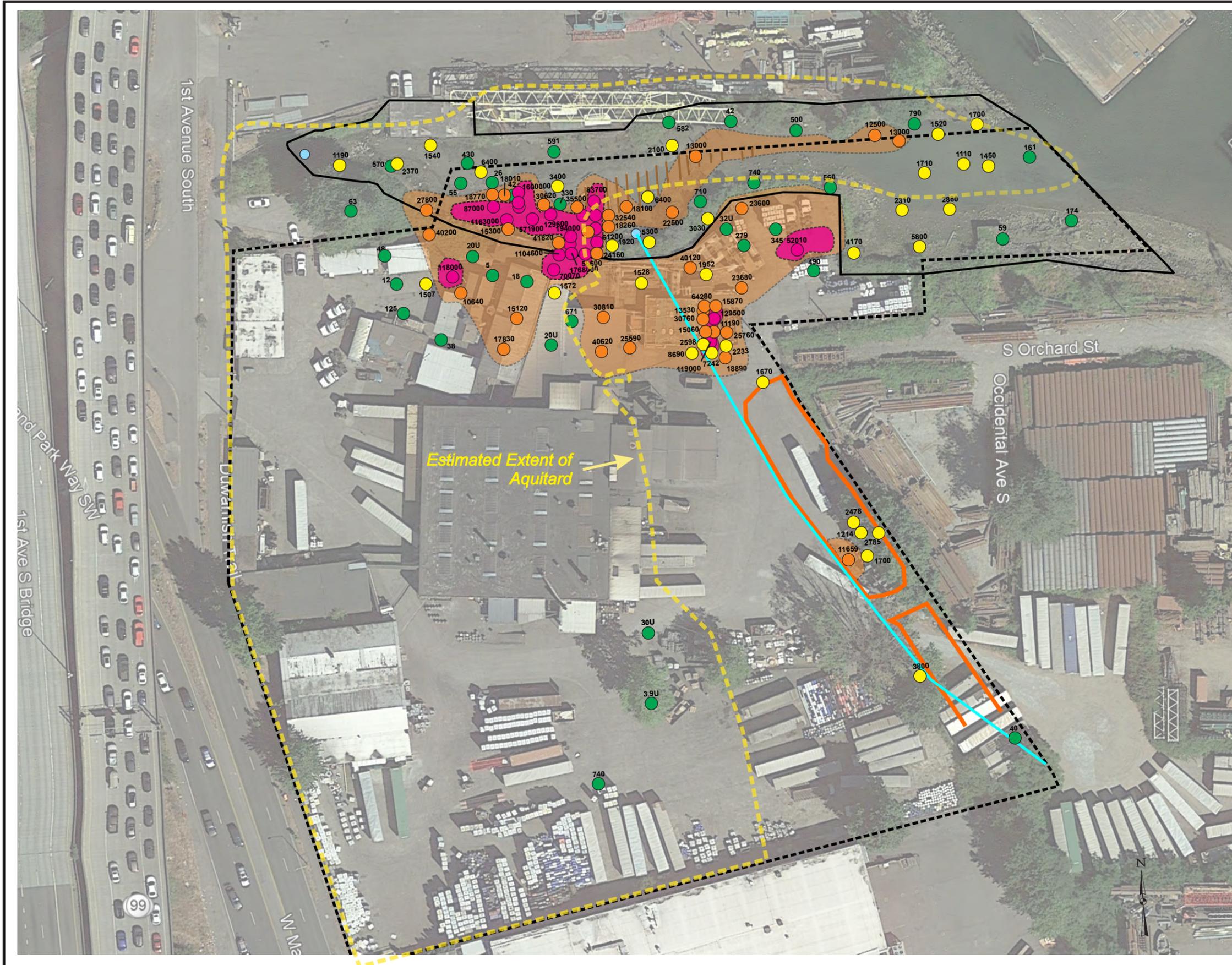
ICS/NW Coorage Site
Seattle, Washington
Feasibility Study



REFINED EXTENT OF PRECIPITATE CAP WITH SAMPLING LOCATIONS

FIGURE 3

PLOT TIME: 6/30/2021 8:46 AM MOD TIME: 6/30/2021 8:45 AM USER: Lee Barras DWG: P:\ICS-NW Coorage\Figures\2021-06\FS\2021-06-30 ICS Precipitate Cap.dwg



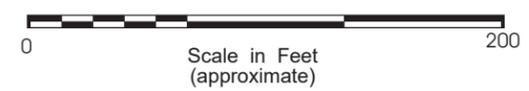
Legend

- Soil/Sediment Sample
- 174** Conc. (ug/kg)
- U** Not Detected
- Outfall
- Stormsewer
- ▭ Former Lagoon

Total PCBs

- <1000 ug/kg
- >1000 to 10,000 ug/kg
- >10000 to 50,000 ug/kg
- >50,000 ug/kg

The filled in colored areas were drawn to qualitatively highlight higher concentration areas

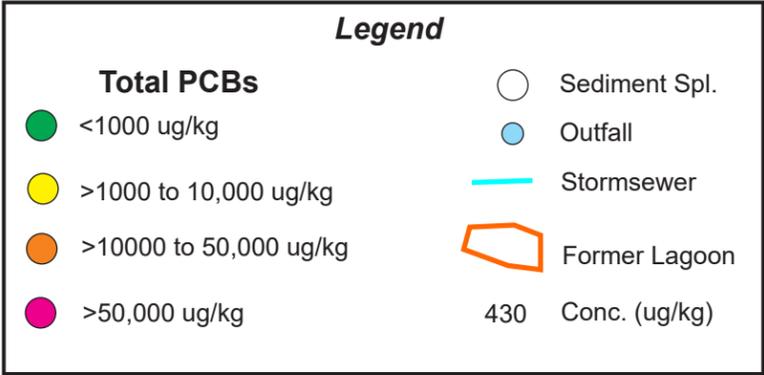
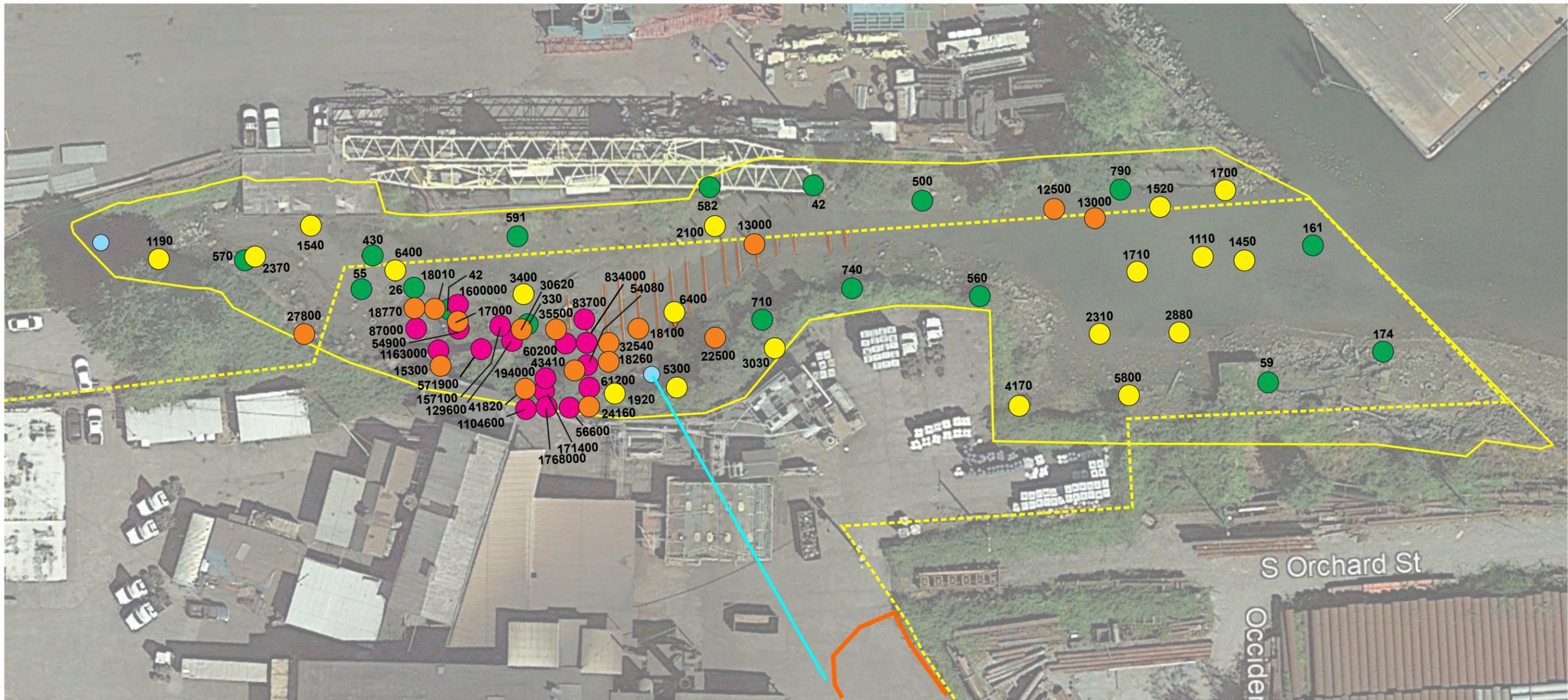


ICS/NW Cooperage Site
Seattle, Washington

PCB Concentrations in Soil and Sediment (0 to 3.0 Feet)

SUM-008-03FS **FIGURE 4a** May 2021
Dalton, Olmsted & Fuglevand, Inc.

Ref: 0 to 3.0 feet soil concA.cdr

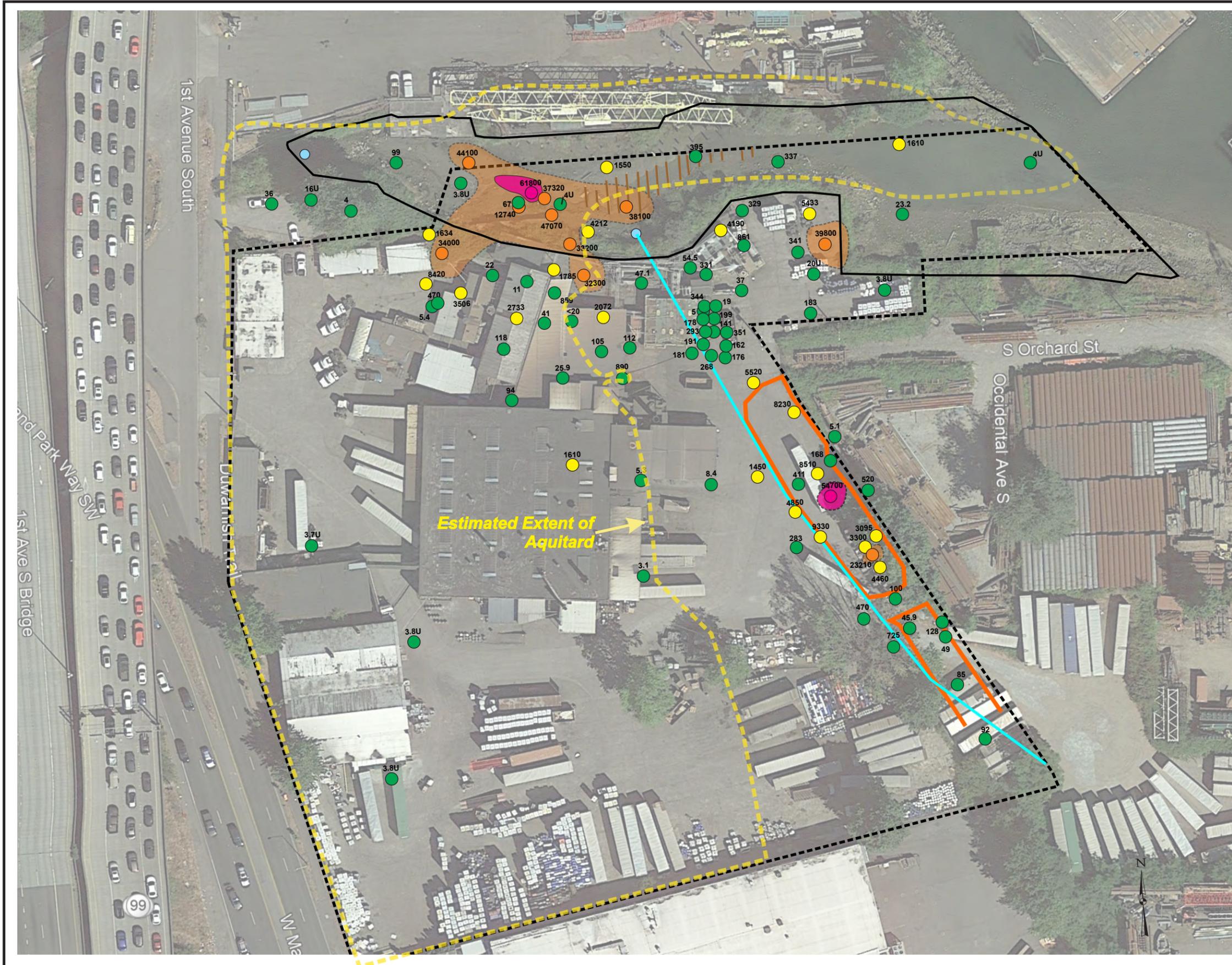


ICS/NW Cooperage
Seattle, Washington

**PCB Concentrations
in Sediment (approx. <3.0')**

SUM-008-03 FS **FIGURE 4b** May 2021
Dalton, Olmsted & Fuglevand, Inc.

Ref: Embay 0 to 3'.cdr



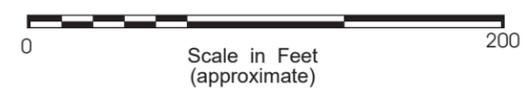
Legend

- Soil/Sediment Sample
- 174** Conc. (ug/kg)
- U** Not Detected
- Outfall
- Stormsewer
- ▭ Former Lagoon

Total PCBs

- <1000 ug/kg
- >1000 to 10,000 ug/kg
- >10000 to 50,000 ug/kg
- >50,000 ug/kg

The filled in colored areas were drawn to qualitatively highlight higher concentration areas

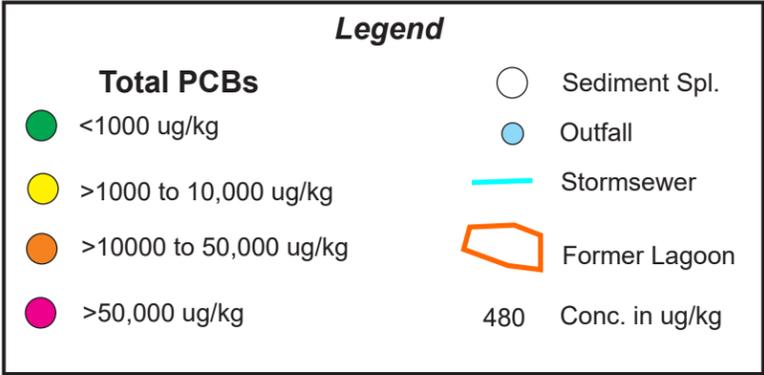
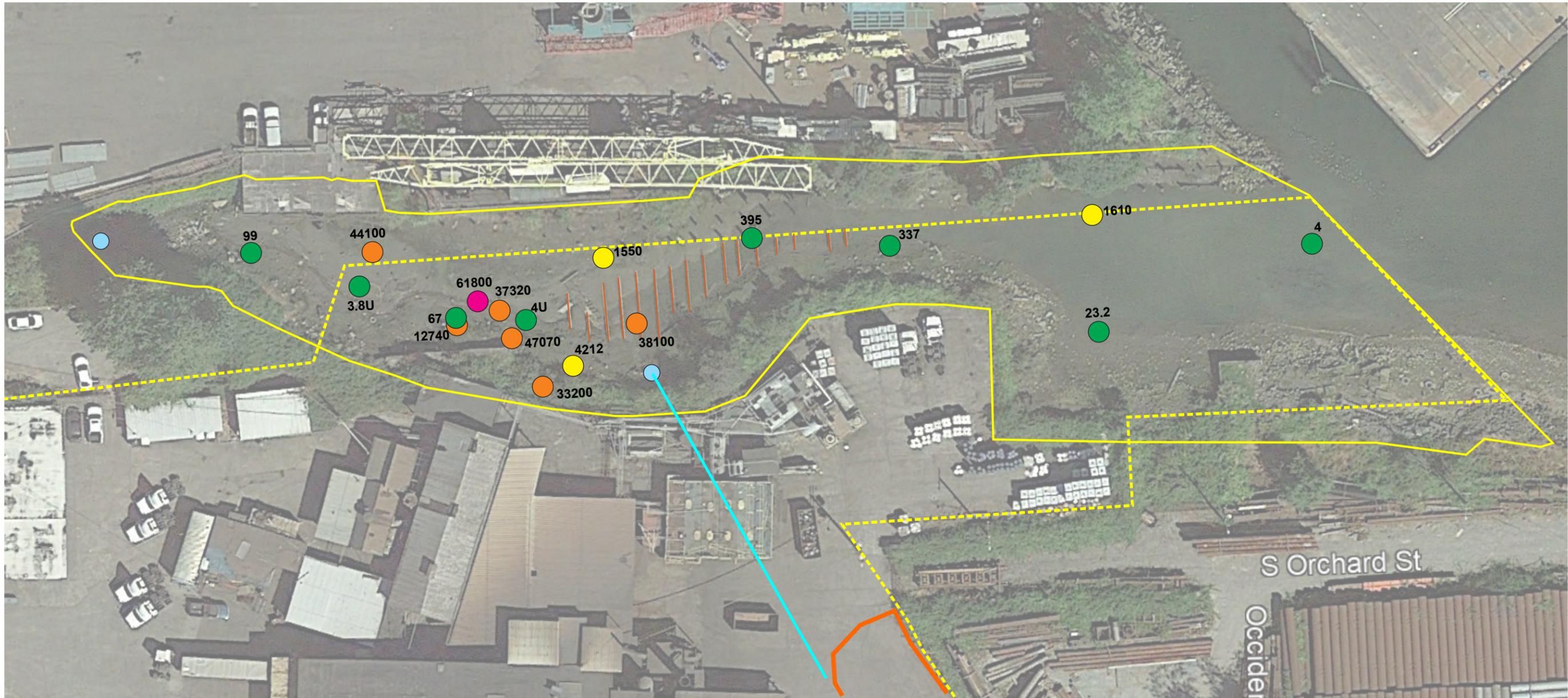


ICS/NW Cooperage Site
Seattle, Washington

PCB Concentrations in Soil and Sediment (3 to 5 Feet)

SUM-008-03FS **FIGURE 4c** May 2021
Dalton, Olmsted & Fuglevand, Inc.

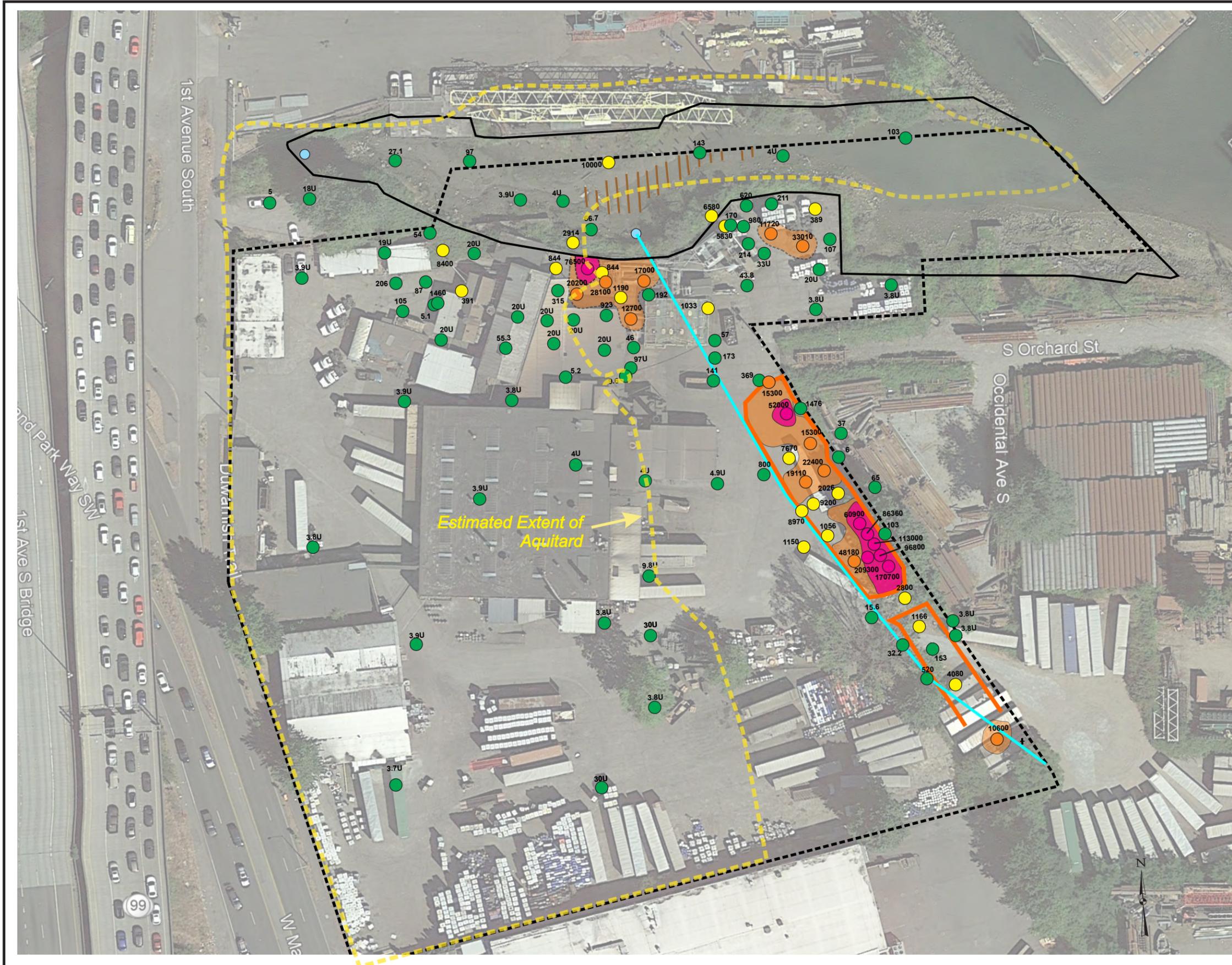
Ref: 3 to 5 feet soil concA.cdr



ICS/NW Cooperage
Seattle, Washington

**PCB Concentrations
in Sediment (3 to 5')**

SUM-008-03 FS **FIGURE 4d** May 2021
Dalton, Olmsted & Fuglevand, Inc.



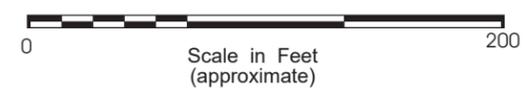
Legend

- Soil/Sediment Sample
- 174** Conc. (ug/kg)
- U** Not Detected
- Outfall
- Stormsewer
- ▭ Former Lagoon

Total PCBs

- <1000 ug/kg
- >1000 to 10,000 ug/kg
- >10000 to 50,000 ug/kg
- >50,000 ug/kg

The filled in colored areas were drawn to qualitatively highlight higher concentration areas

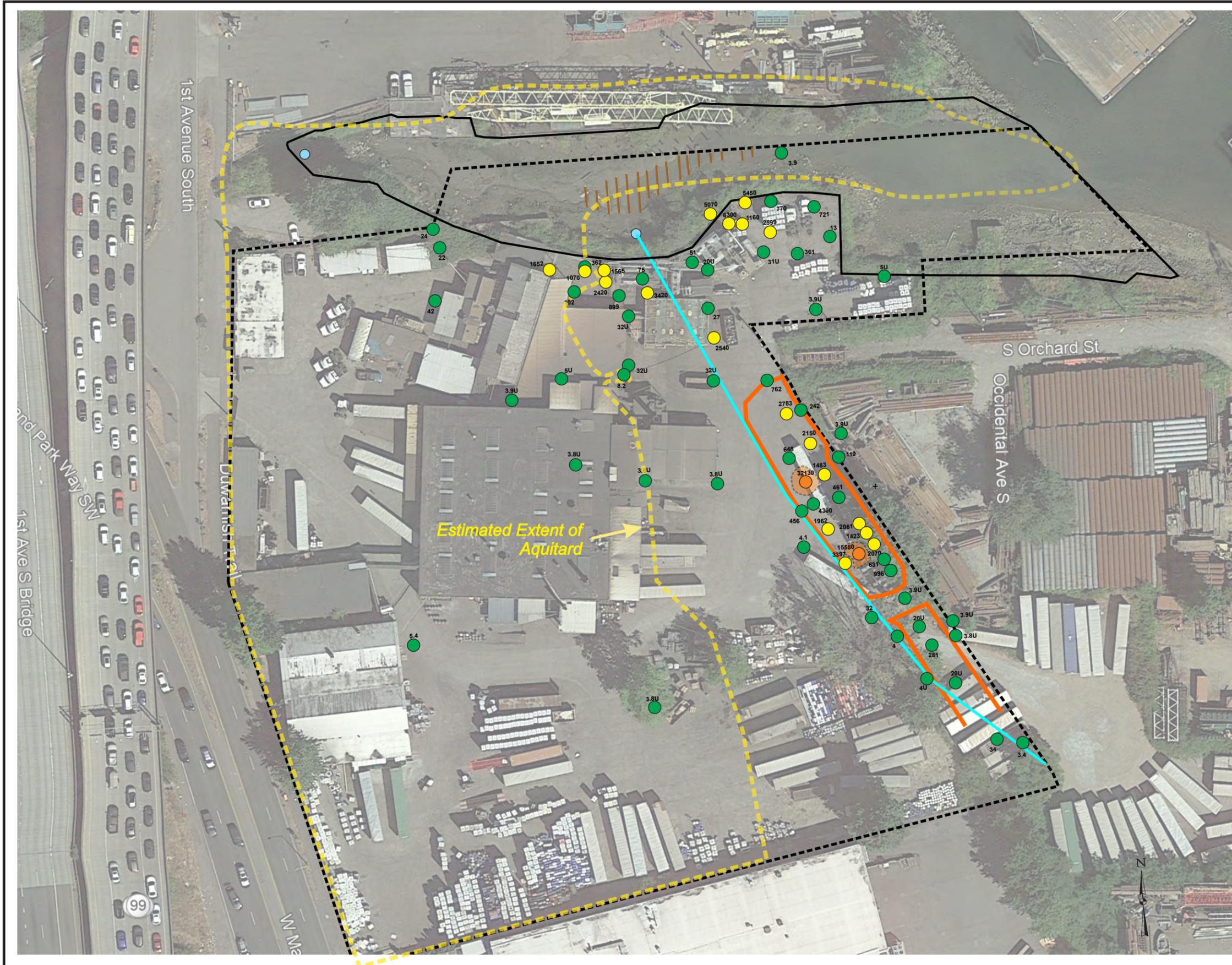


ICS/NW Cooperage Site
Seattle, Washington

PCB Concentrations in Soil and Sediment (5 to 10 Feet)

SUM-008-03FS **FIGURE 4e** May 2021
Dalton, Olmsted & Fuglevand, Inc.

Ref: 5 to 10 feet soil concA.cdr



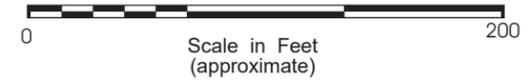
Legend

- Soil/Sediment Sample
- 174** Conc. (ug/kg)
- U** Not Detected
- Outfall
- Stormsewer
- ▭ Former Lagoon

Total PCBs

- <1000 ug/kg
- >1000 to 10,000 ug/kg
- >10000 to 50,000 ug/kg
- >50,000 ug/kg

The filled in colored areas were drawn to qualitatively highlight higher concentration areas

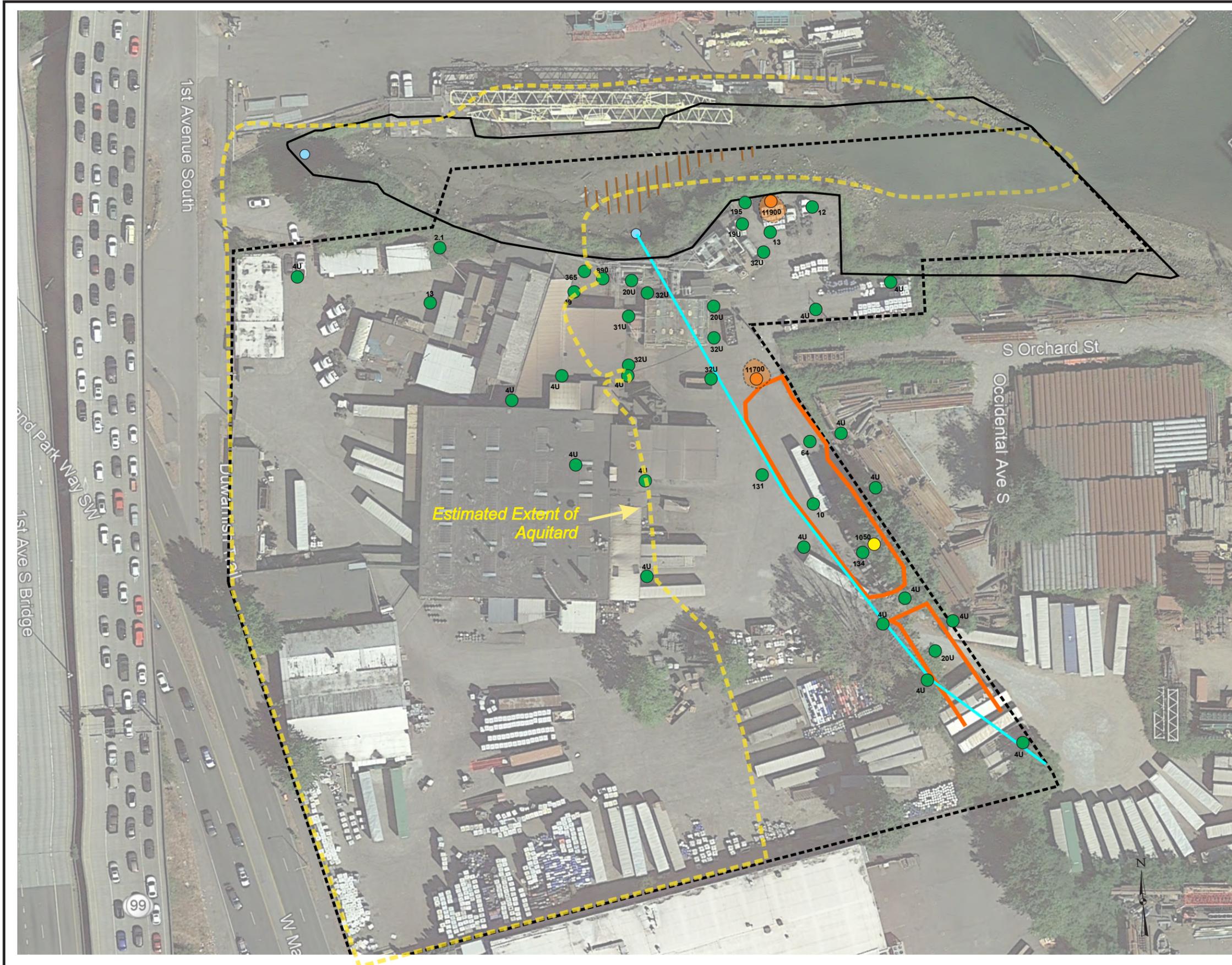


ICS/NW Cooperage Site
Seattle, Washington

PCB Concentrations in Soil and Sediment (10 to 15 Feet)

SUM-008-03FS **FIGURE 4f** May 2021
Dalton, Olmsted & Fuglevand, Inc.

Ref: 10 to 15 feet soil conc.cdr



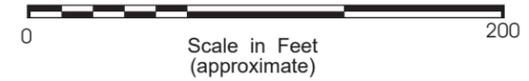
Legend

- Soil/Sediment Sample
- 174** Conc. (ug/kg)
- U** Not Detected
- Outfall
- Stormsewer
- ▭ Former Lagoon

Total PCBs

- <1000 ug/kg
- >1000 to 10,000 ug/kg
- >10000 to 50,000 ug/kg
- >50,000 ug/kg

The filled in colored areas were drawn to qualitatively highlight higher concentration areas

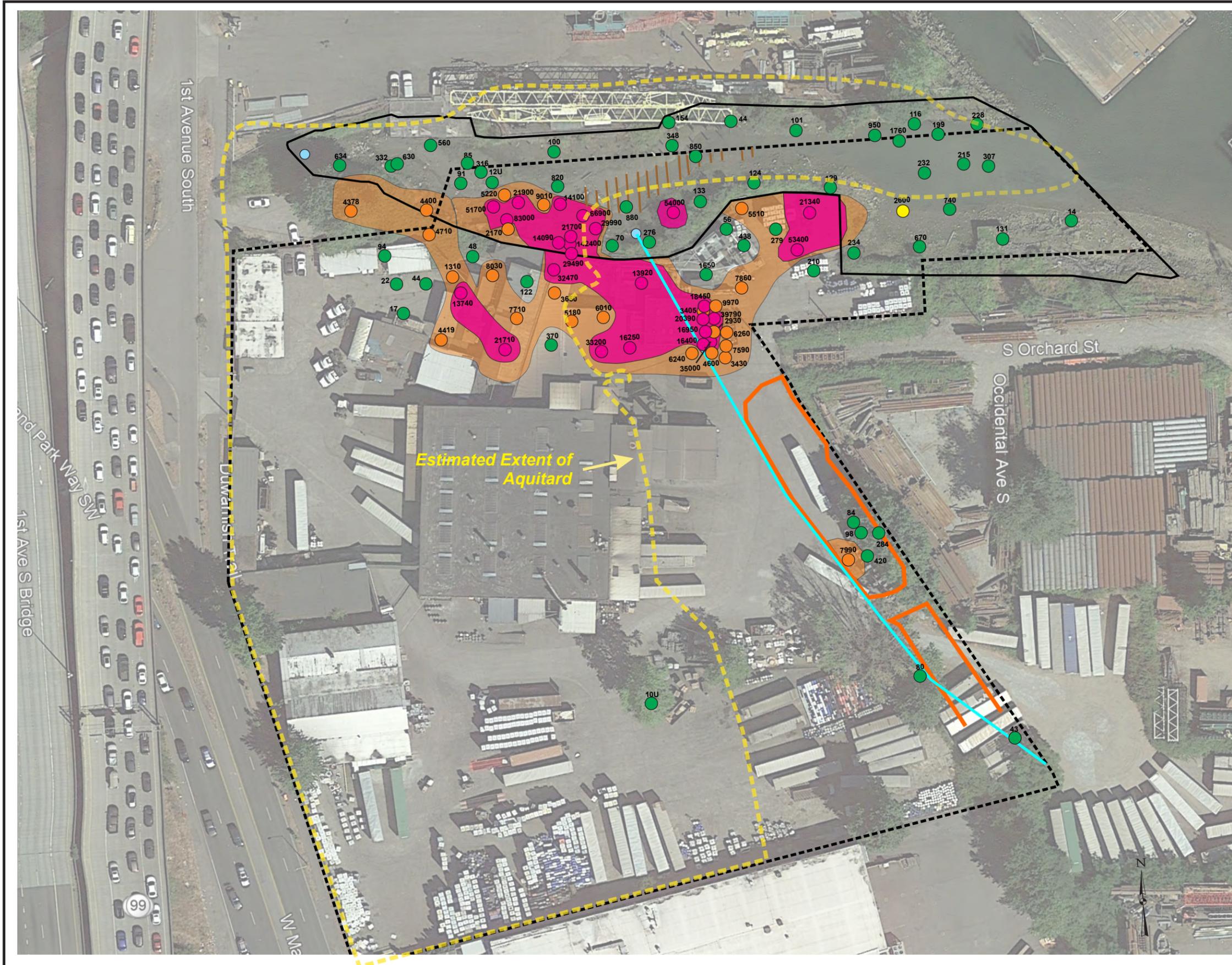


ICS/NW Cooperage Site
Seattle, Washington

PCB Concentrations in Soil and Sediment (15 to 20 Feet)

SUM-008-03FS **FIGURE 4g** May 2021
Dalton, Olmsted & Fuglevand, Inc.

Ref: 15 to 20 feet soil conc.cdr



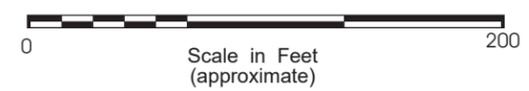
Legend

- Soil/Sediment Sample
- 174** Conc. (mg/kg)
- U** Not Detected
- Outfall
- Stormsewer
- ▭ Former Lagoon

DRO+RRO

- <2000 mg/kg
- >2000 to 4000 mg/kg
- >4000 to 10000 mg/kg
- >10000 mg/kg

The filled in colored areas were drawn to qualitatively highlight higher concentration areas

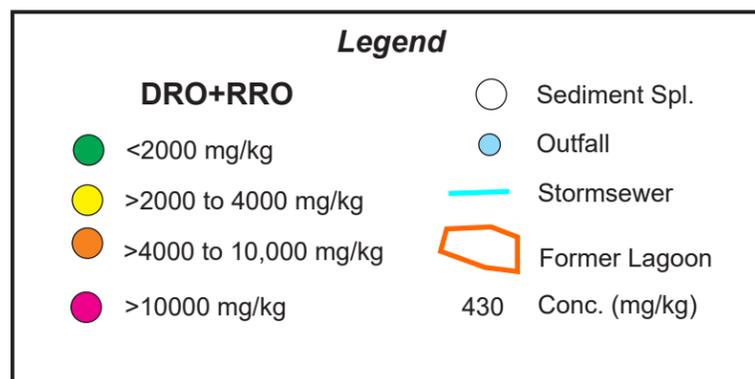
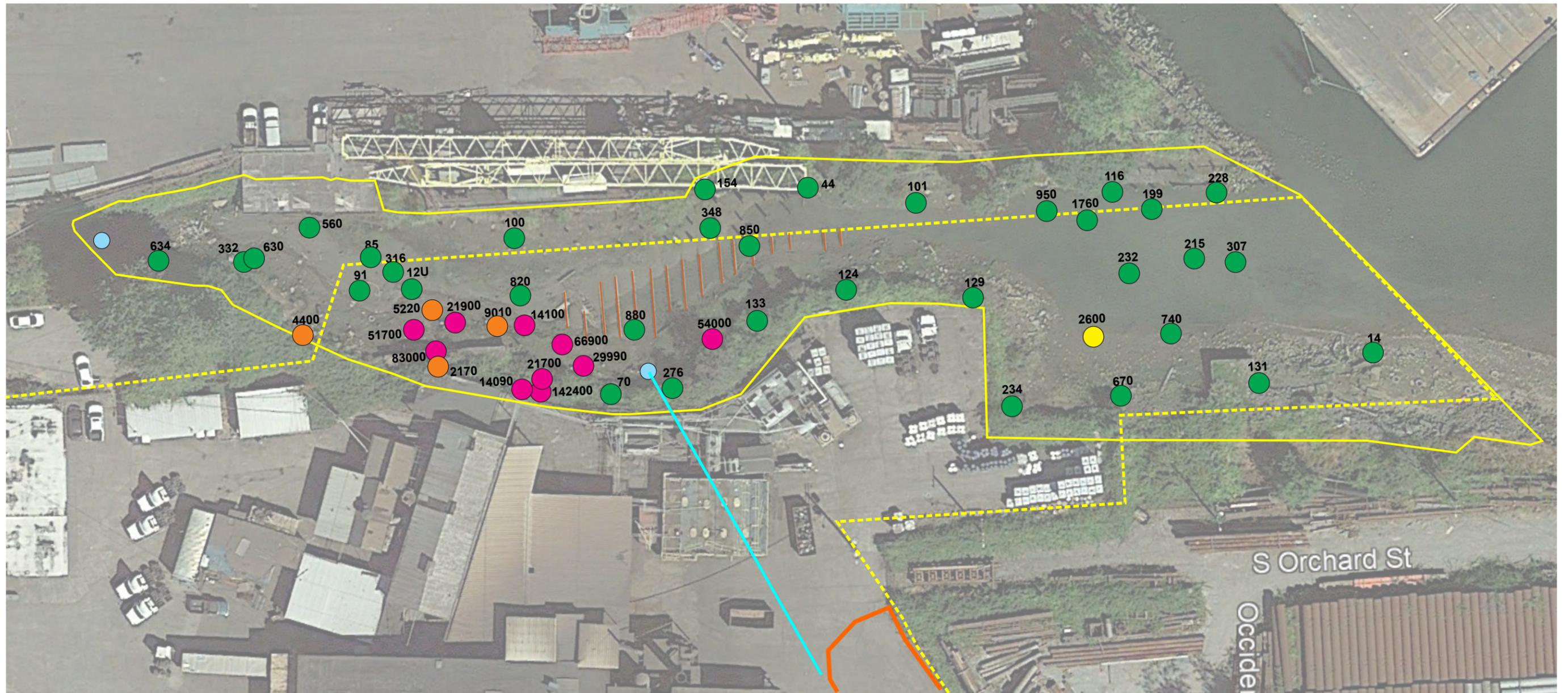


ICS/NW Cooperage Site
Seattle, Washington

DRO+RRO Concentrations in Soil and Sediment (0 to 3.0 Feet)

SUM-008-03FS **FIGURE 5a** May 2021
Dalton, Olmsted & Fuglevand, Inc.

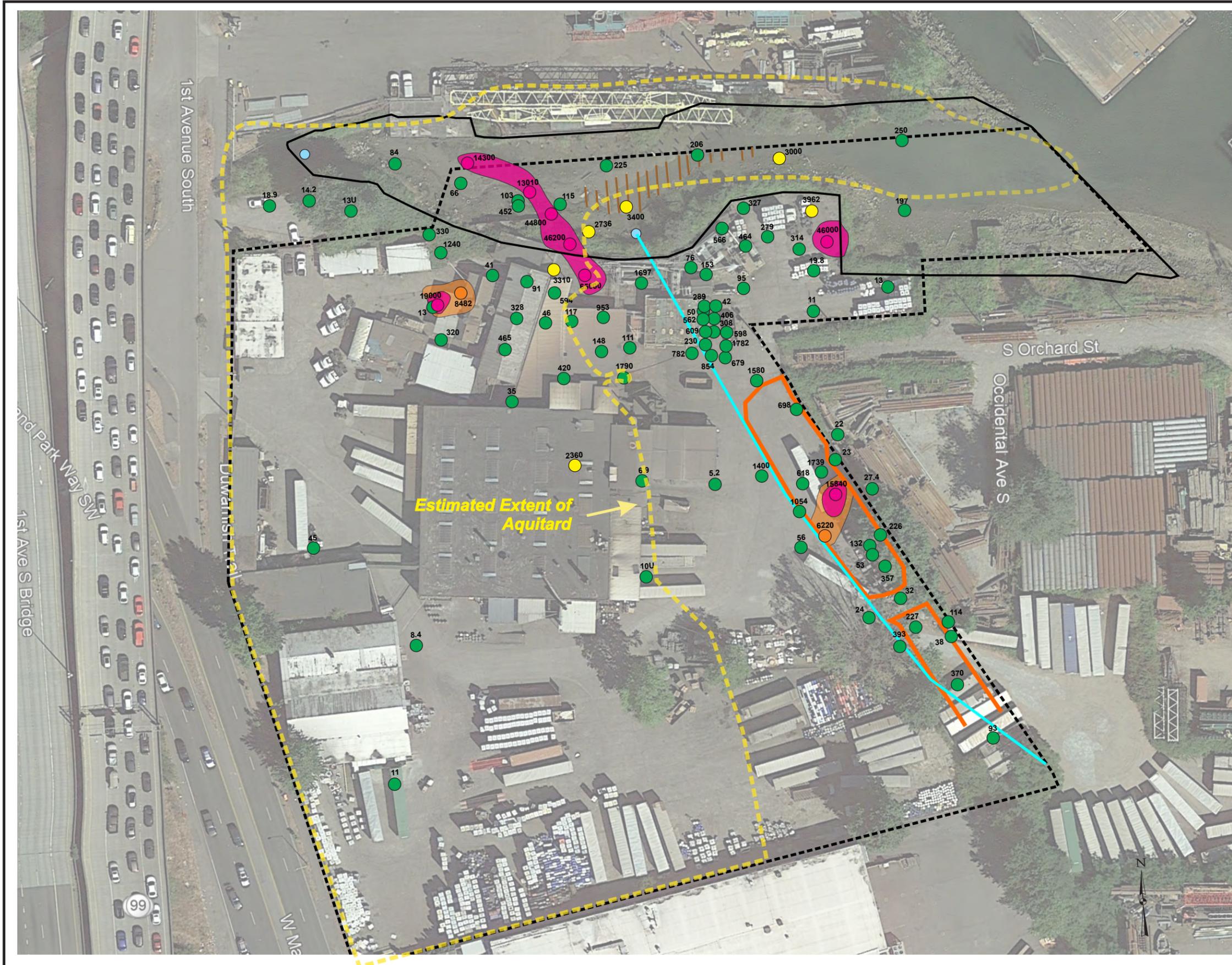
Ref: 0 to 3.0 feet soil concA.cdr



ICS/NW Cooperage
Seattle, Washington

**DRO+RRO Concentrations
in Sediment (approx. <3.0')**

SUM-008-03 FS **FIGURE 5b** May 2021
Dalton, Olmsted & Fuglevand, Inc.



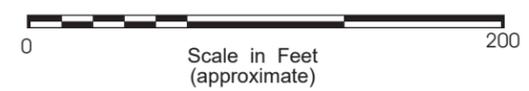
Legend

- Soil/Sediment Sample
- 174** Conc. (mg/kg)
- U** Not Detected
- Outfall
- Stormsewer
- ▭ Former Lagoon

DRO+RRO

- <2000 mg/kg
- >2000 to 4000 mg/kg
- >4000 to 10000 mg/kg
- >10000 mg/kg

The filled in colored areas were drawn to qualitatively highlight higher concentration areas

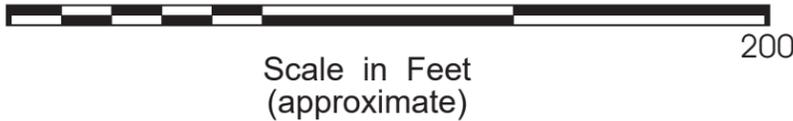
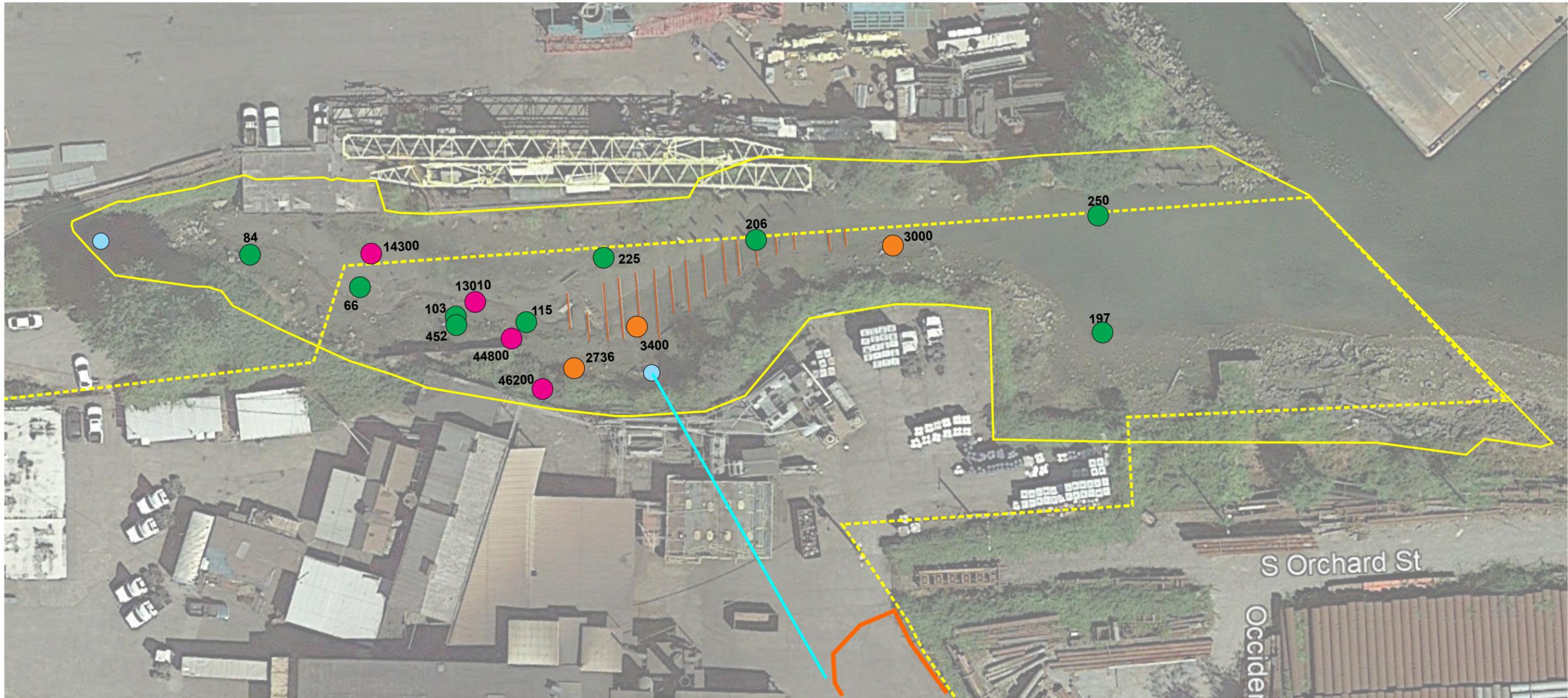


ICS/NW Cooperage Site
Seattle, Washington

DRO+RRO Concentrations in Soil and Sediment (3 to 5 Feet)

SUM-008-03FS **FIGURE 5c** May 2021
Dalton, Olmsted & Fuglevand, Inc.

Ref: 3 to 5 feet soil concA.cdr

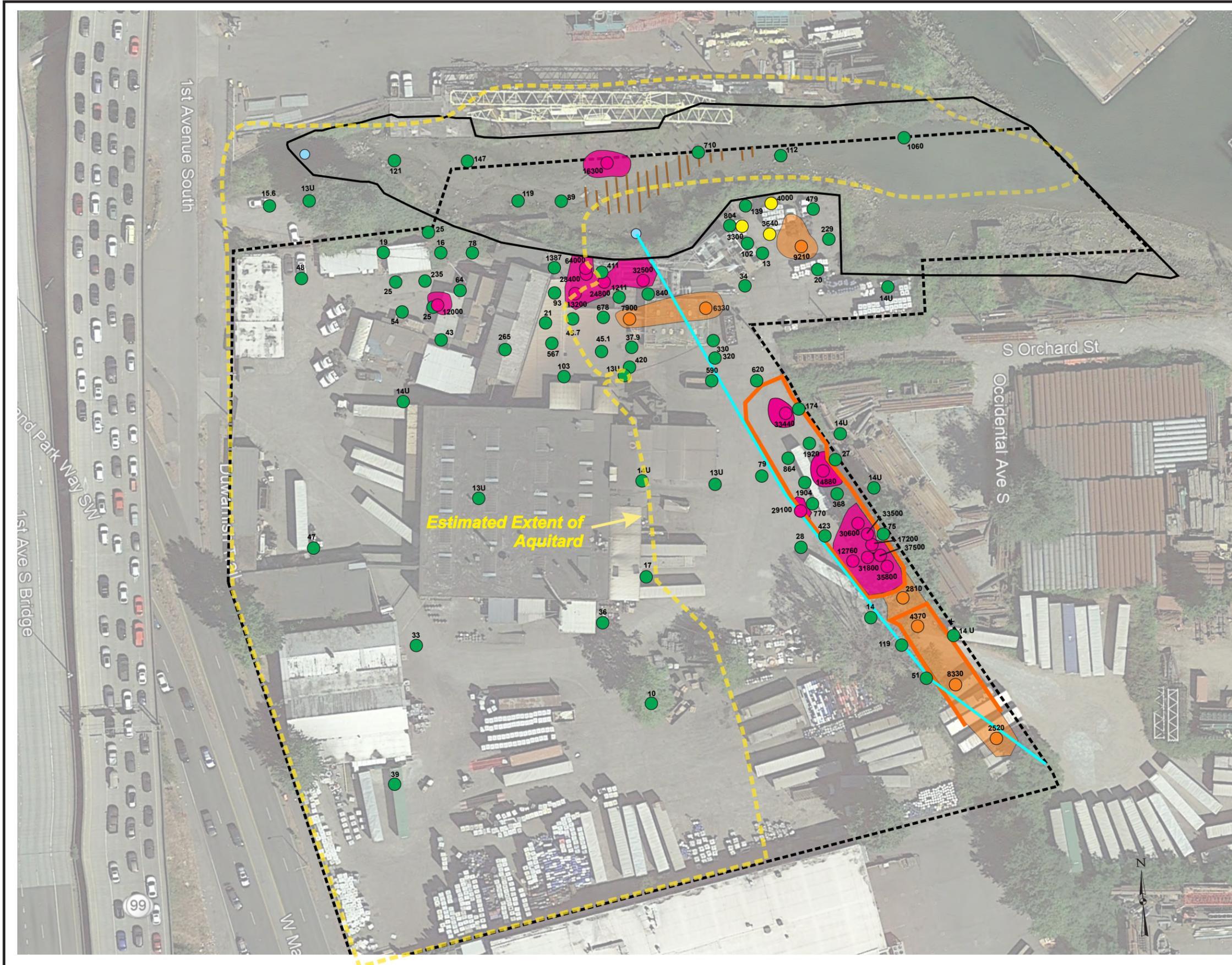


ICS/NW Cooperage
Seattle, Washington

**DRO+RRO Concentrations
in Sediment (3 to 5')**

SUM-008-03 FS **FIGURE 5d** March 2021
Dalton, Olmsted & Fuglevand, Inc.

Ref: Embay 3 to 5'.cdr



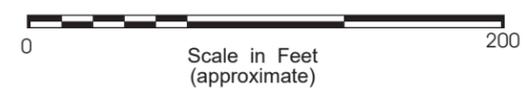
Legend

- Soil/Sediment Sample
- 174** Conc. (mg/kg)
- U** Not Detected
- Outfall
- Stormsewer
- ▭ Former Lagoon

DRO+RRO

- <2000 mg/kg
- >2000 to 4000 mg/kg
- >4000 to 10000 mg/kg
- >10000 mg/kg

The filled in colored areas were drawn to qualitatively highlight higher concentration areas

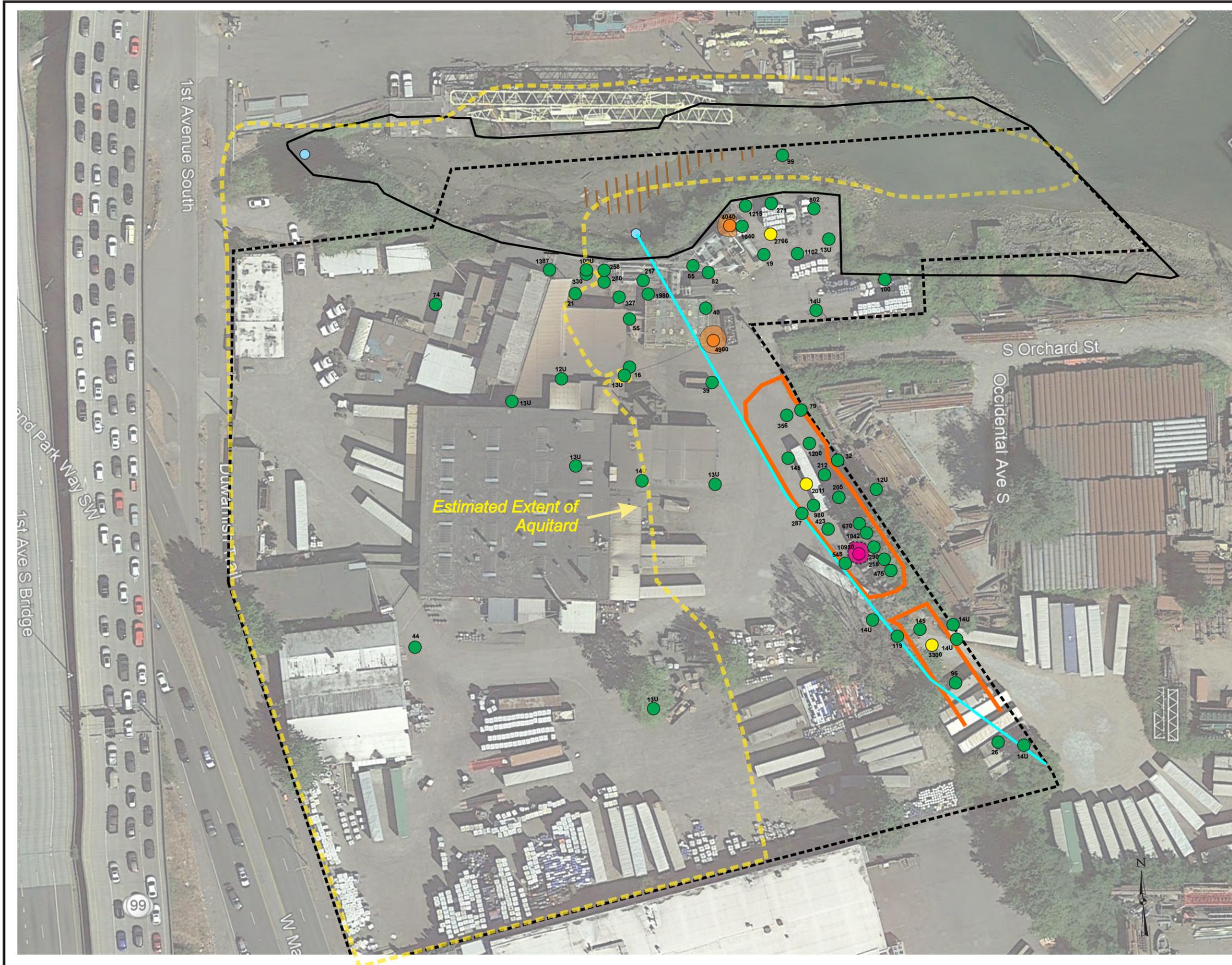


ICS/NW Cooperage Site
Seattle, Washington

DRO+RRO Concentrations in Soil and Sediment (5 to 10 Feet)

SUM-008-03FS **FIGURE 5e** May 2021
Dalton, Olmsted & Fuglevand, Inc.

Ref: 5 to 10 feet soil concA.cdr



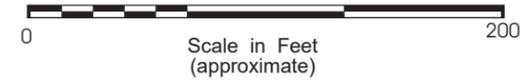
Legend

- Soil/Sediment Sample
- 174** Conc. (mg/kg)
- U** Not Detected
- Outfall
- Stormsewer
- ▭ Former Lagoon

DRO+RRO

- <2000 mg/kg
- >2000 to 4000 mg/kg
- >4000 to 10000 mg/kg
- >10000 mg/kg

The filled in colored areas were drawn to qualitatively highlight higher concentration areas

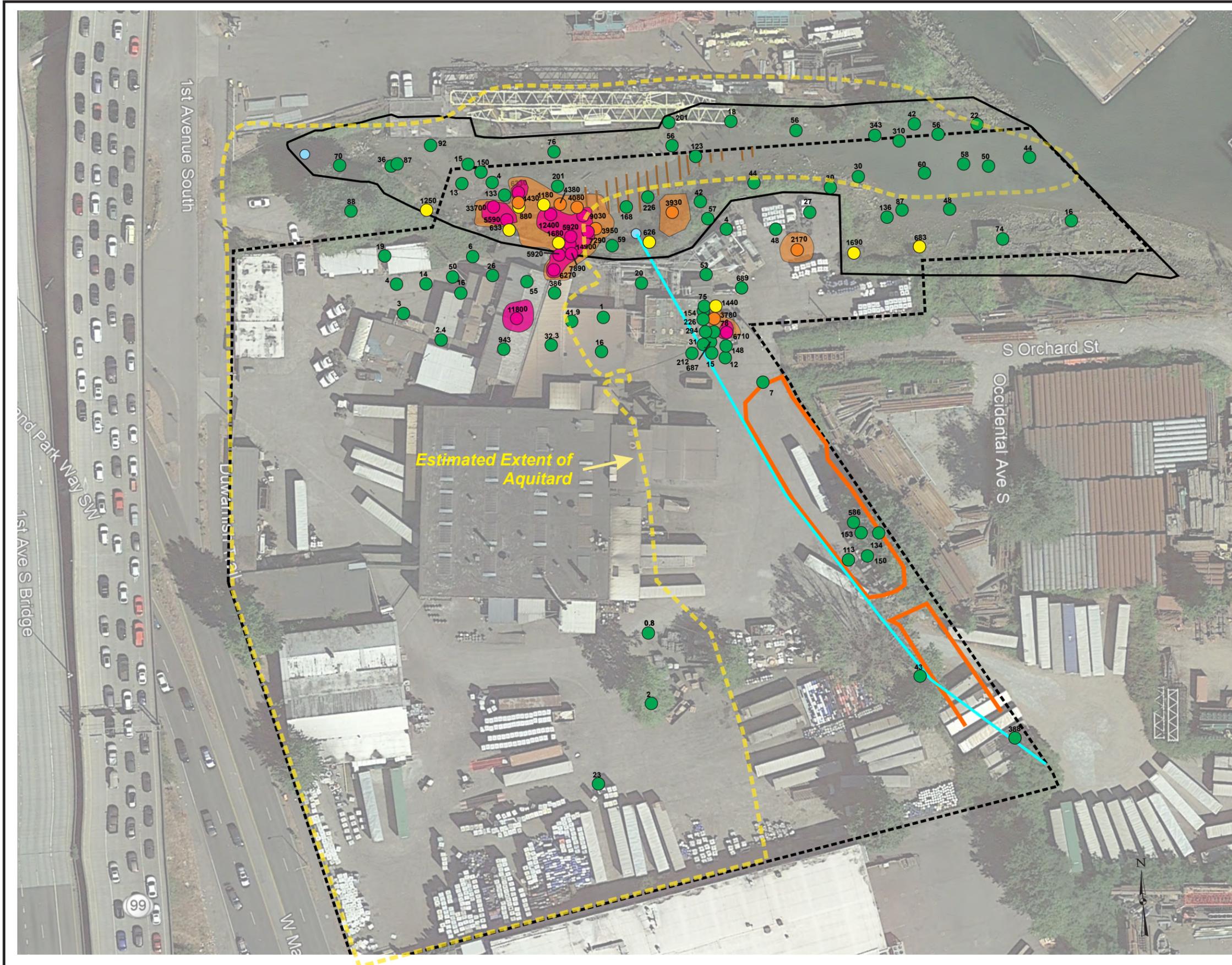


ICS/NW Cooperage Site
Seattle, Washington

DRO+RRO Concentrations in Soil and Sediment (10 to 15 Feet)

SUM-008-03FS **FIGURE 5f** May 2021
Dalton, Olmsted & Fuglevand, Inc.

Ref: 10 to 15 feet soil conc.cdr



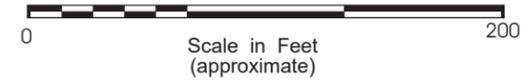
Legend

- Soil/Sediment Sample
- 174** Conc. (mg/kg)
- U** Not Detected
- Outfall
- Stormsewer
- ▭ Former Lagoon

Lead

- <1000 mg/kg (Upland)
<530 mg/kg (Sediment)
- >1000 to 2,000 mg/kg (Upland); >530 to 2000 mg/kg Sediment
- >2000 to 5,000 mg/kg
- >5000 mg/kg

The filled in colored areas were drawn to qualitatively highlight higher concentration areas

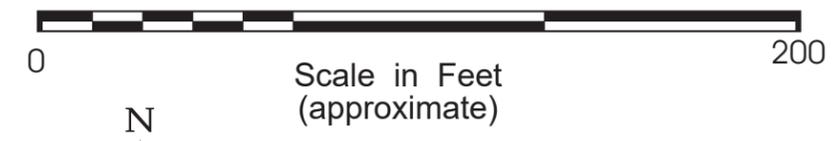
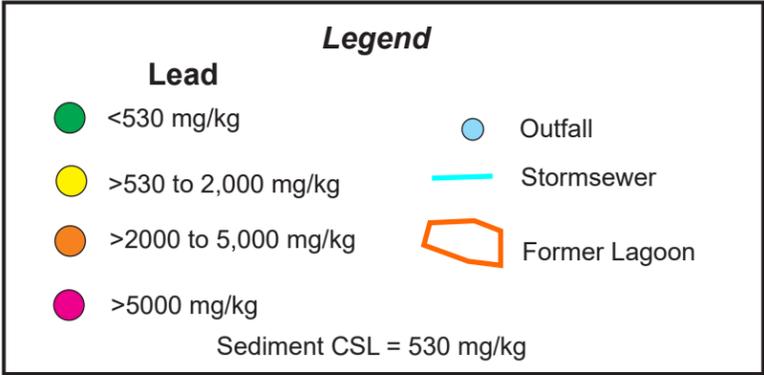
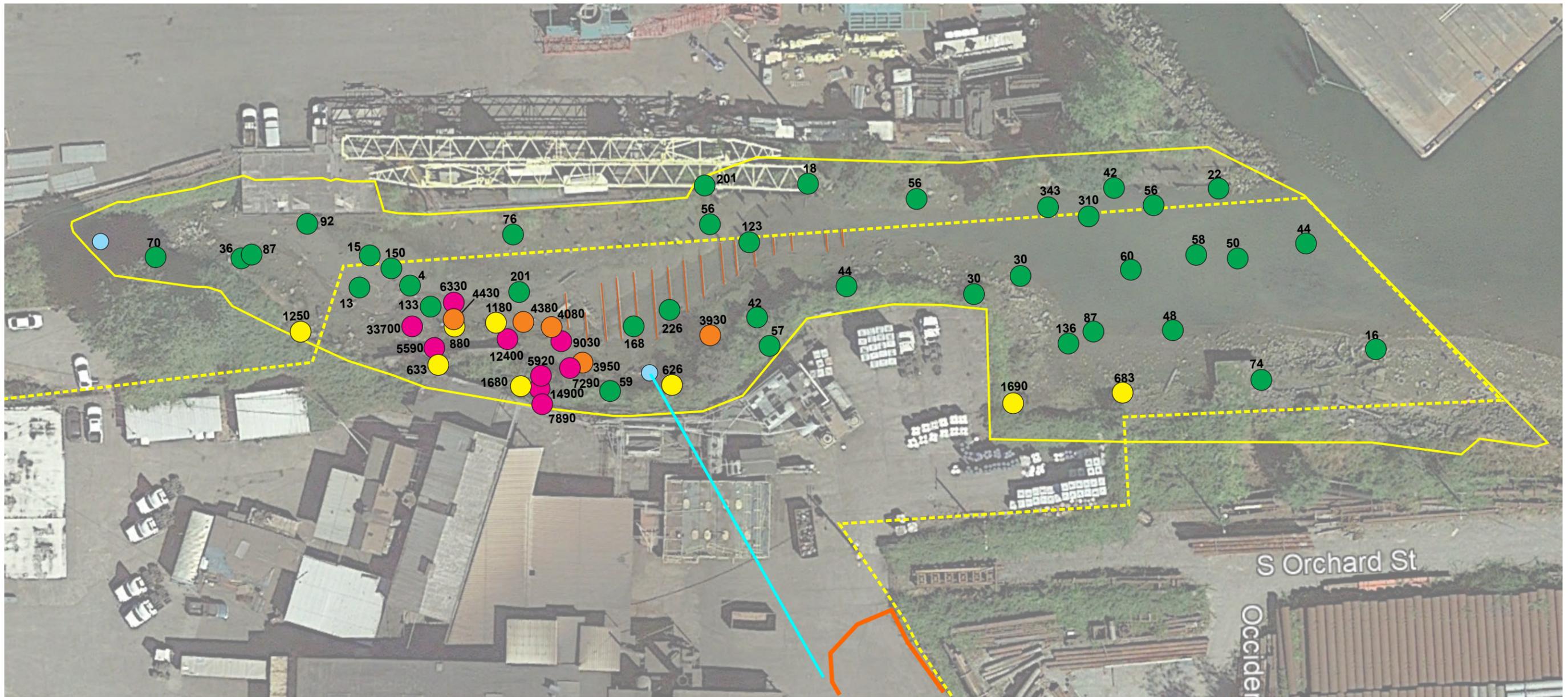


ICS/NW Cooperage Site
Seattle, Washington

Lead Concentrations in Soil and Sediment (0 to 3.0 Feet)

SUM-008-03FS **FIGURE 6a** May 2021
Dalton, Olmsted & Fuglevand, Inc.

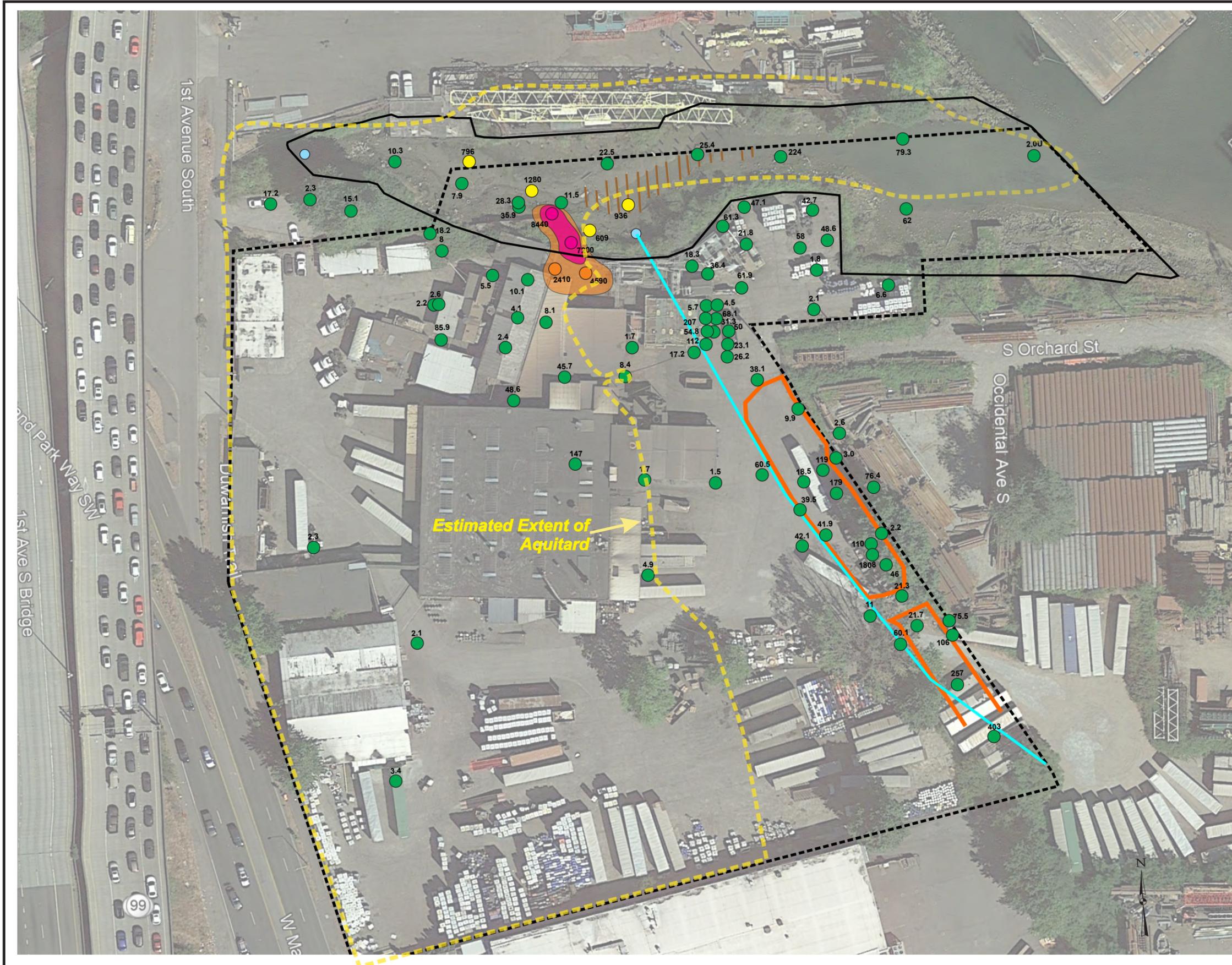
Ref: 0 to 3.0 feet soil concA.cdr



ICS/NW Cooperage
Seattle, Washington

**Lead Concentrations
in Sediment (approx. <3.0')**

SUM-008-03 FS **FIGURE 6b** May 2021
Dalton, Olmsted & Fuglevand, Inc.



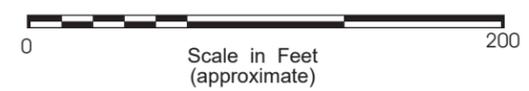
Legend

- Soil/Sediment Sample
- 174** Conc. (mg/kg)
- U** Not Detected
- Outfall
- Stormsewer
- ▭ Former Lagoon

Lead

- <1000 mg/kg (Upland)
<530 mg/kg (Sediment)
- >1000 to 2,000 mg/kg (Upland); >530 to 2,000 mg/kg (Sediment)
- >2000 to 5,000 mg/kg
- >5000 mg/kg

The filled in colored areas were drawn to qualitatively highlight higher concentration areas

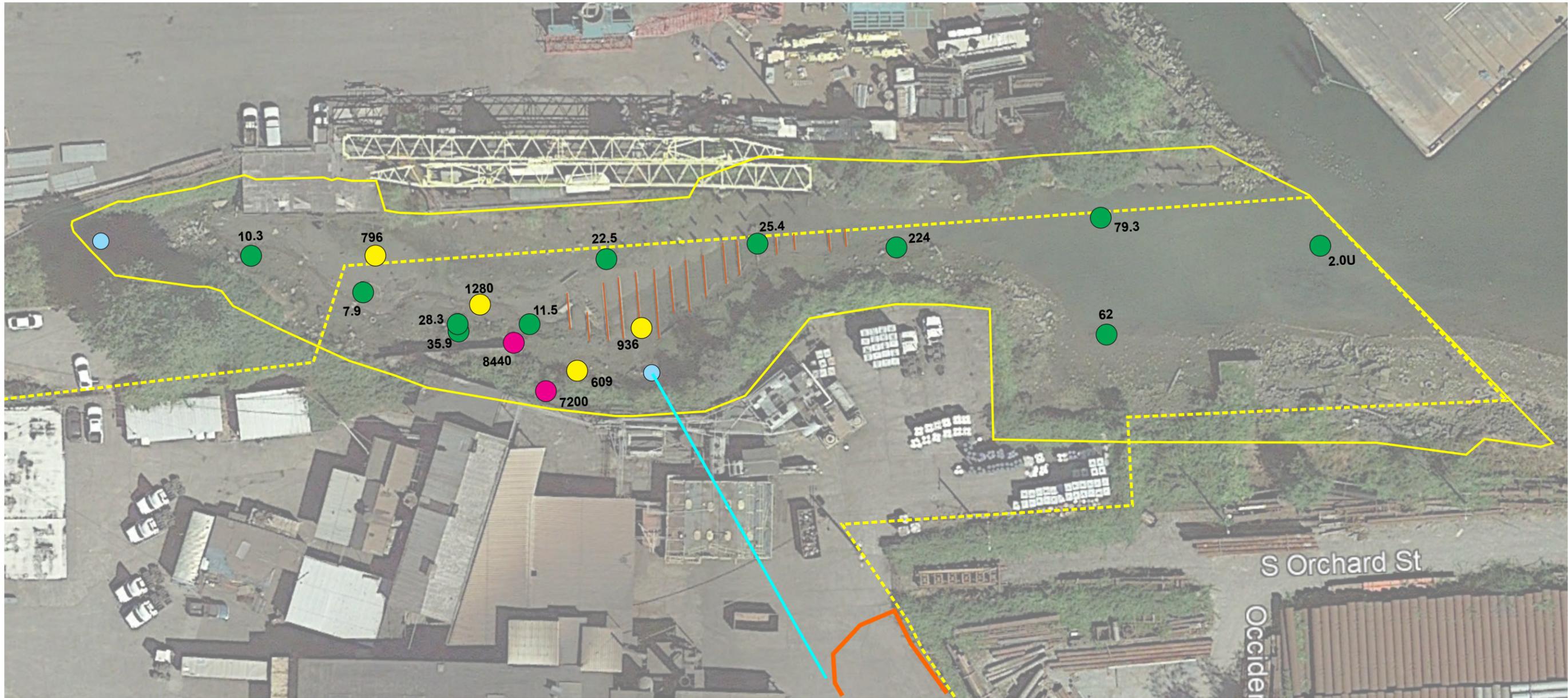


ICS/NW Cooperage Site
Seattle, Washington

Lead Concentrations in Soil and Sediment (3 to 5 Feet)

SUM-008-03FS **FIGURE 6c** May 2021
Dalton, Olmsted & Fuglevand, Inc.

Ref: 3 to 5 feet soil concA.cdr



Legend

Lead	○ Sediment Spl.
● <530 mg/kg	● Outfall
● >530 to 2,000 mg/kg	— Stormsewer
● >2000 to 5,000 mg/kg	▭ Former Lagoon
● >5000 mg/kg	480 Conc. in mg/kg

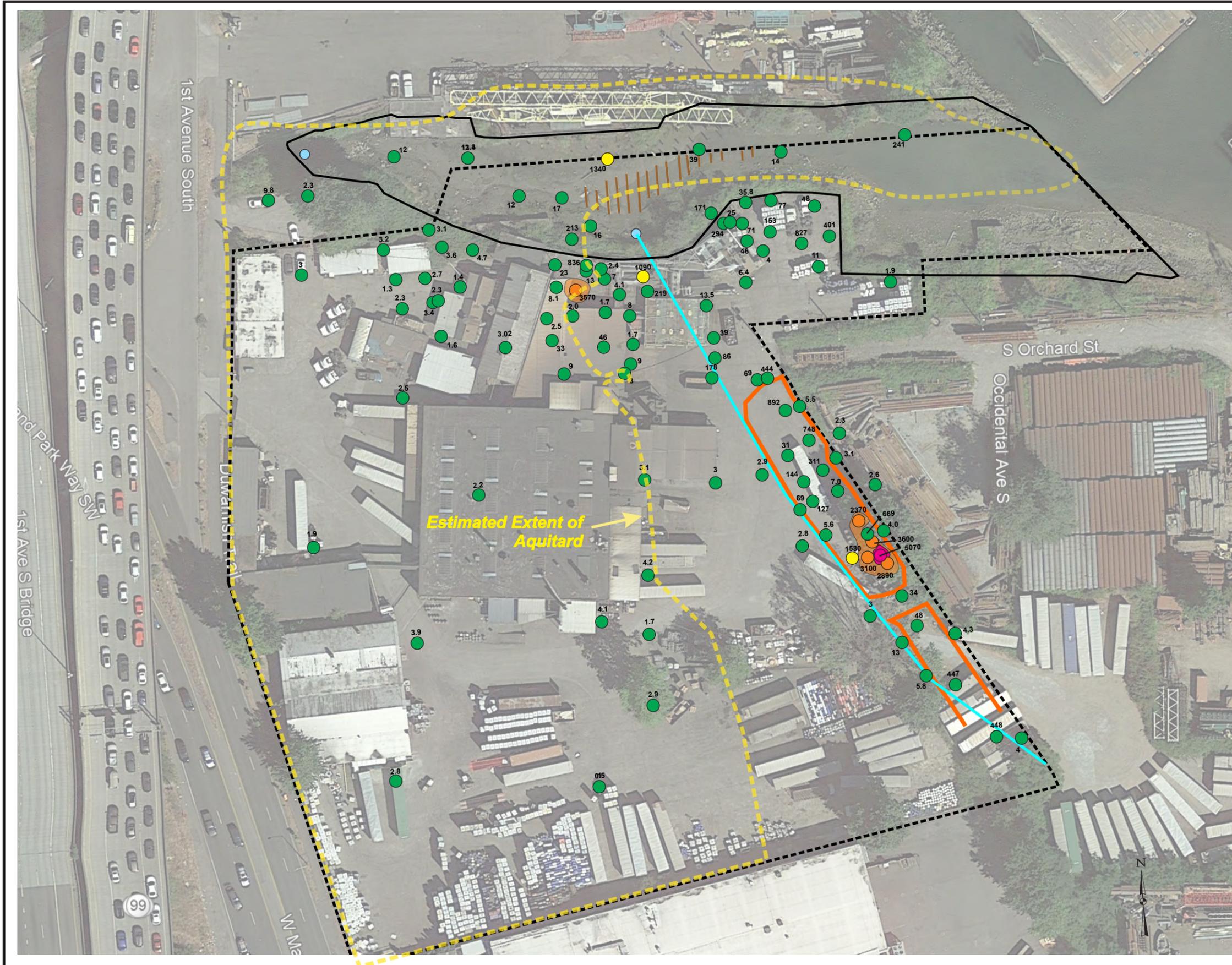
Sediment CSL = 530 mg/kg



ICS/NW Cooperage
Seattle, Washington

**Lead Concentrations
in Sediment (3 to 5')**

SUM-008-03 FS **FIGURE 6d** May 2021
Dalton, Olmsted & Fuglevand, Inc.



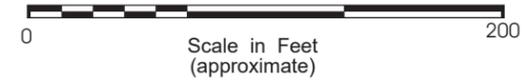
Legend

- Soil/Sediment Sample
- 174** Conc. (mg/kg)
- U** Not Detected
- Outfall
- Stormsewer
- ▭ Former Lagoon

Lead

- <1000 mg/kg
- >1000 to 2,000 mg/kg
- >2000 to 5,000 mg/kg
- >5000 mg/kg

The filled in colored areas were drawn to qualitatively highlight higher concentration areas

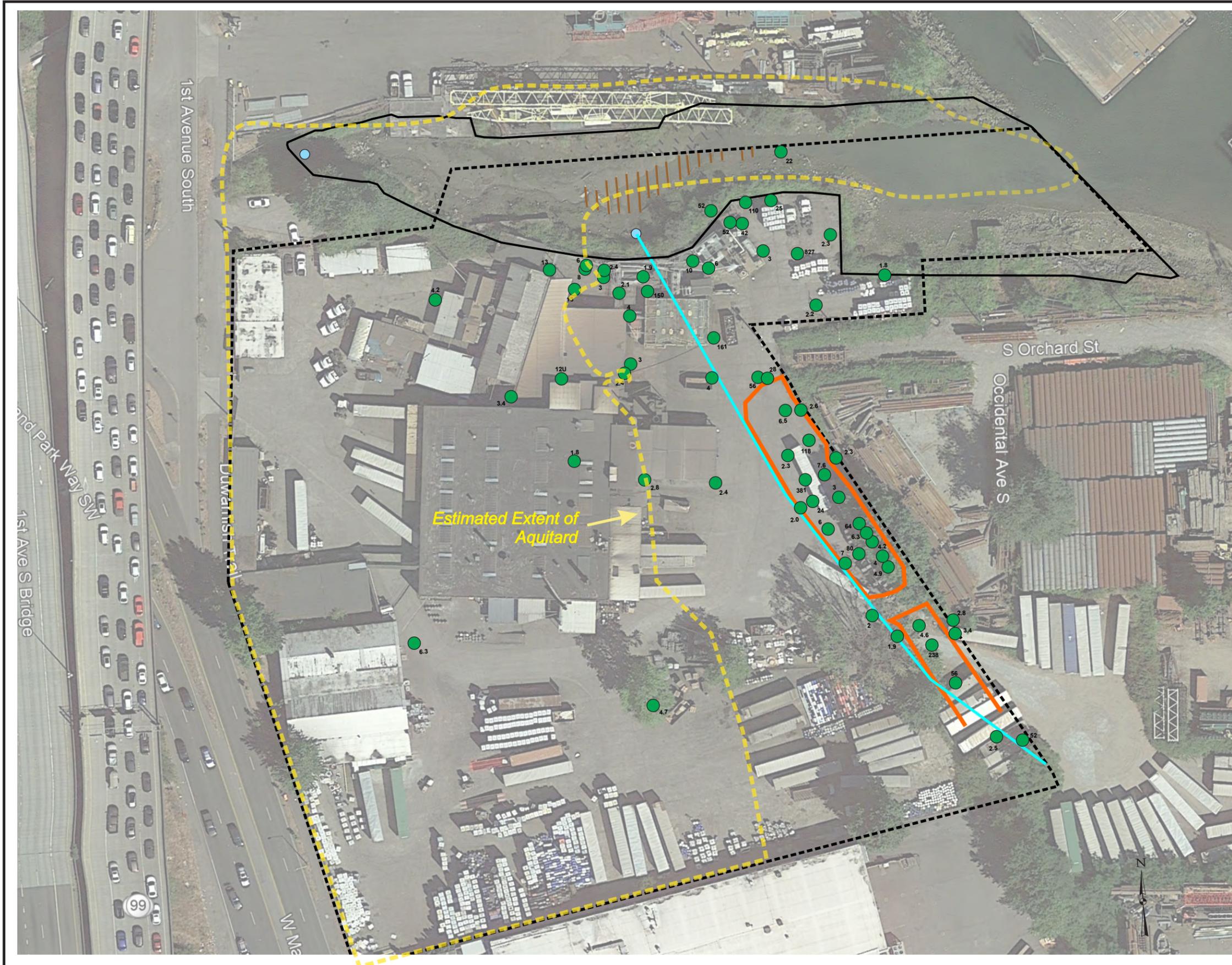


ICS/NW Cooperage Site
Seattle, Washington

Lead Concentrations in Soil and Sediment (5 to 10 Feet)

SUM-008-03FS **FIGURE 6e** May 2021
Dalton, Olmsted & Fuglevand, Inc.

Ref: 5 to 10 feet soil concA.cdr



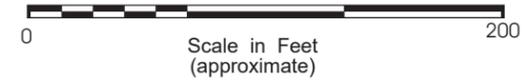
Legend

- Soil/Sediment Sample
- 174** Conc. (mg/kg)
- U** Not Detected
- Outfall
- Stormsewer
- ▭ Former Lagoon

Lead

- <1000 mg/kg
- >1000 to 2,000 mg/kg
- >2000 to 5,000 mg/kg
- >5000 mg/kg

The filled in colored areas were drawn to qualitatively highlight higher concentration areas

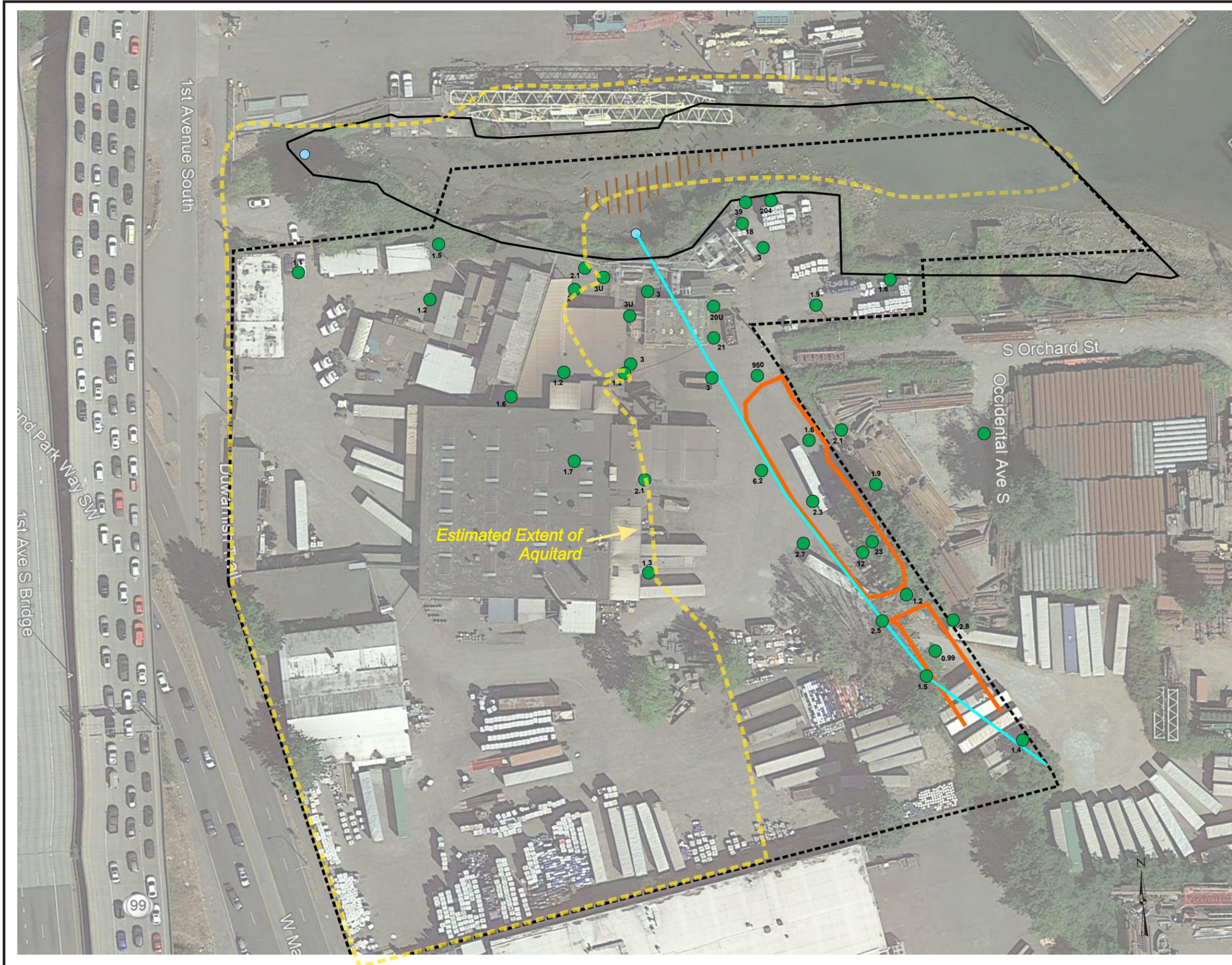


ICS/NW Cooperage Site
Seattle, Washington

Lead Concentrations in Soil and Sediment (10 to 15 Feet)

SUM-008-03FS **FIGURE 6f** May 2021
Dalton, Olmsted & Fuglevand, Inc.

Ref: 10 to 15 feet soil conc.cdr



Legend

- Soil/Sediment Sample
- 174** Conc. (mg/kg)
- U** Not Detected
- Outfall
- Stormsewer
- ▭ Former Lagoon

Lead

- <1000 mg/kg
- >1000 to 2,000 mg/kg
- >2000 to 5,000 mg/kg
- >5000 mg/kg

The filled in colored areas were drawn to qualitatively highlight higher concentration areas

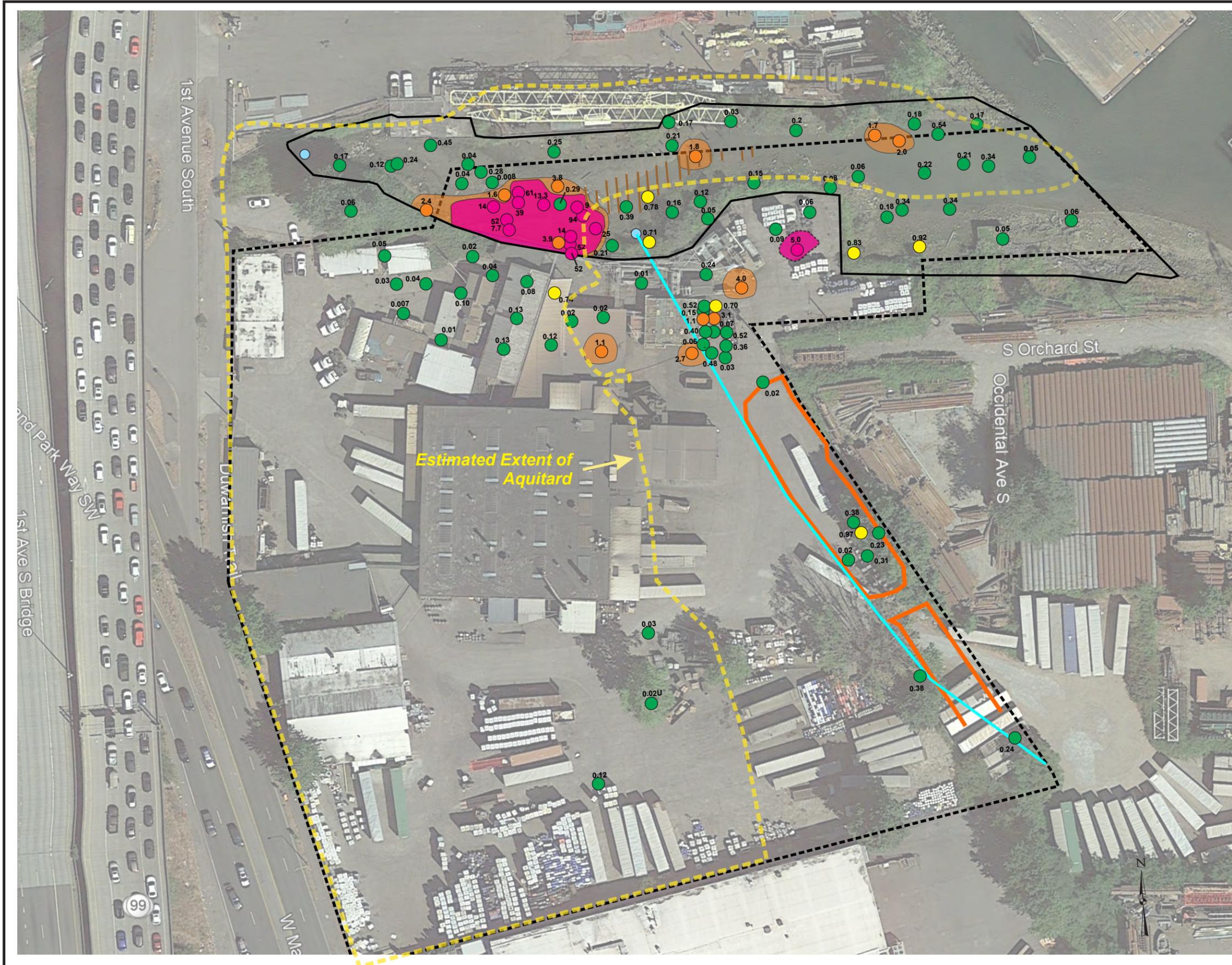
0 200
Scale in Feet (approximate)

ICS/NW Cooperage Site
Seattle, Washington

Lead Concentrations in Soil and Sediment (15 to 20 Feet)

SUM-008-03FS **FIGURE 6g** May 2021
Dalton, Olmsted & Fuglevand, Inc.

Ref: 15 to 20 feet soil conc.cdr



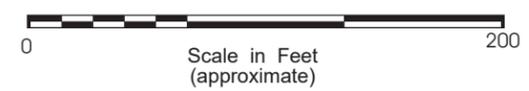
Legend

- Soil/Sediment Sample
- 174** Conc. (mg/kg)
- U** Not Detected
- Outfall
- Stormsewer
- ▭ Former Lagoon

Mercury

- <0.59 mg/kg
- >0.59 to 1.0 mg/kg
- >1.0 to 4.0 mg/kg
- >4.0 mg/kg

The filled in colored areas were drawn to qualitatively highlight higher concentration areas

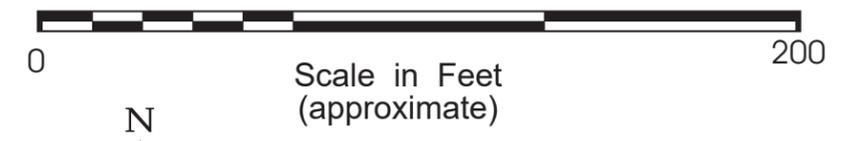
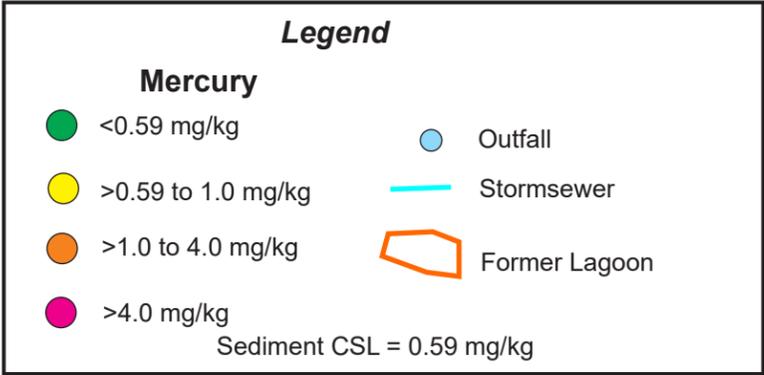
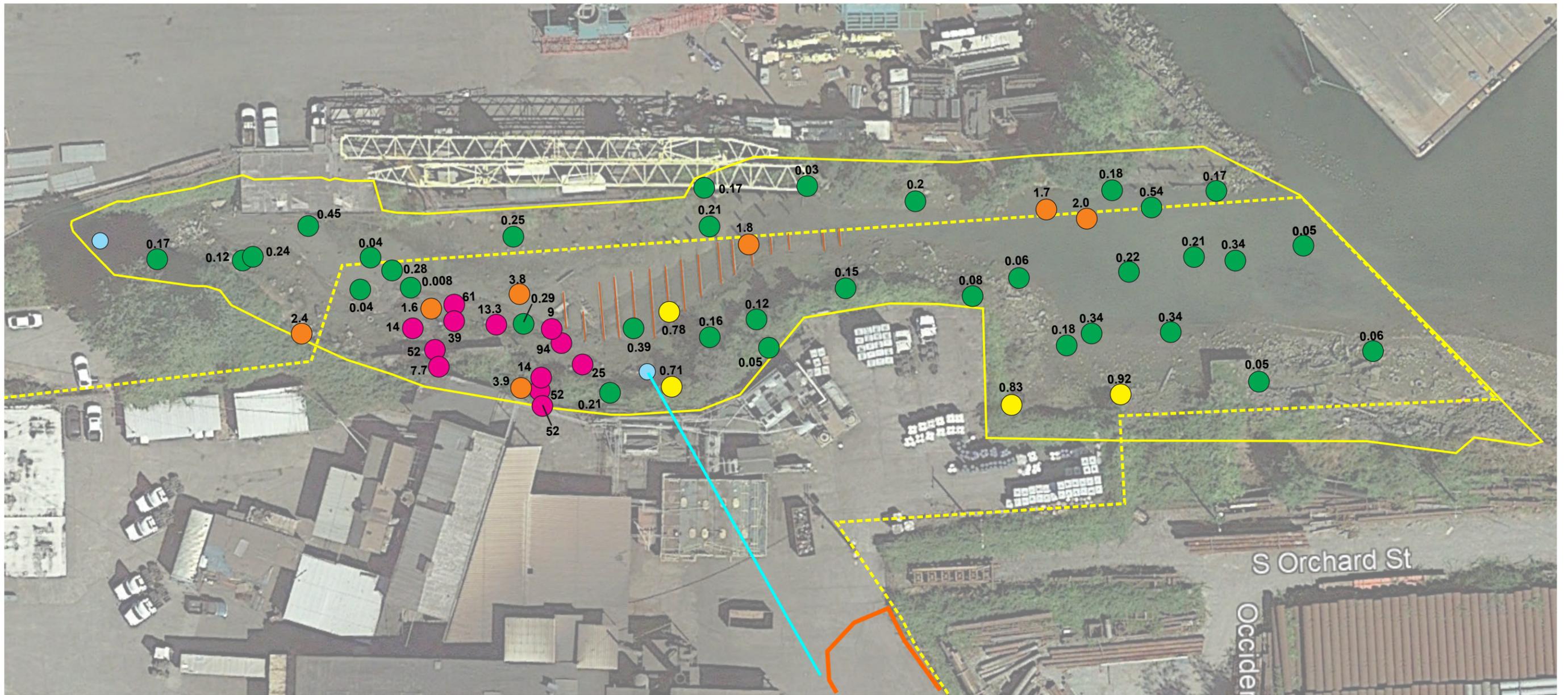


ICS/NW Cooperage Site
Seattle, Washington

Mercury Concentrations in Soil and Sediment (0 to 3.0 Feet)

SUM-008-03FS **FIGURE 7a** May 2021
Dalton, Olmsted & Fuglevand, Inc.

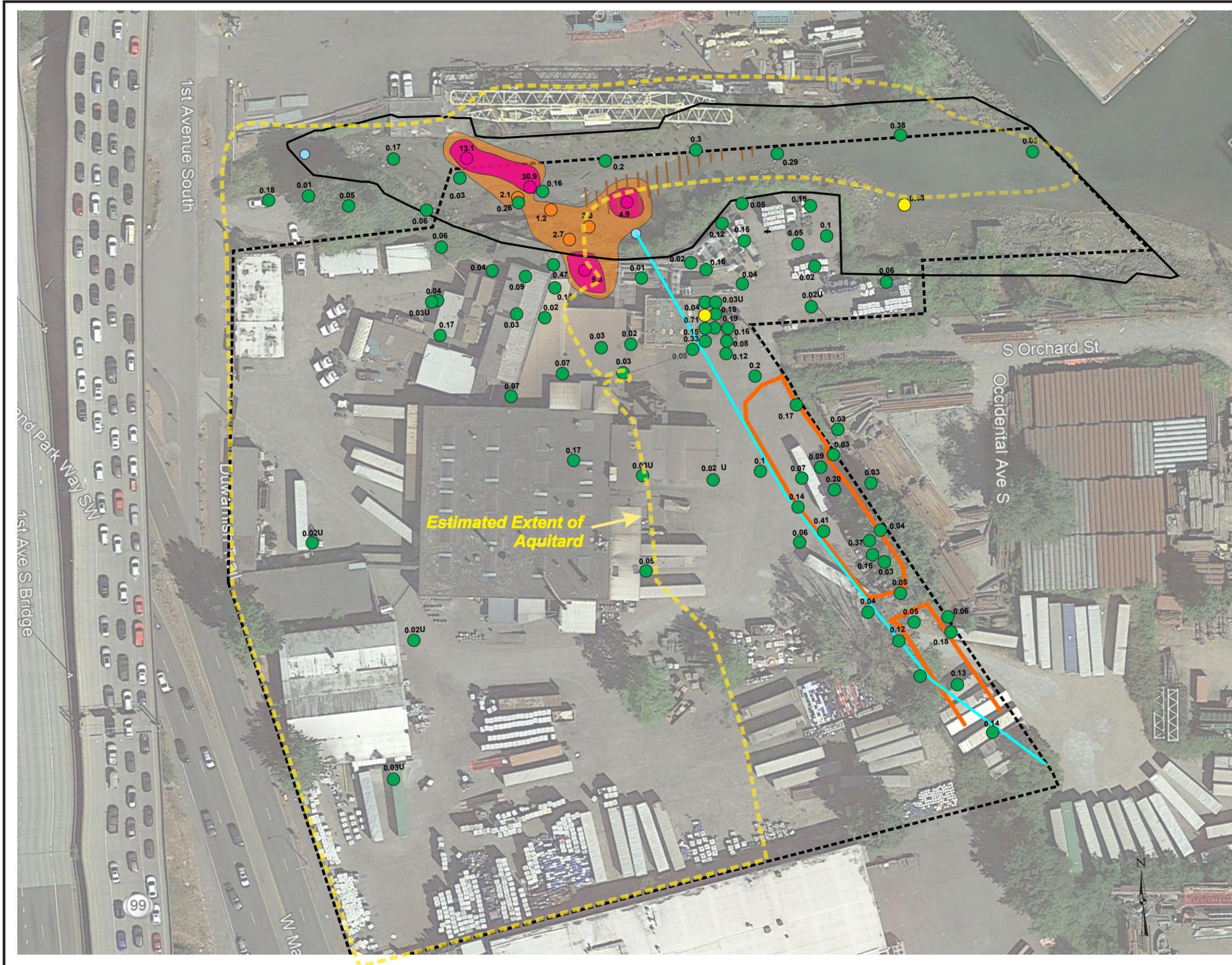
Ref: 0 to 3.0 feet soil concA.cdr



ICS/NW Cooperage
Seattle, Washington

**Mercury Concentrations
in Sediment (approx. <3.0')**

SUM-008-03 FS **FIGURE 7b** May 2021
Dalton, Olmsted & Fuglevand, Inc.



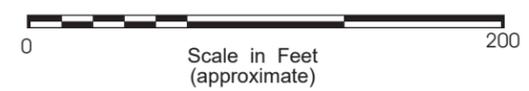
Legend

- Soil/Sediment Sample
- 174** Conc. (mg/kg)
- U** Not Detected
- Outfall
- Stormsewer
- ▭ Former Lagoon

Mercury

- <0.59 mg/kg
- >0.59 to 1.0 mg/kg
- >1.0 to 4.0 mg/kg
- >4.0 mg/kg

The filled in colored areas were drawn to qualitatively highlight higher concentration areas

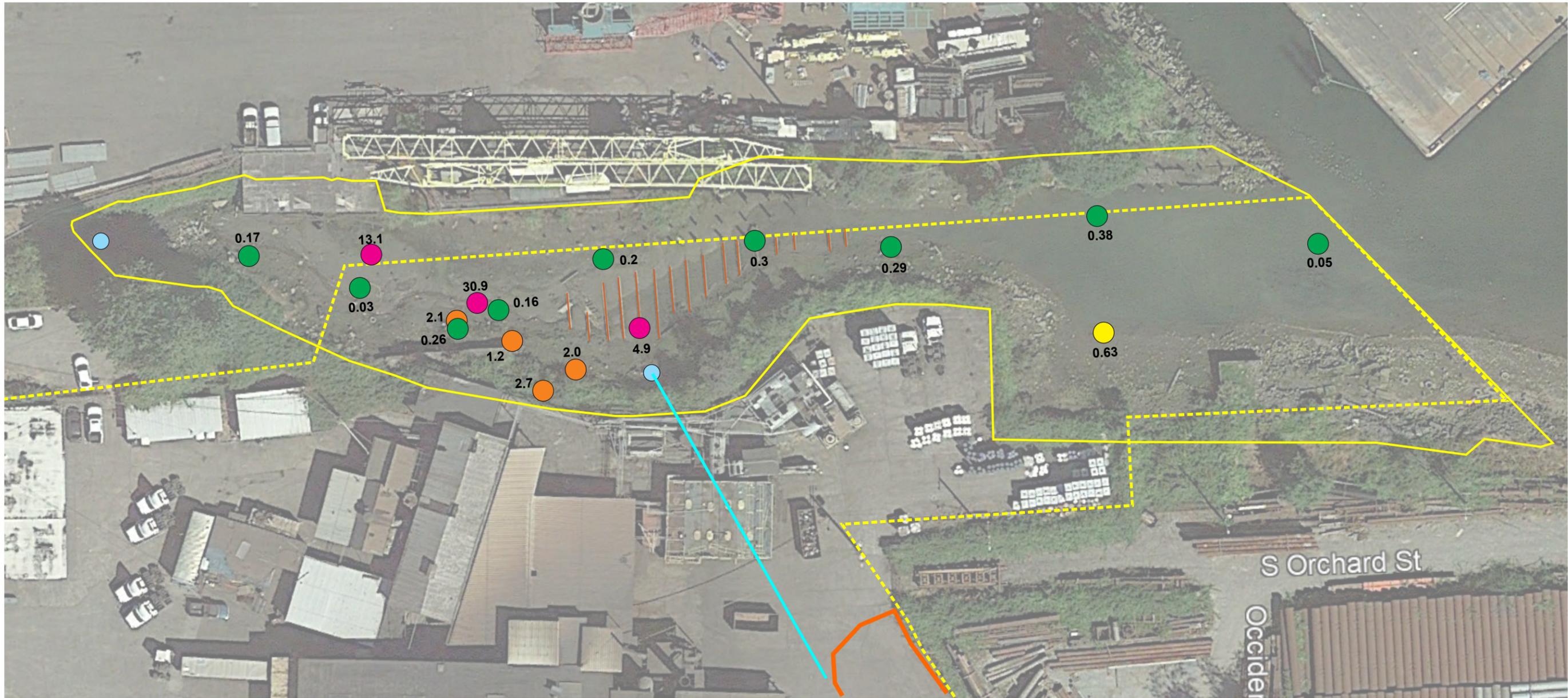


ICS/NW Cooperage Site
Seattle, Washington

Mercury Concentrations in Soil and Sediment (3 to 5 Feet)

SUM-008-03FS **FIGURE 7c** May 2021
Dalton, Olmsted & Fuglevand, Inc.

Ref: 3 to 5 feet soil concA.cdr



Legend

Mercury	○ Sediment Spl.
● <0.59 mg/kg	● Outfall
● >0.59 to 1.0 mg/kg	— Stormsewer
● >1.0 to 4.0 mg/kg	▭ Former Lagoon
● >4.0 mg/kg	○ 0.12 Conc. in mg/kg

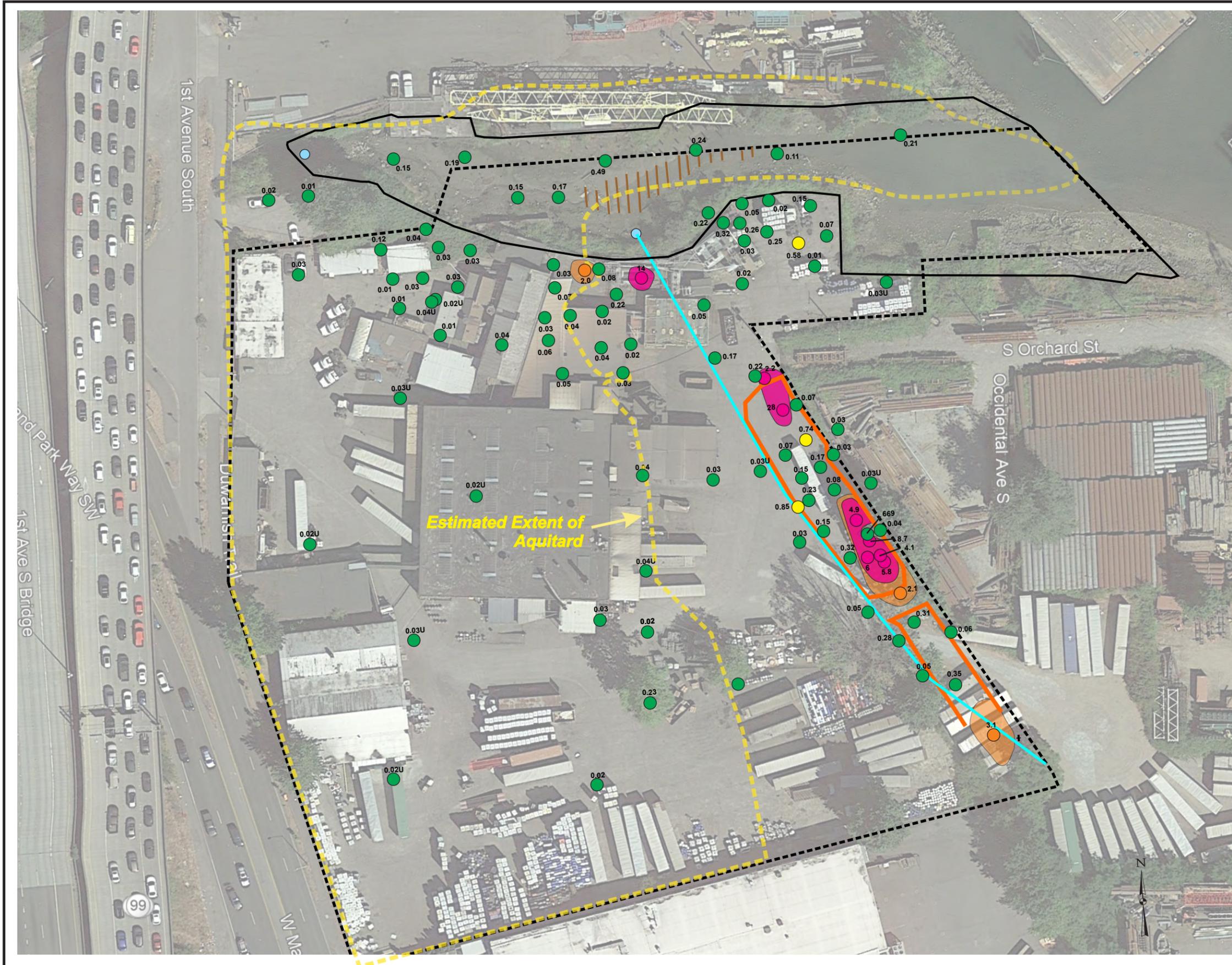
Sediment CSL = 0.59 mg/kg



ICS/NW Cooperage
Seattle, Washington

**Mercury Concentrations
in Sediment (3 to 5')**

SUM-008-03 FS **FIGURE 7d** May 2021
Dalton, Olmsted & Fuglevand, Inc.



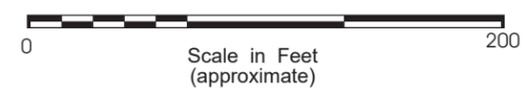
Legend

- Soil/Sediment Sample
- 174** Conc. (mg/kg)
- U** Not Detected
- Outfall
- Stormsewer
- ▭ Former Lagoon

Mercury

- <0.59 mg/kg
- >0.59 to 1.0 mg/kg
- >1.0 to 4.0 mg/kg
- >4.0 mg/kg

The filled in colored areas were drawn to qualitatively highlight higher concentration areas

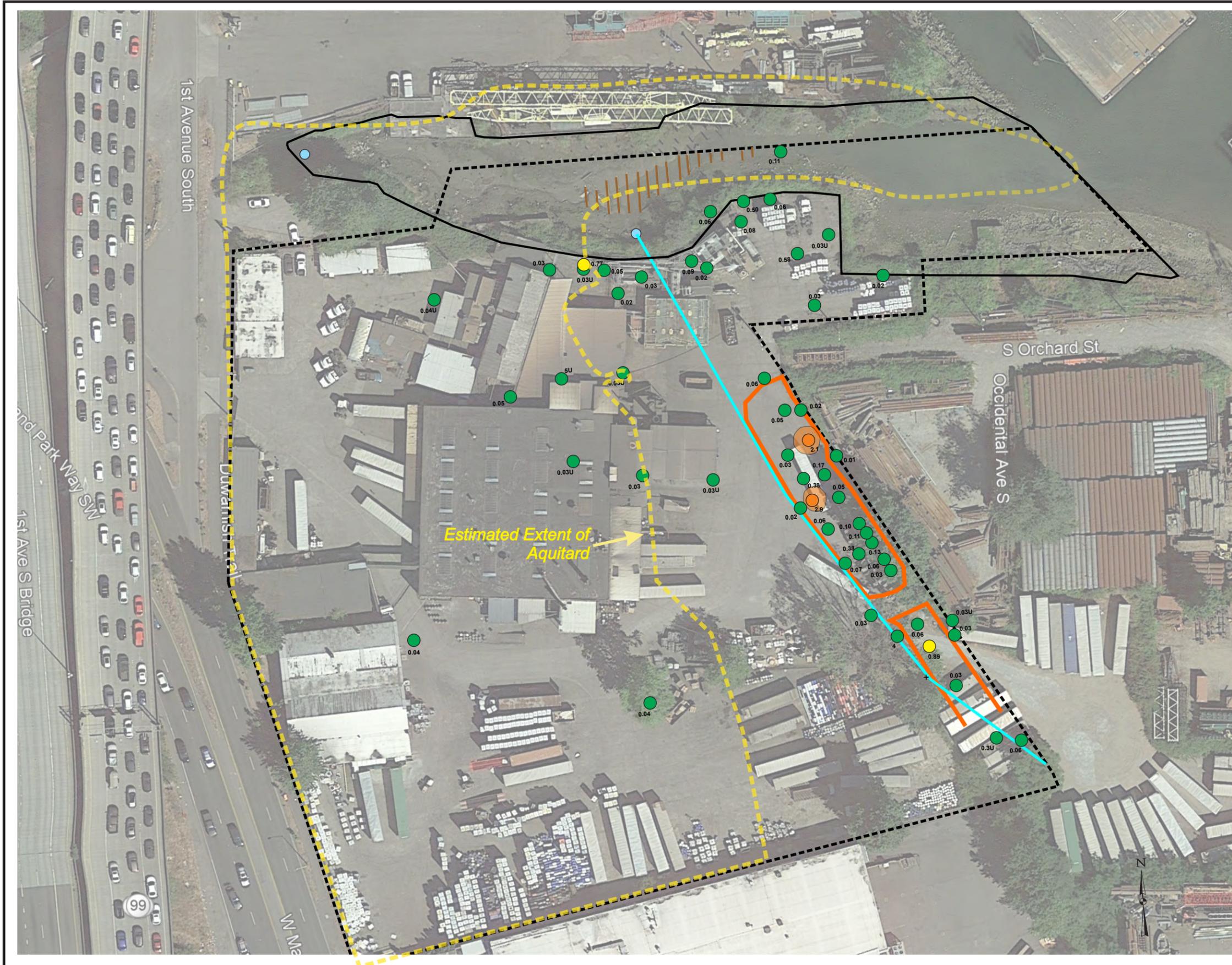


ICS/NW Cooperage Site
Seattle, Washington

Mercury Concentrations in Soil and Sediment (5 to 10 Feet)

SUM-008-03FS **FIGURE 7e** May 2021
Dalton, Olmsted & Fuglevand, Inc.

Ref: 5 to 10 feet soil concA.cdr



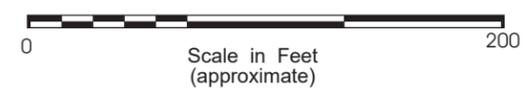
Legend

- Soil/Sediment Sample
- 174** Conc. (mg/kg)
- U** Not Detected
- Outfall
- Stormsewer
- ▭ Former Lagoon

Mercury

- <0.59 mg/kg
- >0.59 to 1.0 mg/kg
- >1.0 to 4.0 mg/kg
- >4.0 mg/kg

The filled in colored areas were drawn to qualitatively highlight higher concentration areas

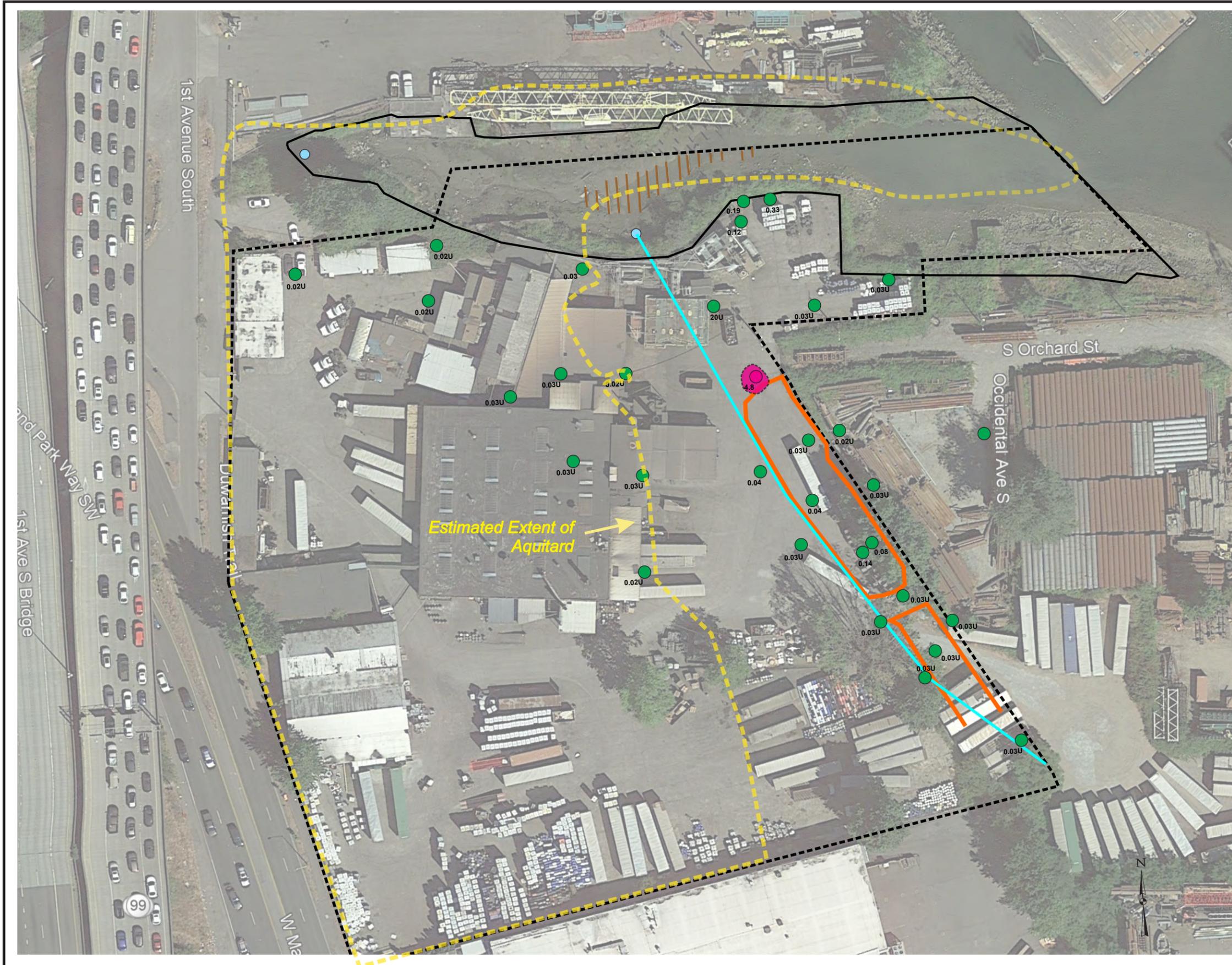


ICS/NW Cooperage Site
Seattle, Washington

Mercury Concentrations in Soil and Sediment (10 to 15 Feet)

SUM-008-03FS **FIGURE 7f** May 2021
Dalton, Olmsted & Fuglevand, Inc.

Ref: 10 to 15 feet soil conc.cdr



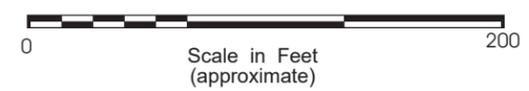
Legend

- Soil/Sediment Sample
- 174** Conc. (mg/kg)
- U** Not Detected
- Outfall
- Stormsewer
- ▭ Former Lagoon

Mercury

- <0.59 mg/kg
- >0.59 to 1.0 mg/kg
- >1.0 to 4.0 mg/kg
- >4.0 mg/kg

The filled in colored areas were drawn to qualitatively highlight higher concentration areas

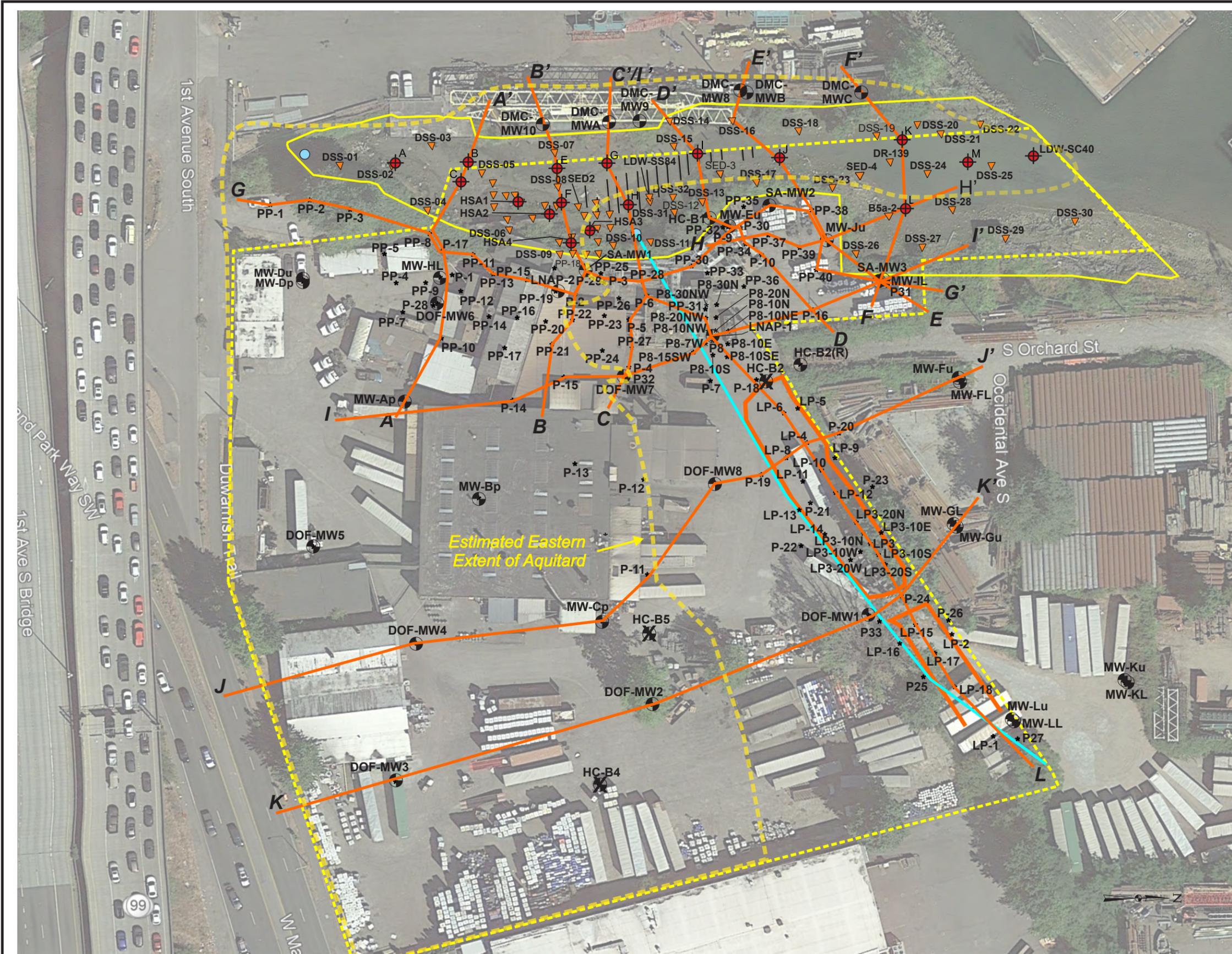


ICS/NW Cooperage Site
Seattle, Washington

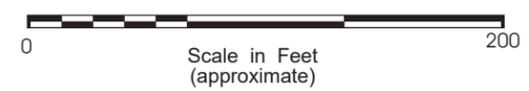
Mercury Concentrations in Soil and Sediment (15 to 20 Feet)

SUM-008-03FS **FIGURE 7g** May 2021
Dalton, Olmsted & Fuglevand, Inc.

Ref: 15 to 20 feet soil conc.cdr



- Legend**
- MW-Ku Monitoring Well
 - HC-B2 Abandoned Well
 - P-24 Push-Probe
 - DSS-30 Surface Sediment Sample
 - J Sediment Core
 - Outfall
 - Stormsewer
 - Former Lagoon
 - PCB Section Trends

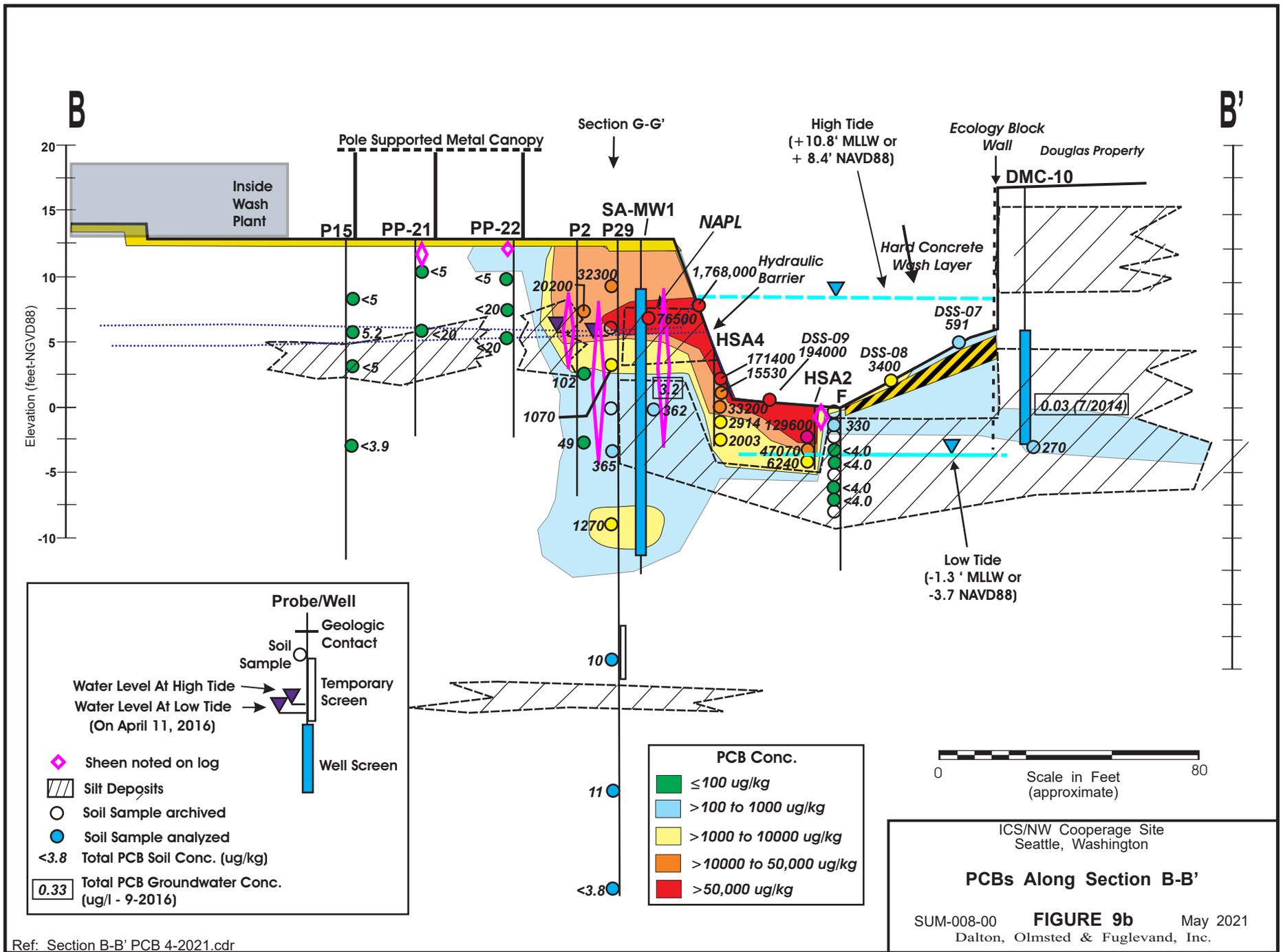


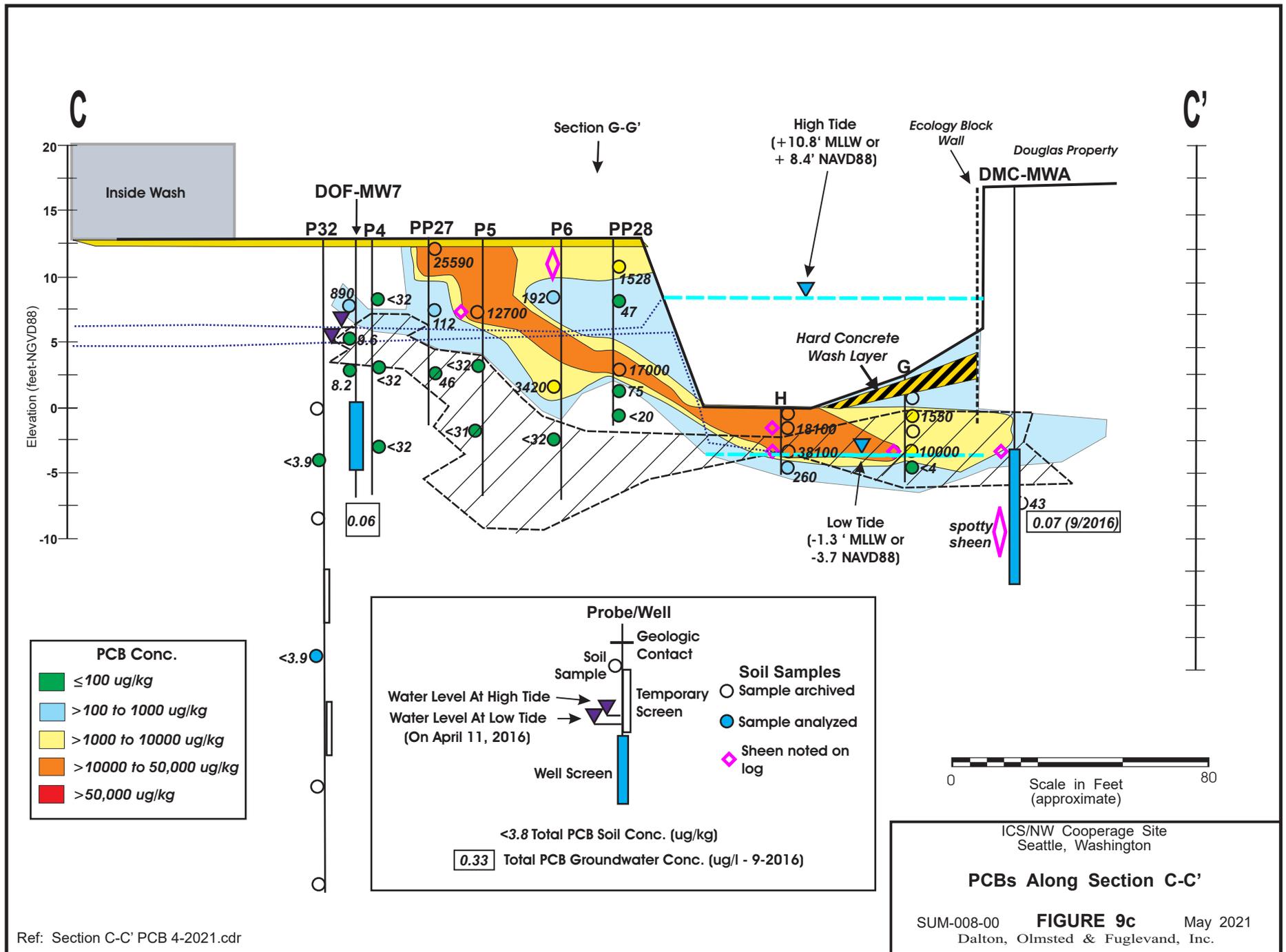
ICS/NW Cooperage
Seattle, Washington

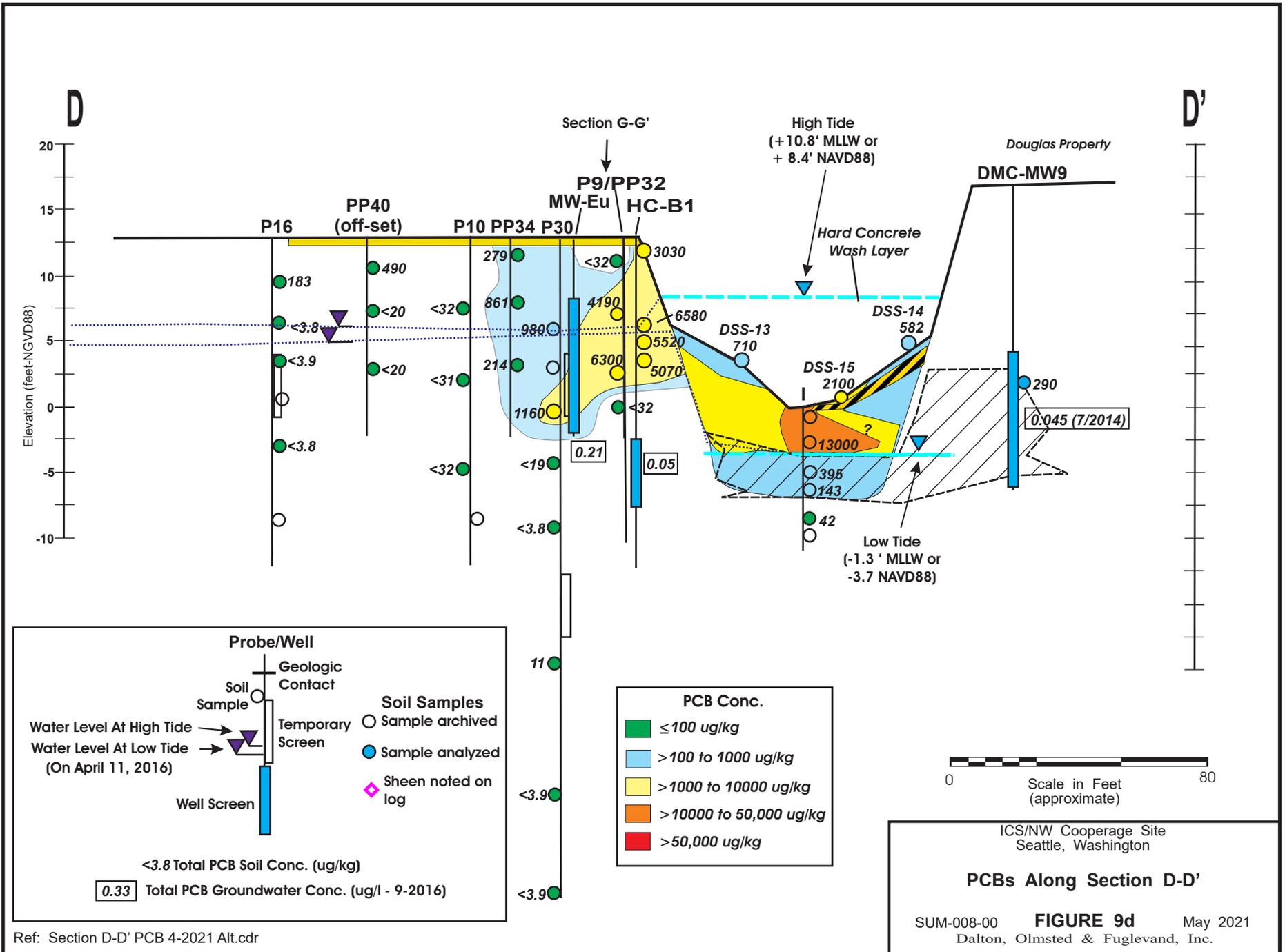
PCB Section Trend Locations

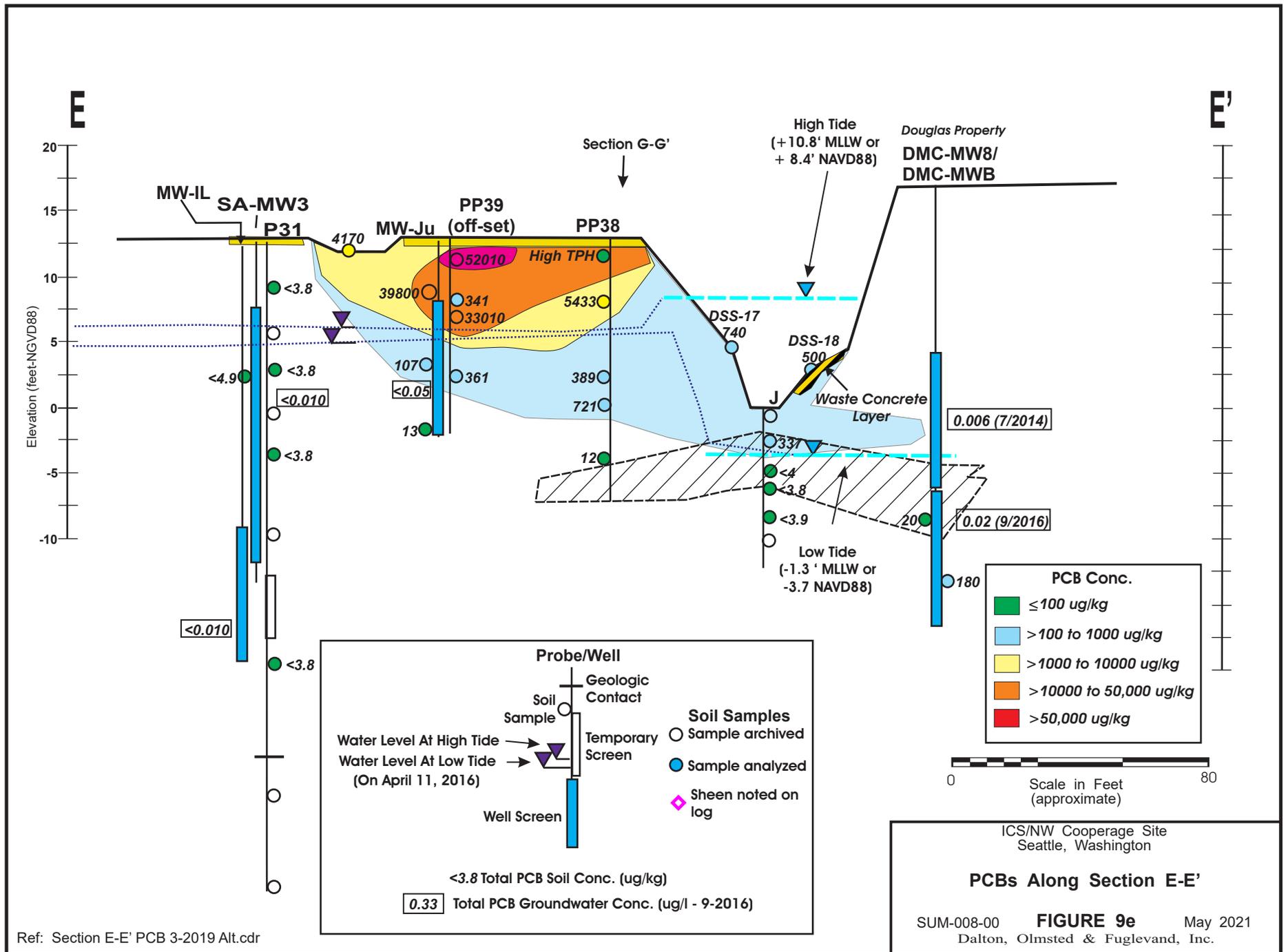
SUM-008-03 FS **FIGURE 8** May 2021
Dalton, Olmsted & Fuglevand, Inc.

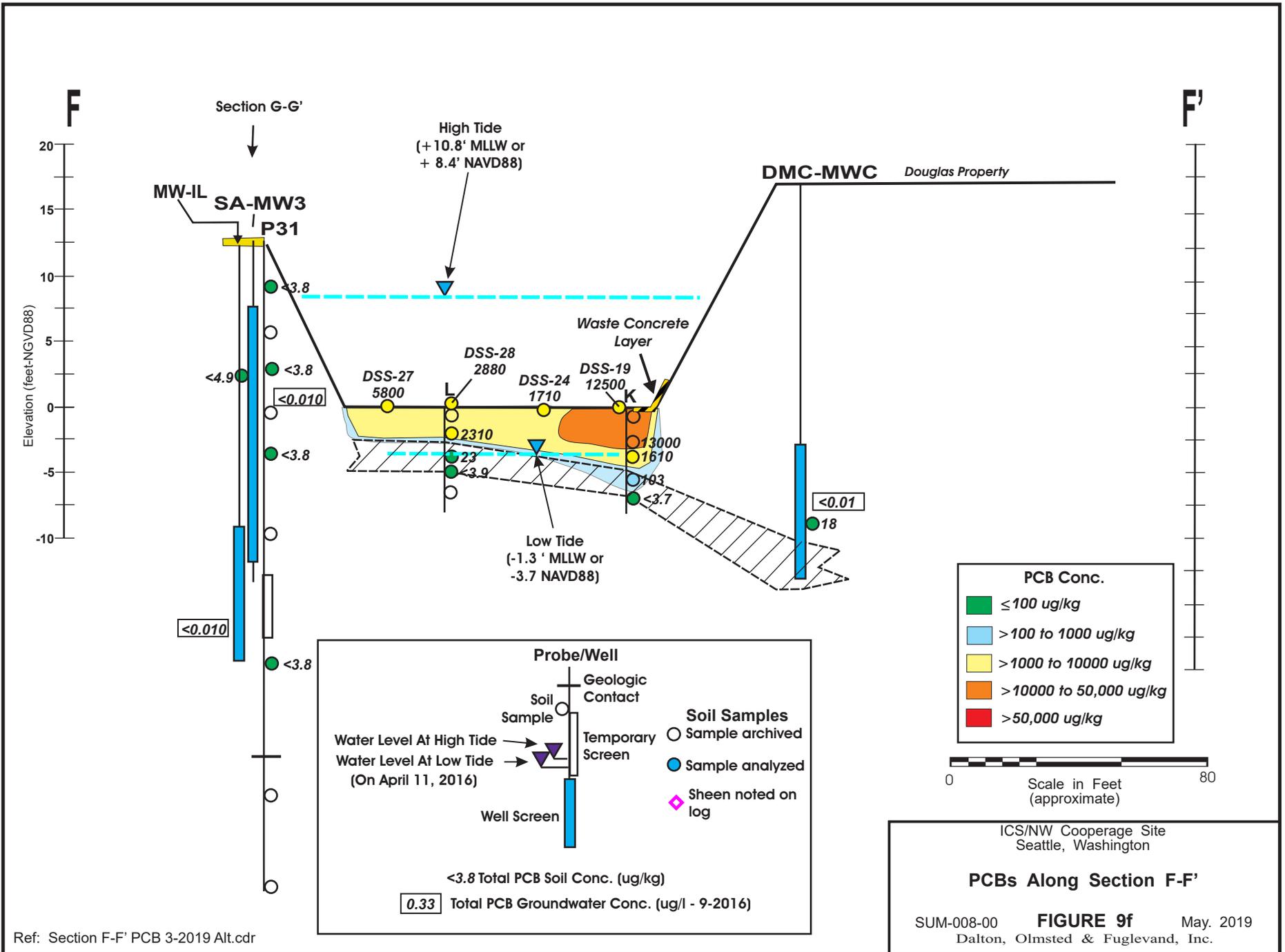
Ref: Section Trends.cdr

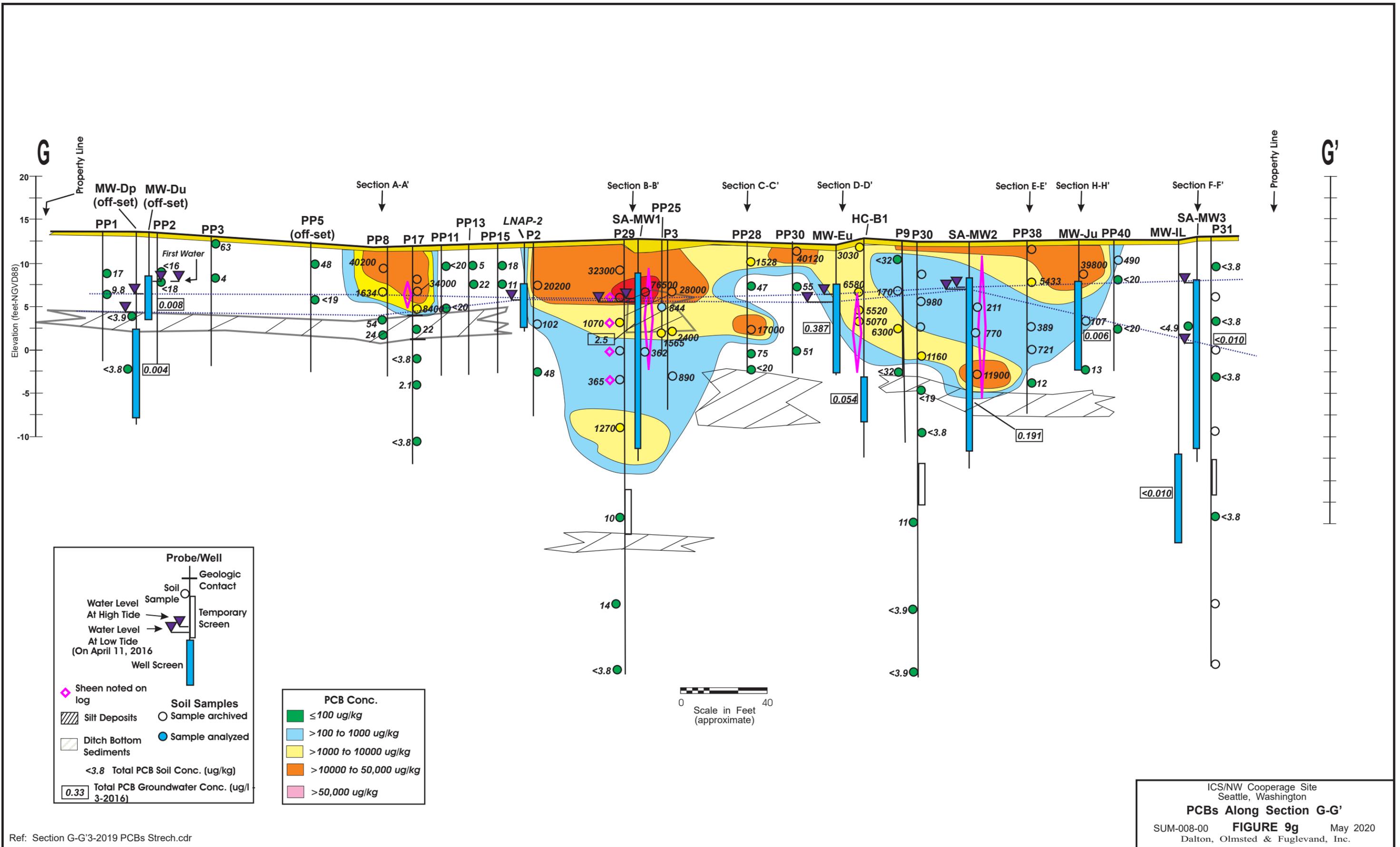






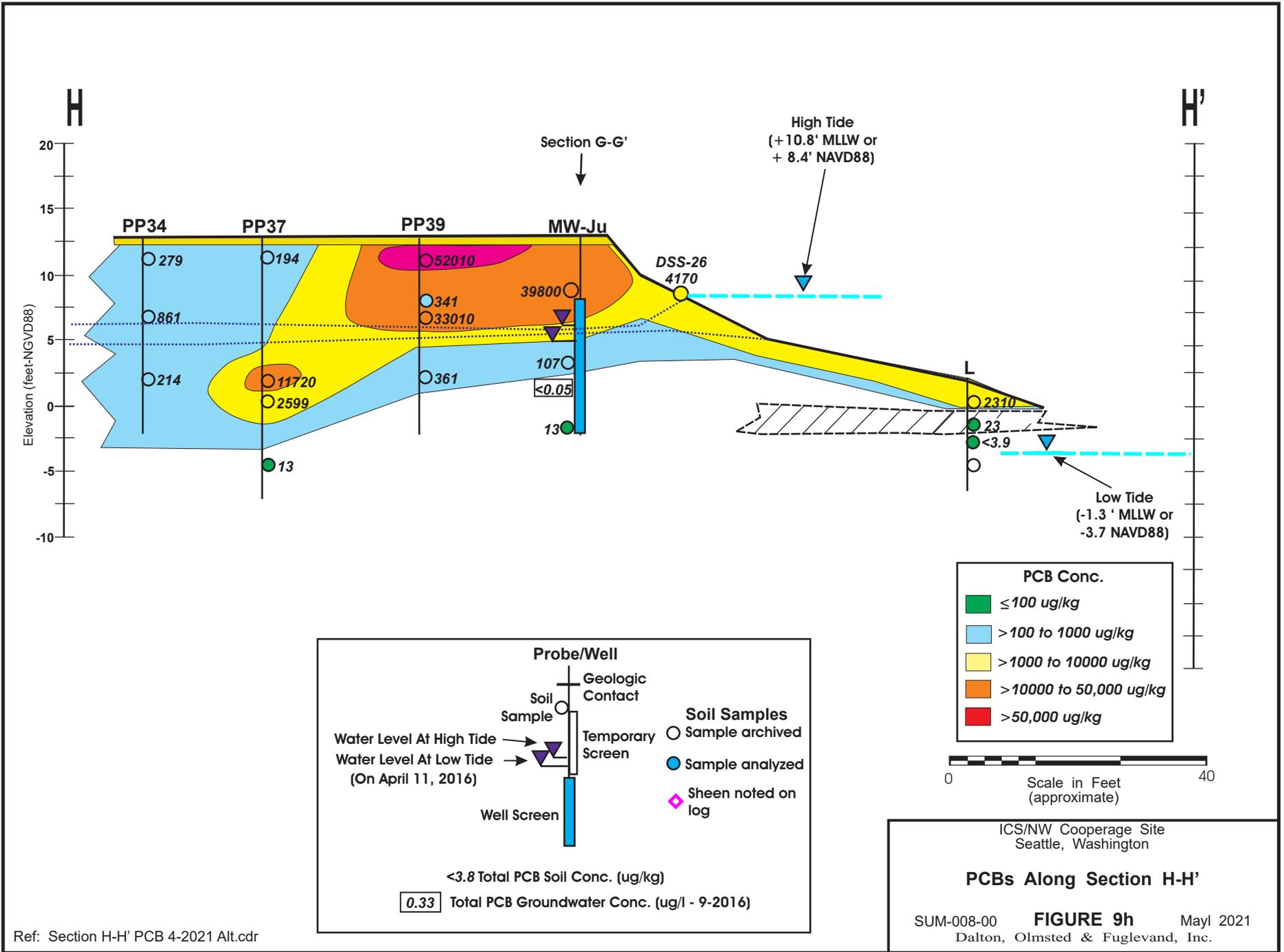






Ref: Section G-G'3-2019 PCBs Strech.cdr

ICS/NW Cooperage Site
 Seattle, Washington
PCBs Along Section G-G'
 SUM-008-00 **FIGURE 9g** May 2020
 Dalton, Olmsted & Fuglevand, Inc.



H

H'

Elevation (feet-NGVD88)

Section G-G'

High Tide
(+ 10.8' MLLW or
+ 8.4' NAVD88)

PP34

PP37

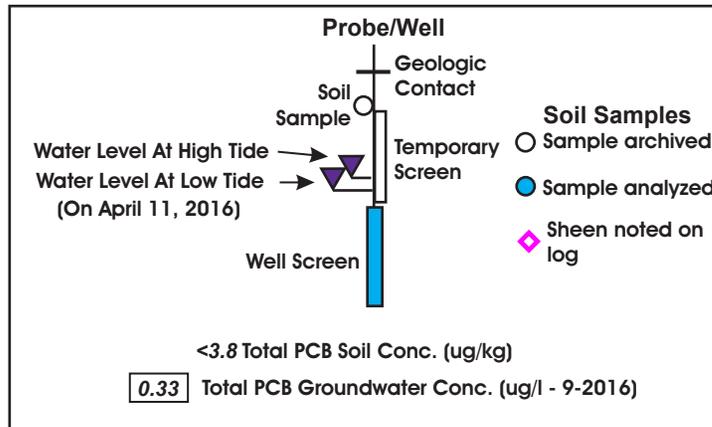
PP39

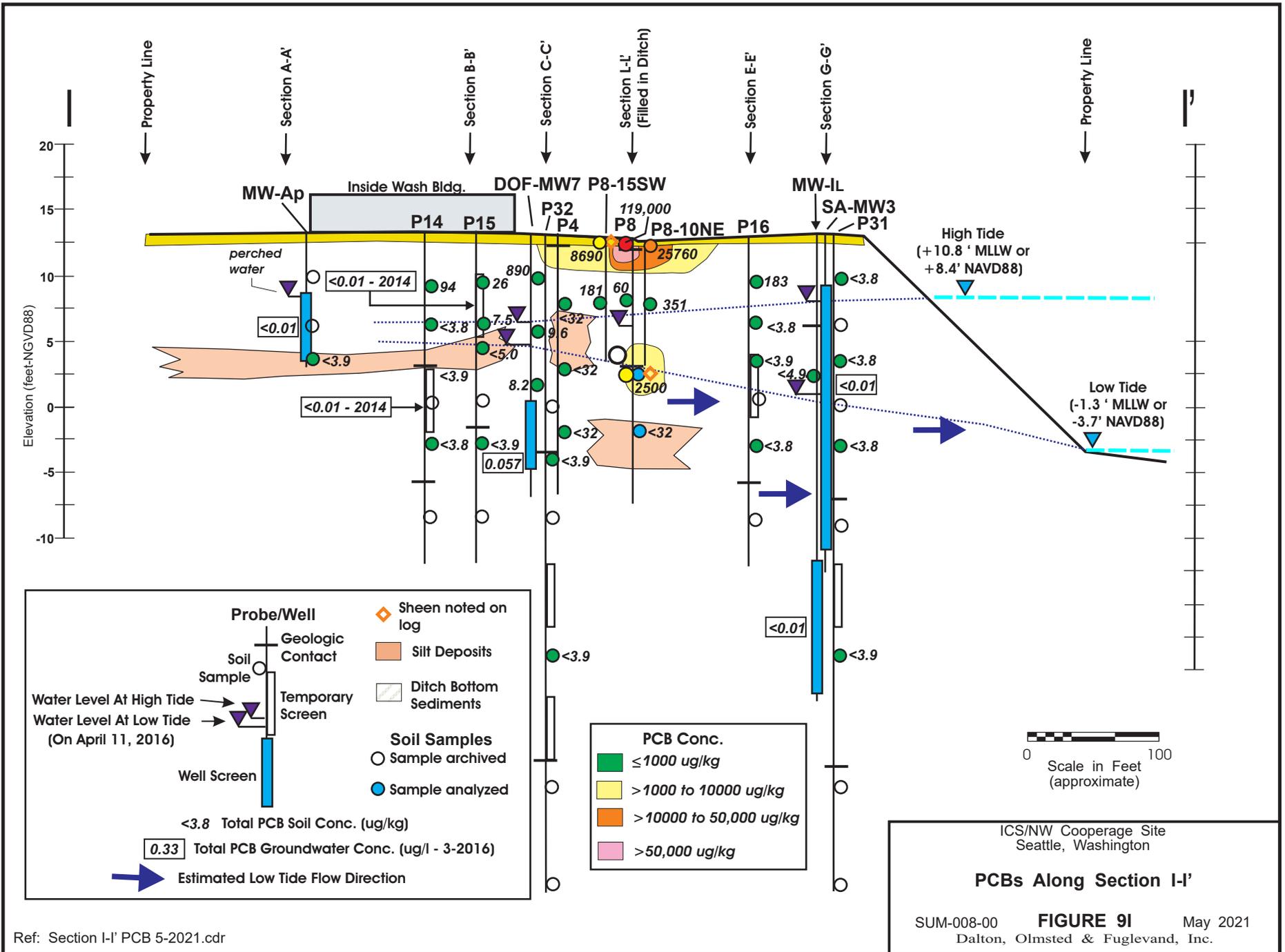
MW-Ju

DSS-26

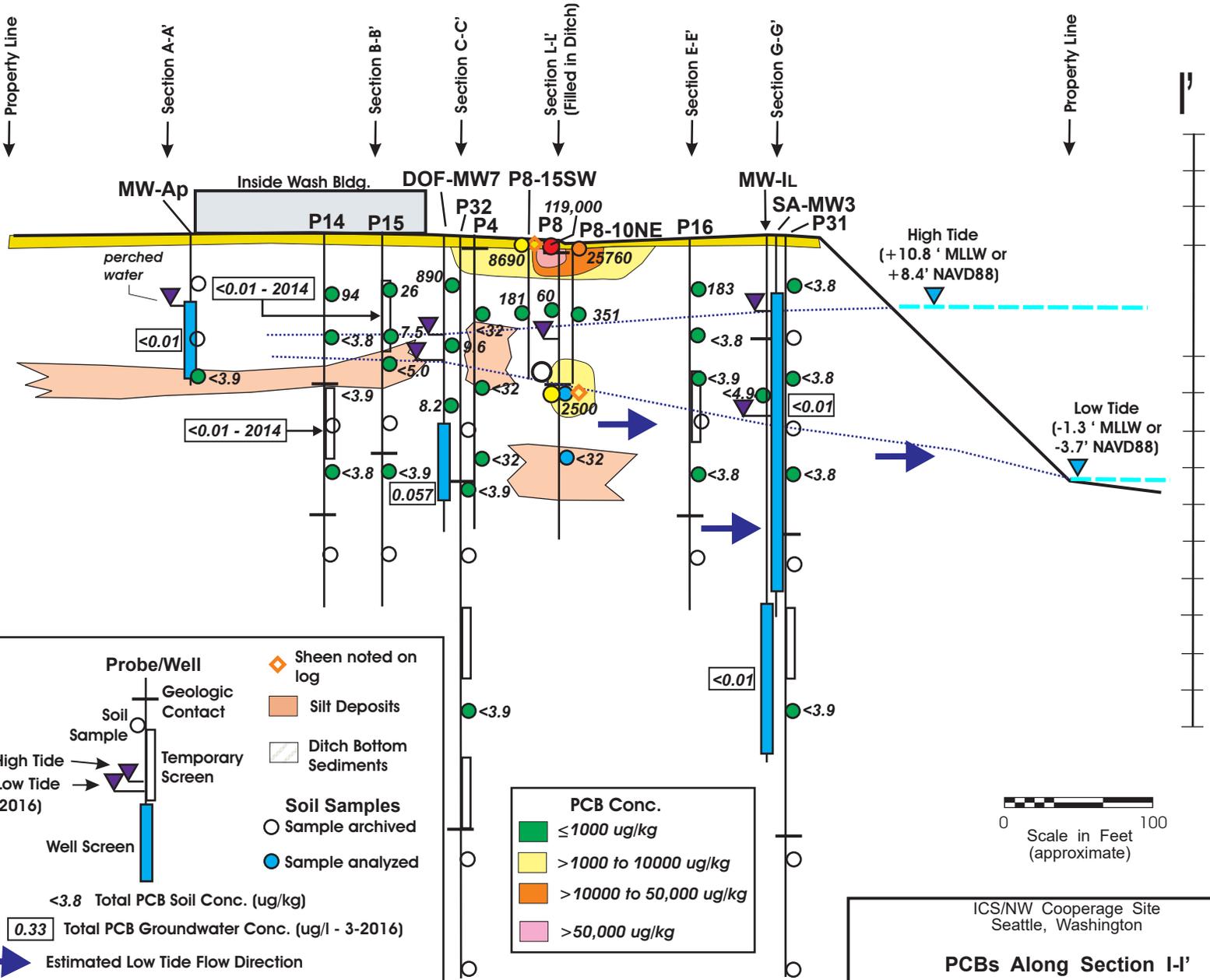
L

Low Tide
(-1.3' MLLW or
-3.7' NAVD88)





Elevation (feet-NGVD88)



Probe/Well

- Geologic Contact
- Soil Sample
- Water Level At High Tide
- Water Level At Low Tide (On April 11, 2016)
- Well Screen

Soil Samples

- Sample archived
- Sample analyzed

<3.8 Total PCB Soil Conc. (ug/kg)

0.33 Total PCB Groundwater Conc. (ug/l - 3-2016)

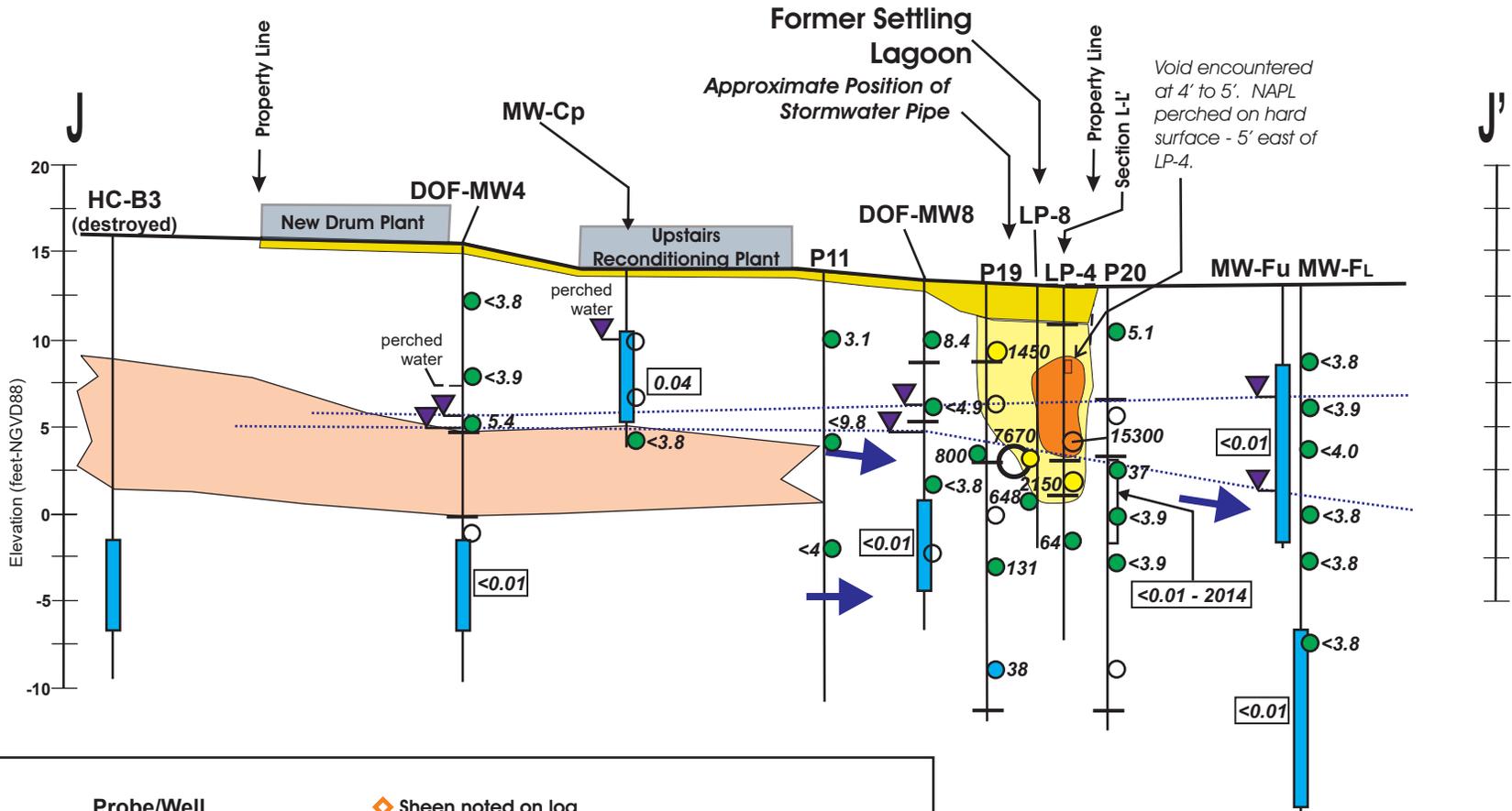
➔ Estimated Low Tide Flow Direction

- ◆ Sheen noted on log
- Silt Deposits
- ▨ Ditch Bottom Sediments

PCB Conc.

- ≤ 1000 ug/kg
- > 1000 to 10000 ug/kg
- > 10000 to 50,000 ug/kg
- > 50,000 ug/kg

0 100
Scale in Feet (approximate)



Void encountered at 4' to 5'. NAPL perched on hard surface - 5' east of LP-4.

Probe/Well

Water Level At High Tide
Water Level At Low Tide (On April 11, 2016)

◆ Sheen noted on log

■ Silt Deposits

▨ Ditch Bottom Sediments

Soil Samples

○ Sample archived

● Sample analyzed

PCB Conc.

- ≤ 1000 ug/kg
- > 1000 to 10000 ug/kg
- > 10000 to 50,000 ug/kg
- > 50,000 ug/kg

<3.8 Total PCB Soil Conc. (ug/kg)

0.33 Total PCB Groundwater Conc. (ug/l - 3-2016)

➔ Estimated Low Tide Flow Direction

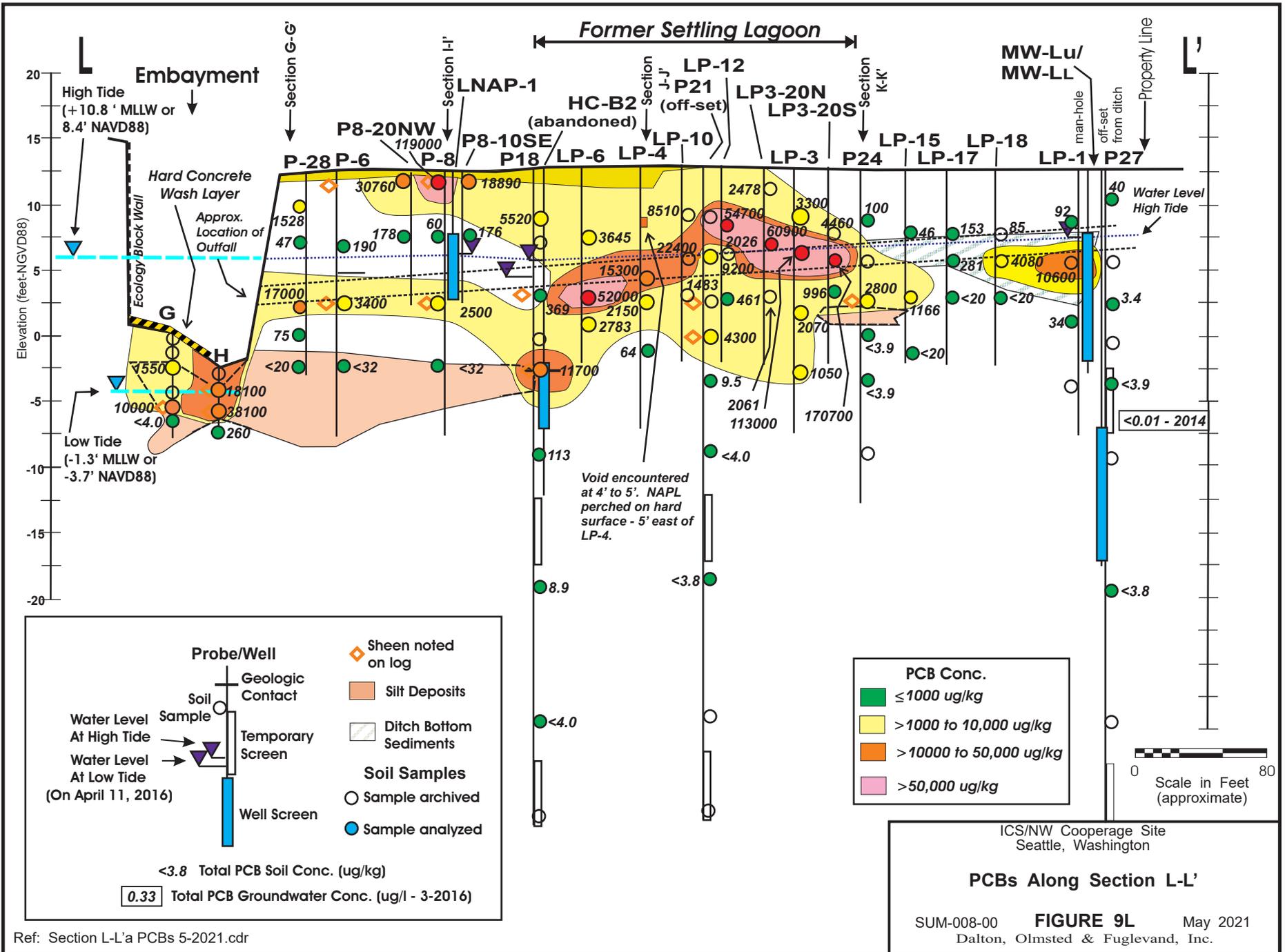


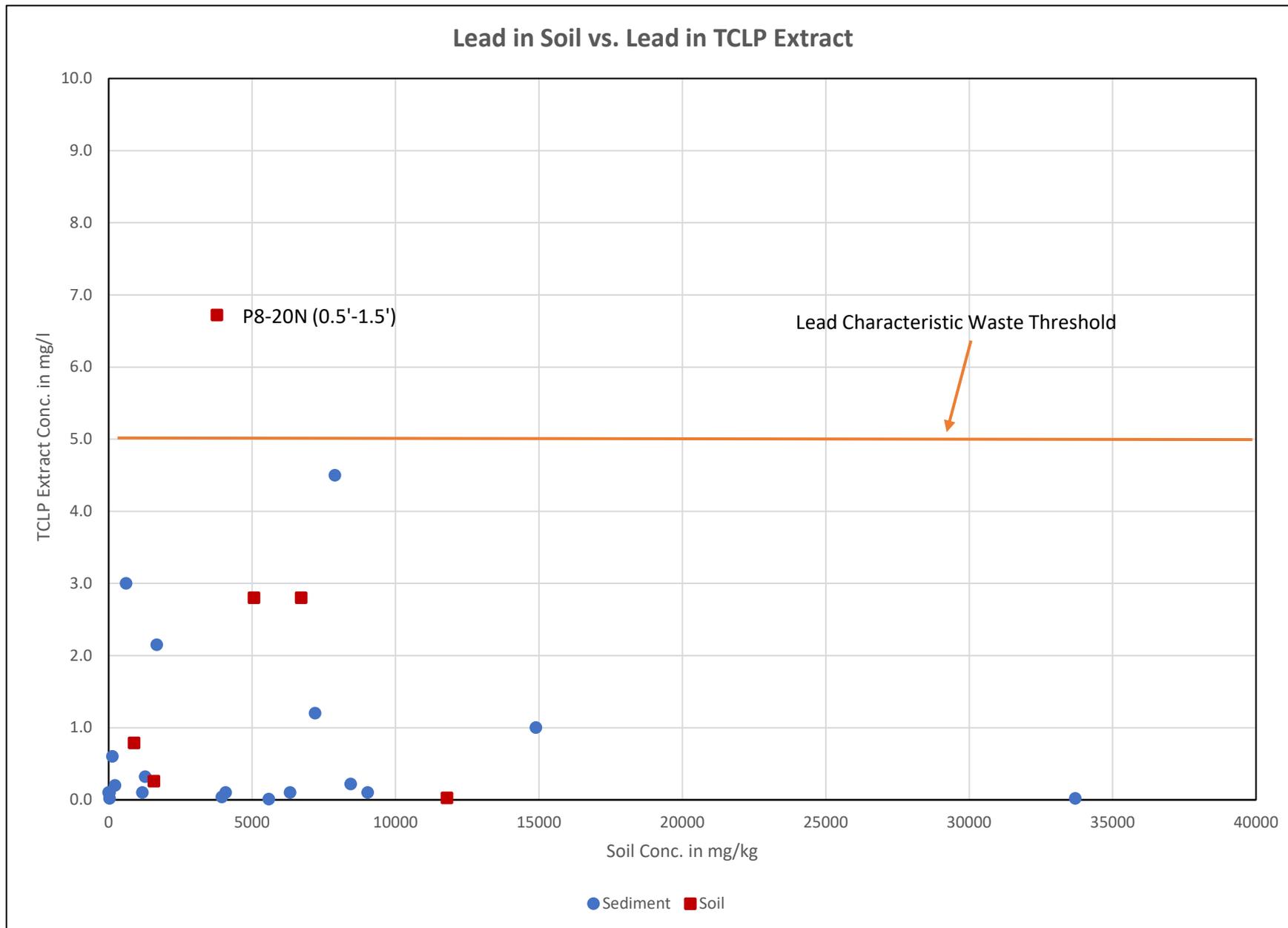
ICS/NW Cooperage Site
Seattle, Washington

PCBs Along Section J-J'

SUM-008-00 **FIGURE 9J** May 2021
Dalton, Olmsted & Fuglevand, Inc.

Ref: Section J-J'5-2021.cdr





**APPENDIX A
WELL, PROBE and CORE LOGS**

**HOT-SPOT CHARACTERIZATION
ICS/NWC
SEATTLE, WASHINGTON**

**EMBAYMENT SEDIMENT CORE LOGS
UPLAND ICS/NWC SITE**

**HOT-SPOT CHARACTERIZATION
ICS/NWC
SEATTLE, WASHINGTON**

SEDIMENT DESCRIPTIONS - OCTOBER 2020 SAMPLES

ICS/Former NW Cooprage
Seattle, WA

Location	Easting	Northing	Depth (feet)	Description
Surface Samples				
HS-1	1269875	200342	0.5-1.0	gravelly, SAND, gray, shells (below concrete wash 0-0.5)
HS-4	1269875	200332	0-0.8	sandy, SILT, heavy sheen, atop concrete wash
HS-5	1269885	200331	0-1	gravelly, sandy, SILT, black, heavy sheen
HS-9	1269875	200323	0-1	silty, SAND, green-black, heavy sheen, odor
HS-10	1269885	200322	0-1	sandy, SILT, black, heavy sheen, odor, gaskets
HS-11	1269905	200322	0-1	gravelly, sandy, SILT, black, medium sheen, oily odor
HS-12	1269915	200322	0-1	gravelly, silty, SAND, black, light sheen
HS-13	1269925	200321	0-1	gravelly, silty, SAND, black, medium sheen, gaskets
HS-14	1269955	200322	0-1	silty, SAND, black, medium sheen
HS-15	1269885	200312	0-1	silty, SAND, black, brick, paint solids, medium sheen, odor
HS-16	1269895	200312	0-1	silty, SAND, black, brick, bung caps, light sheen, odor
HS-17	1269905	200312	0-1	sandy, SILT, black, light sheen, odor
HS-18	1269915	200311	0-1	gravelly, silty, SAND, black, medium sheen, oily odor
HS-19	1269925	200312	0-1	SILT, black, medium sheen, oily odor, gaskets
HS-20	1269935	200312	0-1	silty, SAND, black, heavy sheen, odor, bung cap
HS-21	1269945	200312	0-1	gravelly, silty, SAND, black, heavy sheen, odor, gaskets
HS-22	1269955	200312	0-1	gravelly, SILT, black, heavy sheen, odor, metal shavings
HS-23	1269965	200312	0-1	SILT, black, light sheen
HS-27	1269925	200303	0-1	gravelly, silty, SAND, black, glass, paint solids, odor, sheen
HS-28	1269944	200302	0-1	silty, SAND, black, heavy sheen, odor
HS-29	1269955	200302	0-1	SILT with fine sand, black, heavy sheen, odor
HS-30	1269965	200302	0-1	gravelly, SILT, medium sheen, oily odor
HS-34	1269925	200292	0-1	gravelly, SAND, black, glass, paint solids, odor, sheen
HS-35	1269945	200292	0-1	silty, SAND, black, slag like concretions, Shell Oil cap
HS-36	1269955	200291	0-1	silty, SAND, black, bung caps, gaskets
HS-37	1269925	200283	0-1	silty, SAND, brown, NS, NO
HS-38	1269935	200283	0-1	silty, SAND, brown, rubber gaskets, NS, NO
HS-39	1269945	200282	0-1	silty, SAND, brown, NS, NO
HS-40	1269955	200282	0-1	silty, SAND, with gravel, brown, NS, NO
Hand Core Samples				
HS-6	1269895	200332	2.0-3.0	0-2.0' concrete wash. 2.0-3.0' silty SAND, with shells
HS-7	1269905	200332	3.0-4.0	0-3.0' Concrete wash. 3.0-4.0' gravelly SAND, wire, M sheen
HS-8	1269915	200328	2.5-3.5	0-2.5' Concrete wash. 2.5-3.5' gravelly SAND, H Sheen
HSA1	1269895	200322	1-2	SILT, black, gaskets, heavy sheen
HSA1	1269895	200322	2-3	SILT, grading F sandy, black, M sheen, odor
HSA1	1269895	200322	3-4	F sandy, SILT, light sheen, odor
HSA1	1269895	200322	4.5-5	F sandy, SILT, (carry-down sheen outside sample core)
HSA2	1269920	200314	2-3	silty, SAND, black, wood fragments, H sheen, odor
HSA2	1269920	200314	3-4	silty, SAND, black, wood, bung caps, H sheen, odor
HSA2	1269920	200314	4-5	Fine SAND, with silt, dk gray, trace wood, H sheen, odor
HSA3	1269949	200299	2-3	F sandy, SILT, black, M sheen, odor
HSA3	1269949	200299	3-3.5	Fine SAND, gray, light sheen, odor

SEDIMENT DESCRIPTIONS - OCTOBER 2020 SAMPLES

ICS/Former NW Cooperage
Seattle, WA

Location	Easting	Northing	Depth (feet)	Description
HSA3	1269949	200299	5-6	Fine SAND, dk gray, wood twigs, slight odor
HSA4	1269934	200290	2-3	silty, SAND, black, wood, paint solids, M sheen, odor
HSA4	1269934	200290	3-4	silty, SAND, black, wood, M Sheen, odor
HSA4	1269934	200290	4-5	silty, SAND, black, wood, bung cap, H sheen, odor
HSA4	1269934	200290	5-6	Fine SAND, trace silt, dk gray, wood, (carry down sheen)
HSA4	1269934	200290	6-7	Fine SAND, dk gray, (carry-down sheen outside core)

Sediment Core A

DESCRIPTION OF SEDIMENT SAMPLES AND TESTS - CORE NO.

Field Rep: D. Cooper	Location: N200360 E1269800 NAD83	Drive Length (ft.): 8.0
Drilling Co.: Marine Sampling Systems	Date Completed: 11/20/2012	Recovery Length (ft.): 7.1 Recovery efficiency: 89%
Driller: Bill Jaworski	Time: 0908	Depth to Mudline (ft.): 8.3
Drill Type: Vibracore	Weather: Rain 50F	Tide (MLLW): 10.5
Size/Type Casing: 4"	Date Processed: 11/26/2012	Bottom Elevation (MLLW): 1.7 From 2018 aerial survey

DESCRIPTION OF CORE TUBE (based on recovered core tube length - feet)

Spl. No.	Sample Interval	Time	Sheen	PID (ppm)	Depth Interval	Sample Description
1	0-0.8	1500	NS	1.0	0-0.8	Black, sandy, GRAVEL, w/trace silt, plastic fragment
2	0.8-1.5	1510	LS	2.5	0.8-1.5 1.5-1.8	Black, silty, SAND, w/some silt Grey precipitate, very hard
3	1.8-3.0	1520	LS	3.8	1.8-3.0	Black, silty, Fine SAND shiny, slimy texture, trace wood, sulfurous odor
4	3-4	1525	NS	1.3	3.0-4.0	Black to gray, Fine sandy, SILT grades gray with depth
5	4-5	1530	NS	1.9	4.0-5.5	Grey, silty, Fine SAND
6	5.2-6	1540	NS	1.5	5.5-6.8	Gray, silty, Fine SAND
7	6-6.8	1550	NS	1.8	6.8-7.1	Core catcher

INTERPRETED SUMMARY LOG

(adjusted for recovery)

Depth (Ft.)	Description	Mean Sample Depth
0.9	Sandy, GRAVEL	1 = 0.4'
1.6	Silty, SAND	2 = 1.3'
	-Hard precipitate	
3.3	Silty, Fine SAND	3 = 2.7'
4.5	Fine Sandy, SILT	4 = 3.9'
6.2	Silty, Fine SAND	5 = 5.1'
	SILT	6 = 6.3'
8		7 = 7.2'
	Bottom of core 8.0	
9		
10		
11		
12		

NOTE: The summary log is an interpretation based on samples, drill action, and interpolation. Summary log depths have been adjusted based on recovery efficiency, and material type. Variations between what is shown and actual conditions should be anticipated.

Abbreviations: PID - photoionization detector - MiniRAE 3000
 F - fine
 M - medium
 NS - no sheen
 LS - light sheen
 MS - moderate sheen
 HS - heavy sheen

Sediment Core B

DESCRIPTION OF SEDIMENT SAMPLES AND TESTS - CORE NO.

Field Rep: D. Cooper	Location: N200357 E1269857 NAD83	Drive Length (ft.): 7.7
Drilling Co.: Marine Sampling Systems	Date Completed: 11/20/2012	Recovery Length (ft.): 7.1 Recovery efficiency: 92%
Driller: Bill Jaworski	Time: 1027	Depth to Mudline (ft.): 8.5
Drill Type: Vibracore	Weather: Rain 50F	Tide (MLLW): 11.6
Size/Type Casing: 4"	Date Processed: 11/27/2012	Bottom Elevation (MLLW): 2.9 From 2018 aerial survey

DESCRIPTION OF CORE TUBE (based on recovered core tube length - feet)

**INTERPRETED SUMMARY LOG
 (adjusted for recovery)**

Spl. No.	Sample Interval	Time	Sheen	PID (ppm)	Depth Inteval	Sample Description	Depth (Ft.)	Description	Mean Sample Depth
1	0.5-1.5	1120	-	-	0-0.5	Brown, sandy, GRAVEL	0.5	sandy, GRAVEL	1 = 1.1'
					0.5-1.5	Gray, Precipitate, very hard, with sand, gravel inclusions	1.8	Precipitate	
2	1.5-2.5	1125	NS	5.6	1.5-2.5	Black, sandy, GRAVEL, w/silty sand at base atop 1" thick precipitate layer		Sandy, Gravel	2 = 2.2'
3	2.5-3.5	1135	MS	14.2	2.5-4.5	Black, Fine sandy, SILT, grading to silty, F SAND shiny, slimy appearance, oily odor	2.9		3 = 3.3'
4	3.5-4.5	1145	MS	4.5				Fine Sandy, SILT	4 = 4.4'
5	4.5-5.5	1150	NS	2.6	4.5-6.5	Dark gray, SILT, w/trace F sand, thin organic layer @ 5.5'	5.2		5 = 5.5'
6	5.5-6.5	1155	NS	1.1				SILT	6 = 6.6'
					6.5-7.1	Core catcher	7.7		
							8	Bottom of core 7.7'	
							9		
							10		
							11		
							12		

NOTE: The summary log is an interpretation based on samples, drill action, and interpolation. Depths have been adjusted based on recovery efficiency. Variations between what is shown and actual conditions should be anticipated.

Abbreviations: PID - photoionization detector - MiniRAE 3000
 F - fine
 M - medium
 NS - no sheen
 LS - light sheen
 MS - moderate sheen
 HS - heavy sheen

Sediment Core C

DESCRIPTION OF SEDIMENT SAMPLES AND TESTS - CORE NO.

Field Rep: D. Cooper	Location: N200352 E1269851 NAD83	Drive Length (ft.): 5.0
Drilling Co.: Marine Sampling Systems	Date Completed: 11/20/2012	Recovery Length (ft.): 4.3 Recovery efficiency: 86%
Driller: Bill Jaworski	Time: 0952	Depth to Mudline (ft.): 9.7
Drill Type: Vibracore	Weather: Rain 50F	Tide (MLLW): 11.3
Size/Type Casing: 4"	Date Processed: 11/27/2012	Bottom Elevation (MLLW): 1.9 From 2018 aerial survey

DESCRIPTION OF CORE TUBE (based on recovered core tube length - feet)

Spl. No.	Sample Interval	Time	Sheen	PID (ppm)	Depth Inteval	Sample Description
1	0-0.8	1300	MS	46.2	0-0.8	Black, organic, silty, Fine SAND, fibrous organics, wood, throughout, oily odor
2	0.8-2.2	1305	LS	2.4	0.8-2.2	Black, Fine SAND, with some silt, shiny, loose
3	2.2-3.5	1310	NS	2.5	2.2-3.5	Black to dark gray, SILT, w/trace fine sand
4	3.5-4.0	1315	NS	4.2	3.5-4.0	Dark gray, Fine to Medium SAND Cored 1/2" piece of wood - refusal
					4.0-4.3	Core catcher

INTERPRETED SUMMARY LOG

(adjusted for recovery)

Depth (Ft.)	Description	Mean Sample Depth
0.9	Silty, Fine SAND	1 = 0.5'
2.5	Fine SAND with some silt	2 = 2.3'
3.0	SILT	3 = 3.3'
4.0	Fine to Medium SAND	4 = 4.4'
5.0	Bottom of core 5.0'	
6		
7		
8		
9		
10		
11		
12		

NOTE: The summary log is an interpretation based on samples, drill action, and interpolation. Depths have been adjusted based on recovery efficiency. Variations between what is shown and actual conditions should be anticipated.

Abbreviations: PID - photoionization detector - MiniRAE 3000
 F - fine
 M - medium
 NS - no sheen
 LS - light sheen
 MS - moderate sheen
 HS - heavy sheen

Sediment Core D

DESCRIPTION OF SEDIMENT SAMPLES AND TESTS - CORE NO.

Field Rep: D. Cooper	Location: N200325 E1269895 NAD83	Drive Length (ft.): 8.0
Drilling Co.: Marine Sampling Systems	Date Completed: 11/20/2012	Recovery Length (ft.): 6.0 Recovery efficiency: 75%
Driller: Bill Jaworski	Time: 1104	Depth to Mudline (ft.): 10.4
Drill Type: Vibracore	Weather: Rain 50F	Tide (MLLW): 11.6
Size/Type Casing: 4"	Date Processed: 11/27/2012	Bottom Elevation (MLLW): 1.4 From 2018 aerial survey

DESCRIPTION OF CORE TUBE (based on recovered core tube length - feet)

Spl. No.	Sample Interval	Time	Sheen	PID (ppm)	Depth Inteval	Sample Description
1	0-1.1	1420	HS	368	0-1.1	1" of hard precipitate at surface Black, organic, SAND, w/gravelly precipitate chunks wood, glass, debris, oily odor
2	1.1-2.2	1425	HS	240	1.1-2.2	Black, silty, SAND, w/scattered precipitate, wood oily odor
3	2.2-3.5	1430	LS	33.7	2.2-3.5	Mottled black gray, SILT, with trace fine sand
4	3.5-4.5	1435	NS	4.2	3.5-5.5	Dark gray, SILT
5	4.5-5.5	1440	NS	3.2	5.5-6.0	Core catcher

INTERPRETED SUMMARY LOG

(adjusted for recovery)

Depth (Ft.)	Description	Mean Sample Depth
1.5	Organic, SAND with precipitate	1 = 0.7'
2.9	Silty, SAND with scattered precipitate	2 = 2.1'
4.6	Mottled, SILT with trace fine sand	3 = 3.8'
8	SILT	4 = 5.3'
12	Bottom of core 8.0	5 = 6.7'

NOTE: The summary log is an interpretation based on samples, drill action, and interpolation. Depths have been adjusted based on recovery efficiency. Variations between what is shown and actual conditions should be anticipated.

Abbreviations: PID - photoionization detector - MiniRAE 3000
 F - fine
 M - medium
 NS - no sheen
 LS - light sheen
 MS - moderate sheen
 HS - heavy sheen

Sediment Core F

DESCRIPTION OF SEDIMENT SAMPLES AND TESTS - CORE NO.

Field Rep: D. Cooper	Location: N200322 E1269928 NAD83	Drive Length (ft.): 12.0
Drilling Co.: Marine Sampling Systems	Date Completed: 11/21/2012	Recovery Length (ft.): 9.4 Recovery efficiency: 78%
Driller: Bill Jaworski	Time: 1240	Depth to Mudline (ft.): 9.5
Drill Type: Vibracore	Weather: Rain 50F	Tide (MLLW): 11.0
Size/Type Casing: 4"	Date Processed: 11/27/2012	Bottom Elevation (MLLW): 0.6 From 2018 aerial survey

DESCRIPTION OF CORE TUBE (based on recovered core tube length - feet)

Spl. No.	Sample Interval	Time	Sheen	PID (ppm)	Depth Interval	Sample Description
1	0-0.8	1545	HS	42	0-0.8	Black, gravelly, SAND, with woody debris cemented ash-like fragments, debris, oily odor
2	0.8-1.9	1550	HS	365	0.8-1.9	Black, Fine sandy, SILT, with scattered wood shiny, oily odor, barrel bung gaskets
3	1.9-3.0	1555	LS	5.4	1.9-4.1	Mottled black-gray (banded), SILT, soft, shiny, oily odor
4	3-4	1600	NS	2.9	4.1-7.1	Mottled black-gray, SILT, mussle shells @ 5' grading fine sandy from 6.5-7' 1" wood branch @ 6'
5	4-5	1605	NS	68		
6	5-6	1610	NS	2.8		
7	6-7	1615	NS	2.5	7.1-9.0	Gray, Fine SAND 1" wood branch @ 8.5'
8	7.1-8	1620	NS	1.4		
9	8-9	1625	NS	3.2	9-9.4	Core catcher

**INTERPRETED SUMMARY LOG
 (adjusted for recovery)**

Depth (Ft.)	Description	Mean Sample Depth
1	Gravelly, SAND	1 = 0.5'
2.4	Fine sandy, SILT	2 = 1.7'
3	Banded, SILT	3 = 3.1'
4		4 = 4.5'
5.2		
5	SILT	5 = 5.8'
6		6 = 7.0'
7		7 = 8.3'
9.1		
8	Fine SAND	8 = 9.7'
9		9 = 10.9'
12		

Bottom of core 12.0

NOTE: The summary log is an interpretation based on samples, drill action, and interpolation. Depths have been adjusted based on recovery efficiency. Variations between what is shown and actual conditions should be anticipated.

Abbreviations: PID - photoionization detector - MiniRAE 3000
 F - fine
 M - medium
 NS - no sheen
 LS - light sheen
 MS - moderate sheen
 HS - heavy sheen

Sediment Core G

DESCRIPTION OF SEDIMENT SAMPLES AND TESTS - CORE NO.

Field Rep: D. Cooper	Location: NN200350 E1269965 NAD83	Drive Length (ft.): 8.0
Drilling Co.: Marine Sampling Systems	Date Completed: 11/21/2012	Recovery Length (ft.): 6.8 Recovery efficiency: 85%
Driller: Bill Jaworski	Time: 0828	Depth to Mudline (ft.): 5.1
Drill Type: Vibracore	Weather: Rain 50F	Tide (MLLW): 7.7
Size/Type Casing: 4"	Date Processed: 11/28/2012	Bottom Elevation (MLLW): 3.6 From 2018 aerial survey

DESCRIPTION OF CORE TUBE (based on recovered core tube length - feet)

**INTERPRETED SUMMARY LOG
 (adjusted for recovery)**

Spl. No.	Sample Interval	Time	Sheen	PID (ppm)	Depth Inteval	Sample Description	Depth (Ft.)	Description	Mean Sample Depth
1	0-1	955	-	-	0-1.0	Gray, sandy, GRAVEL, cemented	1.2	Sandy, GRAVEL	1 = 0.6'
2	1-2.1	1000	LS	1.4	1.0-2.1	Black, silty, SAND, with scattered wood, sulfurous odor	2.4	Silty, SAND	2 = 1.8'
3 DUP1	2.1-3	1015 1016	LS	1.2	2.1-2.8 2.8-3.5	Black, SILT, soft, shiny, slight oil odor Gray to black, Fine SAND, with scattered wood		Black SILT -Fine sand	3 = 3.0'
4	3-4	1020	LS	1.2	3.5-4.2	Black, SILT, soft, shiny, oily odor			4 = 4.1'
5	4-4.8	1025	HS	36.5	4.2-4.8	Black, Fine sandy, SILT, soft, shiny, strong oily odor lamp black, fine woody debris	5.6		5 = 5.1'
6	5.1-6.5	1030	NS	1.0	4.8-6.5 6.5-6.8	Gray, SILT, with some fine sand wood, shells from 4.8-5.1 becomes black/reduced from 6-6.5 with scattered shells Core catcher		Gray SILT	6 = 6.8'
							8	Bottom of core 8.0	
							9		
							10		
							11		
							12		

NOTE: The summary log is an interpretation based on samples, drill action, and interpolation. Depths have been adjusted based on recovery efficiency. Variations between what is shown and actual conditions should be anticipated.

Abbreviations: PID - photoionization detector - MiniRAE 3000
 F - fine
 M - medium
 NS - no sheen
 LS - light sheen
 MS - moderate sheen
 HS - heavy sheen

Sediment Core H

DESCRIPTION OF SEDIMENT SAMPLES AND TESTS - CORE NO.

Field Rep: D. Cooper	Location: N200317 E1269980 NAD83	Drive Length (ft.): 12.0
Drilling Co.: Marine Sampling Systems	Date Completed: 11/21/2012	Recovery Length (ft.): 5.6 Recovery efficiency: 46%**
Driller: Bill Jaworski	Time: 0858	Depth to Mudline (ft.): 8.6
Drill Type: Vibracore	Weather: Rain 50F	Tide (MLLW): 8.7
Size/Type Casing: 4"	Date Processed: 11/28/2012	Bottom Elevation (MLLW): 0.1 From 2018 aerial survey

DESCRIPTION OF CORE TUBE (based on recovered core tube length - feet)

**INTERPRETED SUMMARY LOG
 (adjusted for recovery)**

Spl. No.	Sample Interval	Time	Sheen	PID (ppm)	Depth Inteval	Sample Description	Depth (Ft.)	Description	Mean Sample Depth
1	0-0.8	1140	LS	1.4	0-0.8	Black, sandy, GRAVEL, with coal	0.8	Sandy, GRAVEL	1 = 0.4'
2	0.8-2.5	1145	MS	4.3	0.8-2.5	Mottled gray, silty, SAND, with some gravel, brick, wood fibrous organics mixed in throughout, oily odor	2.5	Silty, SAND	2 = 1.7'
3	2.5-4.1	1150	HS	28.8	2.5-4.1	Black, interbedded SILT and Fine SAND, shiny oily odor, fine coal		Interbedded SILT with Fine SAND	3 = 3.3'
4	4.1-5.2	1155	NS	2.1	4.1-5.2	Dark gray, silty, Fine SAND, with wood fibers Cored 3" thick wood at base - shaved piling likely driven ahead to 12' without additional recovery	4.1		
					5.2-5.6	Core catcher	5.6	Fine SAND	4 = 4.7'
							6	Bottom of Core 5.6' see note **	
							7		
							8		
							9		
							10		
							11		
							12		

NOTE: The summary log is an interpretation based on samples, drill action, and interpolation. Depths have been adjusted based on recovery efficiency. Variations between what is shown and actual conditions should be anticipated.

** This core encountered wood at 5' and was likely driven ahead rather than compacted/displaced

Abbreviations: PID - photoionization detector - MiniRAE 3000
 F - fine
 M - medium
 NS - no sheen
 LS - light sheen
 MS - moderate sheen
 HS - heavy sheen

Sediment Core I

DESCRIPTION OF SEDIMENT SAMPLES AND TESTS - CORE NO.

Field Rep: D. Cooper	Location: N200354 E1270036	Drive Length (ft.): 11.8
Drilling Co.: Marine Sampling Systems	Date Completed: 11/21/2012	Recovery Length (ft.): 6.8 Recovery efficiency: 58%
Driller: Bill Jaworski	Time: 0950	Depth to Mudline (ft.): 10.6
Drill Type: Vibracore	Weather: Rain 50F	Tide (MLLW): 10.2
Size/Type Casing: 4"	Date Processed: 11/28/2012	Bottom Elevation (MLLW): -0.6 From 2018 aerial survey

DESCRIPTION OF CORE TUBE (based on recovered core tube length - feet)

**INTERPRETED SUMMARY LOG
 (adjusted for recovery)**

Spl. No.	Sample Interval	Time	Sheen	PID (ppm)	Depth Inteval	Sample Description	Depth (Ft.)	Description	Mean Sample Depth
1	0-1.1	1340	NS	0.9	0-1.1	Black, silty, Fine SAND, with organics, wood fragments leaf debris, shiny, no odor		Fine SAND	1 = 0.9'
2	1.1-1.9	1345	NS	2.5	1.1-1.9	Black, gravelly, SAND, with minor silt, organics	1.8	Gravelly, SAND	2 = 2.6'
3	1.9-3	1350	NS	1.9			3.2		
4	3-3.8	1355	NS	1.9	1.9-3.8	Mottled gray-black, SILT, scattered organics, shell fragments		SILT	3 = 4.2'
5	4-5	1400	NS	1.5					4 = 5.9'
6	5-6	1405	NS	1.0	3.8-6.2	Gray, Fine SAND, with black silt interbeds at 4.5', 5', 5.5' trace organics at 6'	6.5		
7					6.2-6.8	Core catcher			
8								Fine SAND	5 = 7.8'
9									
10									6 = 9.5'
11									
							11.8		

Bottom of core 11.8

NOTE: The summary log is an interpretation based on samples, drill action, and interpolation. Depths have been adjusted based on recovery efficiency. Variations between what is shown and actual conditions should be anticipated.

Abbreviations: PID - photoionization detector - MiniRAE 3000
 F - fine
 M - medium
 NS - no sheen
 LS - light sheen
 MS - moderate sheen
 HS - heavy sheen

Sediment Core J

DESCRIPTION OF SEDIMENT SAMPLES AND TESTS - CORE NO.

Field Rep: D. Cooper	Location: N200348 E1270100 NAD83	Drive Length (ft.): 12.0
Drilling Co.: Marine Sampling Systems	Date Completed: 11/21/2012	Recovery Length (ft.): 6.4 Recovery efficiency: 53%
Driller: Bill Jaworski	Time: 1100	Depth to Mudline (ft.): 11.4
Drill Type: Vibracore	Weather: Rain 50F	Tide (MLLW): 11.3
Size/Type Casing: 4"	Date Processed: 11/28/2012	Bottom Elevation (MLLW): 0.2 From 2018 aerial survey

DESCRIPTION OF CORE TUBE (based on recovered core tube length - feet)

**INTERPRETED SUMMARY LOG
 (adjusted for recovery)**

Spl. No.	Sample Interval	Time	Sheen	PID (ppm)	Depth Inteval	Sample Description	Depth (Ft.)	Description	Mean Sample Depth
1	0-0.8	1500	NS	1.3	0-0.8	Mottled brown, gravelly, SAND, with some silt scattered organics	1.5	Gravelly, SAND	1 = 0.8'
2	0.8-2.0	1505	LS	0.8	0.8-2.0	Black-gray, thinly banded, SILT, with trace fine sand		Banded SILT	2 = 2.6'
3	2-3.2	1510	MS	3.3	2.0-3.2	Black, SILT, shiny, oily odor gravel, wood at 2.6'	3.7	Black SILT	3 = 4.9
4	3.2-4	1515	NS	1.5					
5	4-5	1520	NS	1.5					
6	5-6	1525	NS	1.4	3.2-6.0	Black-gray, thin bands of color, Fine SAND, with some silt, silt interbeds Shells at 3.5', 5.8' Wood at 3.5', 4.5' Fine organics at 4.4-4.5'	6.0		4 = 6.8'
7									
8					6-6.4	Core catcher		Fine SAND	5 = 8.5'
9									
10									6 = 10.4'
11									
							12		

Bottom of core 12.0

NOTE: The summary log is an interpretation based on samples, drill action, and interpolation. Depths have been adjusted based on recovery efficiency. Variations between what is shown and actual conditions should be anticipated.

Abbreviations: PID - photoionization detector - MiniRAE 3000
 F - fine
 M - medium
 NS - no sheen
 LS - light sheen
 MS - moderate sheen
 HS - heavy sheen

Sediment Core K

DESCRIPTION OF SEDIMENT SAMPLES AND TESTS - CORE NO.

Field Rep: D. Cooper	Location: N200357 E1270196	Drive Length (ft.): 8.0
Drilling Co.: Marine Sampling Systems	Date Completed: 11/20/2012	Recovery Length (ft.): 5.5 Recovery efficiency: 69%
Driller: Bill Jaworski	Time: 1327	Depth to Mudline (ft.): 10.6
Drill Type: Vibracore	Weather: Rain 50F	Tide (MLLW): 9.2
Size/Type Casing: 4"	Date Processed: 11/30/2012	Bottom Elevation (MLLW): -2.9 From 2018 aerial survey

DESCRIPTION OF CORE TUBE (based on recovered core tube length - feet)

**INTERPRETED SUMMARY LOG
 (adjusted for recovery)**

Spl. No.	Sample Interval	Time	Sheen	PID (ppm)	Depth Inteval	Sample Description	Depth (Ft.)	Description	Mean Sample Depth
1	0-1	930	NS	1.8	0-1.1	Black, SILT, very soft, no odor		Black SILT or Fine Sandy, SILT	1 = 0.7'
2	1-2	935 936	NS	1.6	1.1-2.3	Black, Fine sandy, SILT, shiny, no odor			2 = 2.2'
DUP2									
3	2.3-3	940	NS	1.0	2.3-3.0	Black, gravelly, coarse SAND, no odor, <3" gravel	3.3		
4	3-4.6	945	NS	6.9	3.0-4.6	Mottled gray-black, SILT, with wood, oily odor	4.3	Gravelly, coarse SAND	3 = 3.8'
5	4.6-5.1	950	NS	1.1	4.6-5.1	Mottled, gray-black, silty, SAND, no odor		SILT	4 = 5.5'
					5.1-5.5	Core catcher	6.6		
								Silty, SAND	5 = 7.0'
							8	Bottom of core 8.0	
							9		
							10		
							11		
							12		

NOTE: The summary log is an interpretation based on samples, drill action, and interpolation. Depths have been adjusted based on recovery efficiency. Variations between what is shown and actual conditions should be anticipated.

- Abbreviations:
- PID - photoionization detector - MiniRAE 3000
 - F - fine
 - M - medium
 - NS - no sheen
 - LS - light sheen
 - MS - moderate sheen
 - HS - heavy sheen

Sediment Core L

DESCRIPTION OF SEDIMENT SAMPLES AND TESTS - CORE NO.

Field Rep: D. Cooper	Location: N200303 E1270196 NAD83	Drive Length (ft.): 8.0
Drilling Co.: Marine Sampling Systems	Date Completed: 11/20/2012	Recovery Length (ft.): 5.8 Recovery efficiency: 72%
Driller: Bill Jaworski	Time: 1300	Depth to Mudline (ft.): 8.3
Drill Type: Vibracore	Weather: Rain 50F	Tide (MLLW): 9.8
Size/Type Casing: 4"	Date Processed: 11/30/2012	Bottom Elevation (MLLW): 0.3 From 2018 aerial survey

DESCRIPTION OF CORE TUBE (based on recovered core tube length - feet)

Spl. No.	Sample Interval	Time	Sheen	PID (ppm)	Depth Inteval	Sample Description
1	0-1	1100	NS	2.6	e	
2	1-1.8	1105	LS	5.4	0-1.8	Mottled, gray-black, silty, Fine SAND, with scattered wood 1/2" clam @ 0.3', oily odor
3	2-3.1	1110	NS	2.3	1.8-3.1	Mottled gray, grading to black, Fine sandy, SILT, with organics, wood throughout, sulfurous odor, shell fragments
4	3.1-4.2	1115	NS	2.4	3.1-4.2	Gray, silty, Fine SAND, with black silt interbed @ 3.3'
5	4.2-5.4	1120	NS	1.9	4.2-5.4	Gray, Fine to Medium SAND
					5.4-5.8	Core catcher

INTERPRETED SUMMARY LOG

(adjusted for recovery)

Depth (Ft.)	Description	Mean Sample Depth
	Silty, Fine SAND	1 = 0.7'
2.5		2 = 1.9'
	Fine Sandy, SILT	3 = 3.5'
4.3		4 = 5.0
	Fine SAND	5 = 6.7'
5.8		
	Fine to medium SAND	
8		
	Bottom of core 8.0	
9		
10		
11		
12		

NOTE: The summary log is an interpretation based on samples, drill action, and interpolation. Depths have been adjusted based on recovery efficiency. Variations between what is shown and actual conditions should be anticipated.

Abbreviations: PID - photoionization detector - MiniRAE 3000
 F - fine
 M - medium
 NS - no sheen
 LS - light sheen
 MS - moderate sheen
 HS - heavy sheen

Sediment Core M

DESCRIPTION OF SEDIMENT SAMPLES AND TESTS - CORE NO.

Field Rep: D. Cooper	Location: N200337 E1270246 NAD83	Drive Length (ft.): 7.2
Drilling Co.: Marine Sampling Systems	Date Completed: 11/20/2012	Recovery Length (ft.): 3.9 Recovery efficiency: 54% **
Driller: Bill Jaworski	Time: 1401	Depth to Mudline (ft.): 12.1
Drill Type: Vibracore	Weather: Rain 50F	Tide (MLLW): 8.1
Size/Type Casing: 4"	Date Processed: 11/30/2012	Bottom Elevation (MLLW): -4.0 From 2018 aerial survey

DESCRIPTION OF CORE TUBE (based on recovered core tube length - feet)

**INTERPRETED SUMMARY LOG
 (adjusted for recovery)**

Spl. No.	Sample Interval	Time	Sheen	PID (ppm)	Depth Inteval	Sample Description	Depth (Ft.)	Description	Mean Sample Depth
1	0-1.1	1200	NS	1.6	0-1.1	Mottled, gray-black, SILT, with Fine Sand inclusions scattered organics, brown sand rind - heave		SILT	1 = 0.6'
2	1.1-2	1205	NS	1.7	1.1-3.3	Brown, Fine to Medium SAND, with some gravel shell fragments @ 2.8', glass fragment	2.0		2 = 1.6'
3	2-3.3	1210	NS	1.2	3.3-3.9	Core catcher		Fine to Medium SAND	3 = 2.7'
							7.1	Bottom of Core 7.1'	
							8	see note **	
							9		
							10		
							11		
							12		

NOTE: The summary log is an interpretation based on samples, drill action, and interpolation. Depths have been adjusted based on recovery efficiency. Variations between what is shown and actual conditions should be anticipated.

** Poor recovery in lower sand due to loss/liquifaction - not compaction.

Abbreviations: PID - photoionization detector - MiniRAE 3000
 F - fine
 M - medium
 NS - no sheen
 LS - light sheen
 MS - moderate sheen
 HS - heavy sheen



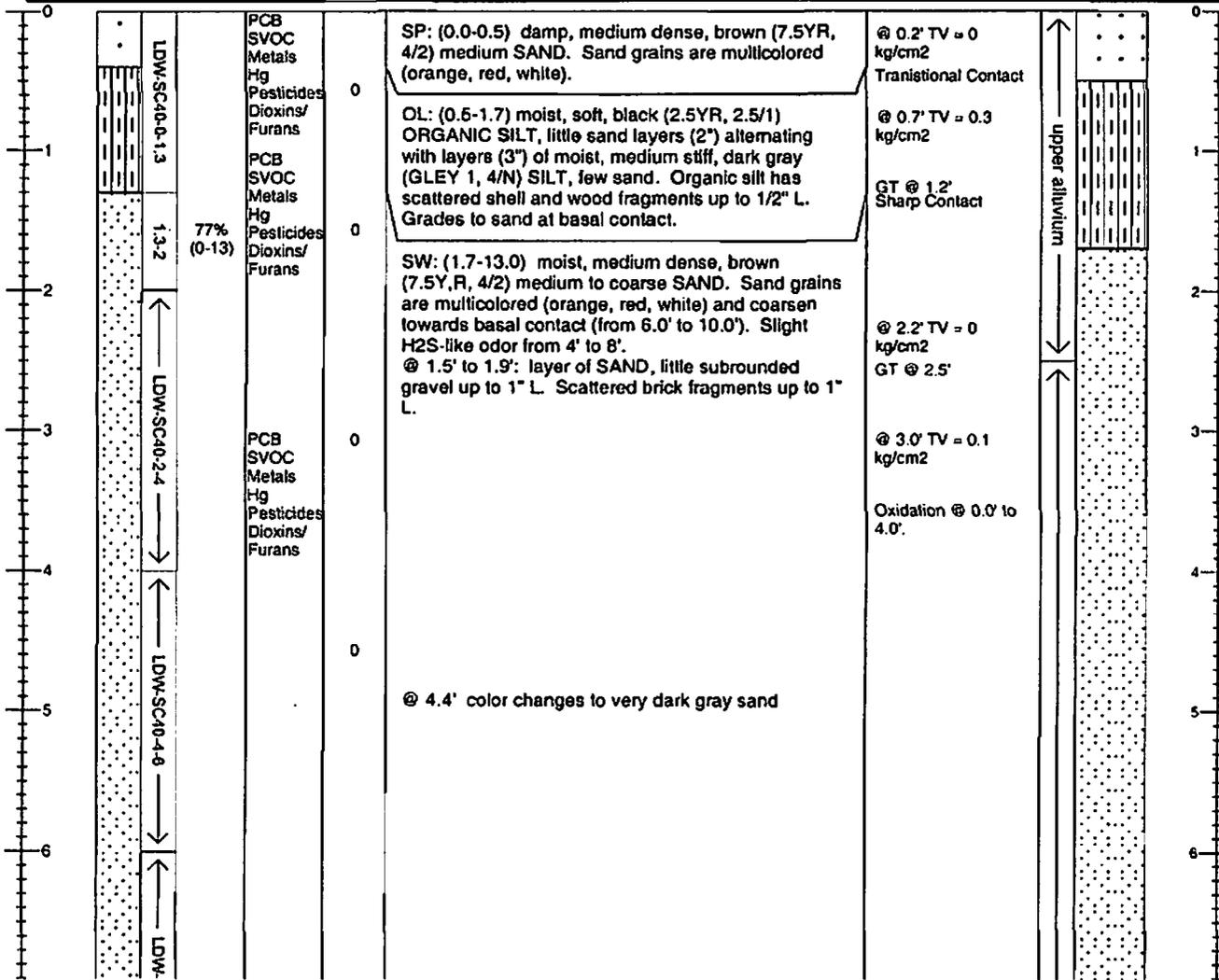
Sediment Core Log

LDW-SC-40 (R3)

Sheet 1 of 2

Project: LDW R/VFS	Water Body Type: Lower Duwamish Waterway	Tube Length (ft): 14.0
Project #: PORS5-18220-511	Water Elevation (ft)/Tide: NA	Penetration Depth (ft): 13.0
Client: LDWG	Water Depth (ft): 10.4	Sample Quality: Good
Collection Date: 2/23/06	Mudline Elevation (ft): -1.0	Recovery in ft (%): 10.0 (77)
Contractor: MSS	N.LAT: 200339 E.LONG: 1270298	Process Date: 2/24/06
Vessel: R/V Nancy Anne	Horiz. Datum: NAD 83 N Vert. Datum: MLLW	Process Method: Cut tube
Operator: Bill Jaworski	Method/Tube ID: Vibracore/3.5" round AI	Logged By: L.McKee, C.Brackett

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
----------------------	--------------------------	-----------------------	-------------------	-----------------	--	-------------------------------	----------------------------------



The RETEC Group, Inc.
1011 SW Klickitat Way, Suite 207
Seattle, WA 98134-1162
Phone: (206) 624-9349
Fax: (206) 624-2839

Remarks: Drive Notes: no freefall, easy (13.0'), penetration goal reached. Three drive attempts made at station. Station re-occupied with vibracore after MCS drives. Core catcher was empty (0.5' sediment loss).

Calculated Recovery
Sample Length/Penetration Length:
10.0/13.0 = 77 %

Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.



Sediment Core Log

LDW-SC-40 (R3)

Sheet 2 of 2

Project: LDW RVFS	Water Body Type: Lower Duwamish Waterway	Tube Length (ft): 14.0
Project #: PORS5-18220-511	Water Elevation (ft)/Tide: NA	Penetration Depth (ft): 13.0
Client: LDWG	Water Depth (ft): 10.4	Sample Quality: Good
Collection Date: 2/23/06	Mudline Elevation (ft): -1.0	Recovery in ft (%): 10.0 (77)
Contractor: MSS	N./LAT: 200339 E./LONG: 1270298	Process Date: 2/24/06
Vessel: R/V Nancy Anne	Horiz. Datum: NAD 83 N Vert. Datum: MLLW	Process Method: Cut tube
Operator: Bill Jaworski	Method/Tube ID: Vibracore/3.5" round Al	Logged By: L.McKee, C.Brackett

Recovered Depth (ft)	Recov. Interval & Sample	% Recovery (interval)	Chemical Analysis	PID Measurement	Sediment Description Classification Scheme: USCS Contacts are recovered depth (In-situ depth interval in feet with parentheses)	Comments for Recovered Depths	In-situ Depth (ft) & Graphic Log
7	SC40-8-8			0			7
8	LDW-SC40-8-10						8
9				0			9
10				0	End of core at 10.0'		10
11							11
12							12
13							13

The RETEC Group, Inc.
1011 SW Klickitat Way, Suite 207
Seattle, WA 98134-1162
Phone: (206) 624-9349
Fax: (206) 624-2839

Remarks: Drive Notes: no freefall, easy (13.0'), penetration goal reached. Three drive attempts made at station. Station re-occupied with vibracore after MCS drives. Core catcher was empty (0.5' sediment loss).

Calculated Recovery
Sample Length/Penetration Length:
10.0/13.0 = 77 %

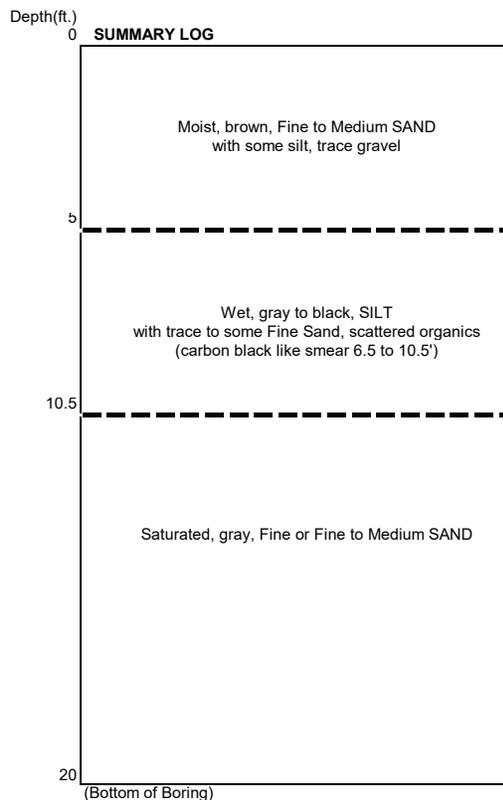
Note: Stratigraphic interpretations are preliminary and subject to change during the Remedial Investigation.

**UPLAND PUSH-PROBE and MONITORING WELL LOGS
ICS/NWC SITE**

**HOT-SPOT CHARACTERIZATION
ICS/NWC
SEATTLE, WASHINGTON**

BORING - DESCRIPTION OF SAMPLES & DATA

Field Rep: DG Cooper		Location: N199889 E1270243 NAD83				
Drilling Co.: Cascade		Elevation (Ft.): Approx. 15 ft. MLLW		Ground Surface: Quarry spalls		
Driller: Kasey		Date Completed: 10/15/12				
Drill Type: Geoprobe 6600		Weather: Rain 55F				
Size/Type Casing: 2" Rod		Hammer Type: Direct push		Sampler Type: 2" Macro w/ acrylic liner		
Spl.No.	Type sample saved	PID (ppm)	Spl Depth (Ft.) From - To	Spl length inches	Time	Sample Description
			0-5	48		0-5' Most, bwn, F-M SAND, w/some silt, trace gravel, ns, no
A	Grab 3-5'	1.0			0845	
			5-10	40		5-6.5' Wet, gry-blk, F sandy, SILT, ns, no
B	Grab 6.5-8'	220			0855	6.5-10' Wet, blk, SILT, w/trace sand, scattered organics, ns, no carbon black -like smear
			10-15	40		10-10.5' As above
C	Grab 10.5-12'	0.9			0905	10.5-15' Sat, gry, F SAND, ns, no
			15-20	50		15-20' Sat, gry, F-M SAND, ns, no
D	Grab 16-18'	0.9			0915	

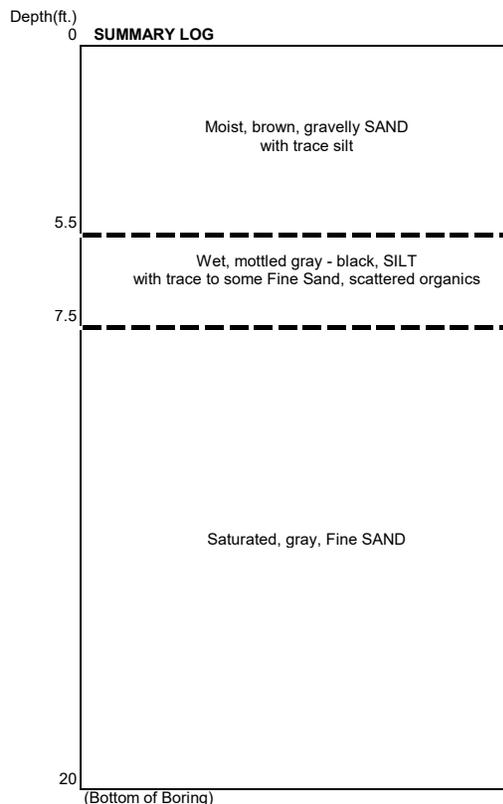


NOTES: Completed boring backfilled with granular bentonite
gry = gray; bwn = brown; blk = black
ns = no sheen
no = no odor
F = fine; M = medium
Sat = Pores saturated with water

NOTE: The summary log is an interpretation based on samples, drill action, and interpolation. Variations between what is shown and actual conditions should be anticipated.

BORING - DESCRIPTION OF SAMPLES & DATA

Field Rep: DG Cooper			Location: N199970 E1270215 NAD83			
Drilling Co.: Cascade			Elevation (Ft.): Approx. 15 ft. MLLW		Ground Surface: Quarry spalls	
Driller: Kasey			Date Completed: 10/15/12			
Drill Type: Geoprobe 6600			Weather: Rain 55F			
Size/Type Casing: 2" Rod			Hammer Type: Direct push		Sampler Type: 2" Macro w/ acrylic liner	
Spl.No.	Type sample saved	PID (ppm)	Spl Depth (Ft.) From - To	Spl length inches	Time	Sample Description
			0-5	48		0-5' Moist, bwn, gravelly, SAND, w/trace silt, ns, no
A	Grab 3-5'	2.3			1000	2-5' Moist, mot-bwn, silty SAND w/trace gravel, ns, no
			5-10	50		5-5.5' Wet, bwn, F Sandy, SILT, ns, no
B	Grab 5.5-7.5'	40			1010	5.5-7.5' Wet, mot gry-blk, SILT, w/trace F sand, ns, no
						7.5-10' Sat, gry, F SAND, w/trace silt, wood, organics
			10-15	60		10-15' Sat, gry, F SAND, ns, no
C	Grab 8-10'	1.3			1020	
D	Grab 15-16'	0.9	15-20	60	1030	15-20' As above

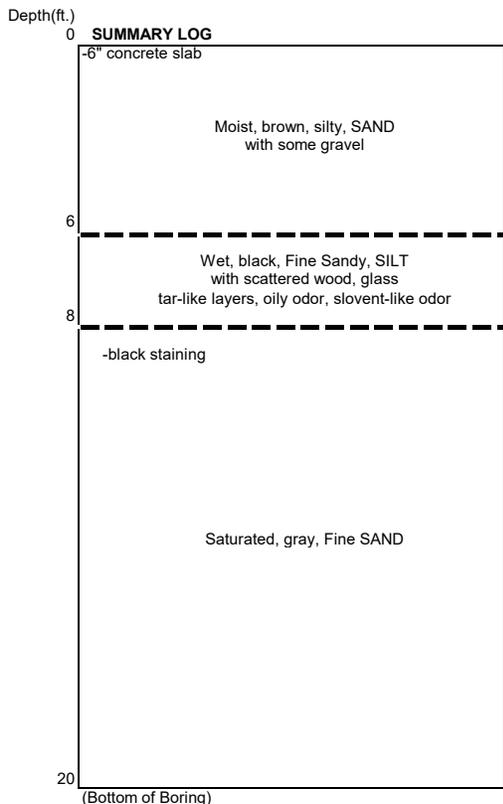


NOTES: Completed boring backfilled with granular bentonite
 mot - mottled
 gry = gray; bwn = brown; blk = black
 ns = no sheen
 no = no odor
 F = fine; M = medium
 Sat = Pores saturated with water

NOTE: The summary log is an interpretation based on samples, drill action, and interpolation. Variations between what is shown and actual conditions should be anticipated.

BORING - DESCRIPTION OF SAMPLES & DATA

Field Rep: DG Cooper			Location: N200044 E1270155 NAD83			
Drilling Co.: Cascade			Elevation (Ft.): Approx. 15.5 ft. MLLW		Ground Surface: Concrete slab	
Driller: Kasey			Date Completed: 10/15/12			
Drill Type: Geoprobe 6600			Weather: cloudy 55F			
Size/Type Casing: 2" Rod			Hammer Type: Direct push		Sampler Type: 2" Macro w/ acrylic liner	
Spl.No.	Type sample saved	PID (ppm)	Spl Depth (Ft.) From - To	Spl length inches	Time	Sample Description
			0-5	36		0-5' Moist, bwn, silty, SAND, w/some gravel, ns, no
A	Grab 3-5'	3.1			1045	
			5-10	40		5-6' As above
B	Grab 6-8'	340			1055	6-8' Wet, blk, F Sandy, SILT, w/scattered, wood, glass Tar-like layers, oily odor, solvent-like odor, no sheen
						8-10' Sat, blk-gry, F SAND, ns, no
			10-15	48		10-15' As above, with silty zones, becoming grayer with depth
C	Grab 10-12'	1.5			1105	
D	Grab 15-16'	1.0	15-20	60	1115	15-20' Sat, Dk gry, F SAND, ns, no

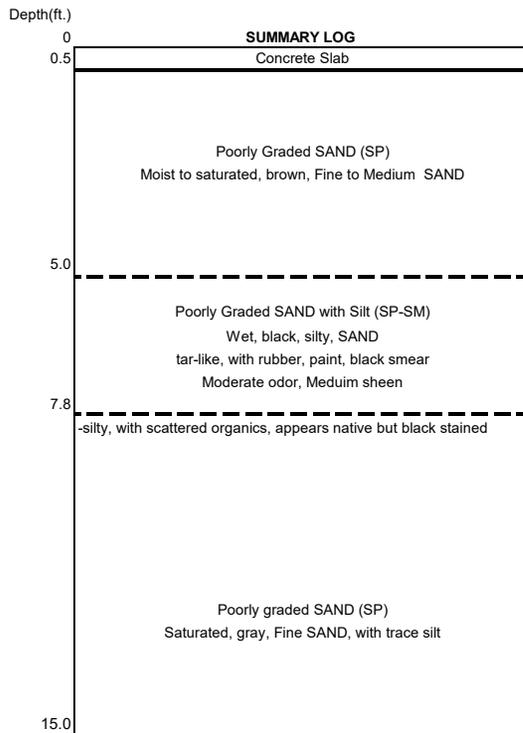


NOTES: Completed boring backfilled with granular bentonite
 gry = gray; bwn = brown; blk = black
 ns = no sheen
 no = no odor
 F = fine; M = medium
 Sat = Pores saturated with water

LP3-10N

BORING - DESCRIPTION OF SAMPLES & DATA

Field Rep: DG Cooper				Location: N200052 E 1270150 (NAD83)				
Drilling Co.: Cascade				Elevation (Ft.):		Ground Surface: Concrete Slab		
Driller: Tim				Date Completed: 1/29/2021				
Drill Type: Geoprobe 7822DT				Weather: Clear 45F				
Size/Type Casing: 2" Rod				Hammer Type: Direct push		Sampler Type: 1.5" dia. X 60" Macro-core w/ acrylic liner		
Soil Sample No.	Sample Interval	PID (ppm)	Depth (Ft.)	Odor/Sheen	Spl Depth (Ft.) From - To	Spl length inches	Time	Sample Description
		0.5	1	NO/NS	0-5	45		0-0.5 concrete slab
LP3-10N-3	2-3	0.6	3	NO/NS			1420	0.5-1.0 damp, brown, F-M sand
								1.0-3.7 wet, mottled, brown, F-M sand w some gravel and silt
								cored wood 3.5'-3.7'
					5-10	42		5.0-7.8 wet, black silty SAND, tar-like with gravel, glass, wood,
LP3-10N-6	5-7	235.0	6	MO/MS			1430	paint flecks, plastic-rubber sheet, and black smear
		206.0	7	MO/MS				silty at base
		6.8	8	NO/NS				7.8-8.5 wet, dark gray, silty F SAND with scattered organics
					10-15	60		10-15 saturated, dark gray, F SAND with trace silt
LP3-10N-10	10-11	4.3	10	NO/NS			1440	
		1.9	12	NO/NS				
		2.5	14	NO/NS				
								NOTE: Saturated @ 10'
								Completed boring backfilled with granular bentonite



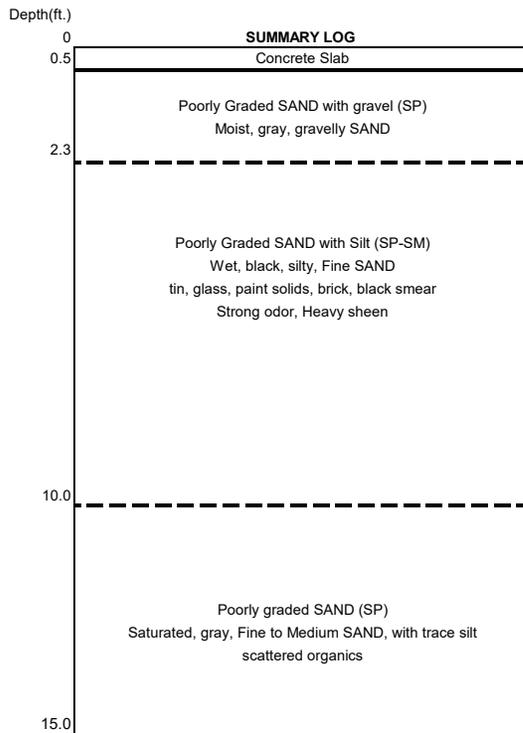
(Bottom of Boring)
NOTE: The summary log is an interpretation based on samples, drill action and interpolation. Variations between what is shown and actual conditions should be anticipated.

- Abbreviations:** F - fine
M - medium
Sat. - saturated
Mot. - mottled
NS - No sheen
LS - Light sheen
MS - Medium sheen
HS-Heavy sheen
NO - No odor
SLO - Slight odor
MO - Moderate odor
SO - Strong odor

BORING - DESCRIPTION OF SAMPLES & DATA

LP3-20N

Field Rep: DG Cooper				Location: N200061 E 1270145 (NAD83)				
Drilling Co.: Cascade				Elevation (Ft.):		Ground Surface: Concrete Slab		
Driller: Tim				Date Completed: 2/1/2021				
Drill Type: Geoprobe 7822DT				Weather: Rain 45F				
Size/Type Casing: 2" Rod				Hammer Type: Direct push		Sampler Type: 1.5" dia. X 60" Macro-core w/ acrylic liner		
Soil Sample No.	Sample Interval	PID (ppm)	Depth (Ft.)	Odor/Sheen	Spl Depth (Ft.) From - To	Spl length inches	Time	Sample Description
		0	1	NO/NS	0-5	37		0-0.5 concrete
LP3-20N-2	1.5-2.5	0	2	NO/NS			1200	0.5-2.3 moist, gray, gravelly, SAND with wood between 1.1'1.6'
		160	3	NO/LS				2.3-3.1 moist, brown-black, silty, F SAND, fibrous-plastic sheet material, solidified paint
					5-10	20		5-6.7 moist, black, F SAND, with debris: tin, glass, paint solids, brick, emerald green staining, plastic sheet, fibrous material
LP3-20N-6	5.5-6.5	644	5	SO/MS			1205	emerald green staining, plastic sheet, fibrous material
		342	6	SO/HS				silty F SAND in shoe with black smearing
					10-15	60		10-13.8 saturated, dark gray, F-M SAND with silt
LP3-20N-10	10.5-11.5	4	10	NO/NS			1210	13.8-15 saturated, mottled brown-dark gray, F-M SAND with silt.
		4	12.5	NO/NS				brown silty interbeds and wood chunks at base
		2	15	NO/NS				
NOTE: Saturated @ 10'								Completed boring backfilled with granular bentonite



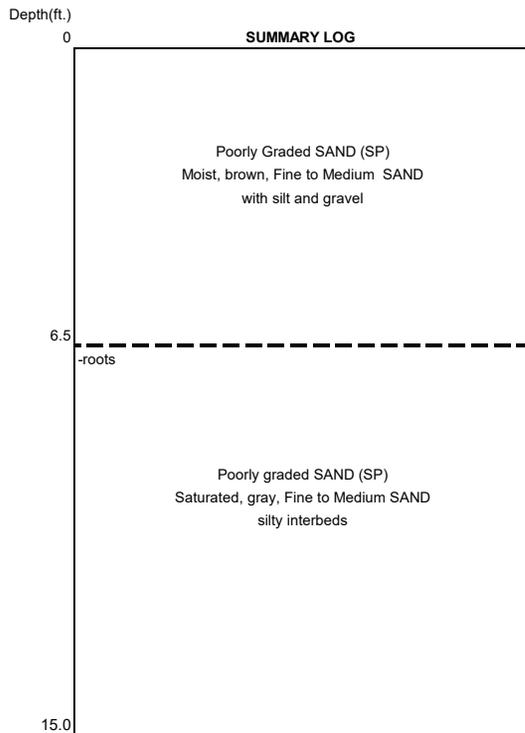
(Bottom of Boring)
NOTE: The summary log is an interpretation based on samples, drill action and interpolation.
Variations between what is shown and actual conditions should be anticipated.

- Abbreviations:** F - fine
M - medium
Sat. - saturated
Mot. - mottled
NS - No sheen
LS - Light sheen
MS - Medium sheen
HS-Heavy sheen
NO - No odor
SLO - Slight odor
MO - Moderate odor
SO - Strong odor

BORING - DESCRIPTION OF SAMPLES & DATA

LP3-10E

Field Rep: DG Cooper				Location: N20052 E 1270164 (NAD83)				
Drilling Co.: Cascade				Elevation (Ft.):		Ground Surface: Grassy Rubble		
Driller: Tim				Date Completed: 2/1/2021				
Drill Type: Geoprobe 7822DT				Weather: Rain 45F				
Size/Type Casing: 2" Rod				Hammer Type: Direct push		Sampler Type: 1.5" dia. X 60" Macro-core w/ acrylic liner		
Soil Sample No.	Sample Interval	PID (ppm)	Depth (Ft.)	Odor/Sheen	Spl Depth (Ft.) From - To	Spl length inches	Time	Sample Description
		0.2	1	NO/NS	0-5	24		0-0.5 moist, dk brown, gravelly SAND with silt. Abundant roots
LP3-10E-2	1-2	0.4	2	NO/NS			1330	0.5-2.0 moist, brown, F-M SAND with trace silt and gravel
		0.5	5	NO/NS	5-10	60		5-6.5 moist, brown, F-M SAND with silt and gravel
LP3-10E-5	5-6	0.5	7.5	NO/NS			1335	becomes mottled gray brown, M SAND 5.9'-6.5'
		0.9	10	NO/NS				6.5-8.8 saturated, mottled brown-gray, silty F SAND, with roots
								8.8-10 saturated, dark gray, F-M SAND, alternating brown silty interbeds
LP3-10E-10	10-11	0.6	10	NO/NS	10-15	60	1340	10-15 saturated, dark gray, F-M SAND with fines
		1.0	12.5	NO/NS				wood at 13.7'
		0.8	15	NO/NS				
NOTE: Saturated @ 6.5'								
Completed boring backfilled with granular bentonite								



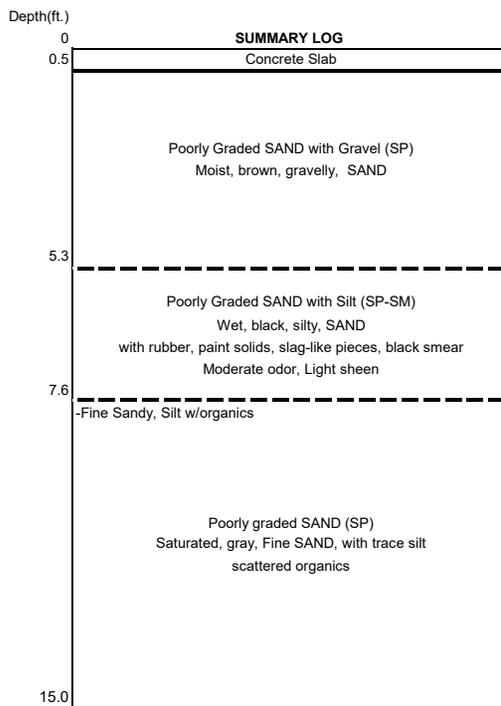
(Bottom of Boring)
NOTE: The summary log is an interpretation based on samples, drill action and interpolation. Variations between what is shown and actual conditions should be anticipated.

- Abbreviations:** F - fine
M - medium
Sat. - saturated
Mot. - mottled
NS - No sheen
LS - Light sheen
MS - Medium sheen
HS - Heavy sheen
NO - No odor
SLO - Slight odor
MO - Moderate odor
SO - Strong odor

BORING - DESCRIPTION OF SAMPLES & DATA

LP3-10S

Field Rep: DG Cooper				Location: N200035 E 1270161 (NAD83)				
Drilling Co.: Cascade				Elevation (Ft.):		Ground Surface: Concrete Slab		
Driller: Tim				Date Complete: 1/29/2021				
Drill Type: Geoprobe 7822DT				Weather: Clear 45F				
Size/Type Casing: 2" Rod				Hammer Type: Direct push		Sampler Type: 1.5" dia. X 60" Macro-core w/ acrylic liner		
Soil Sample No.	Sample Interval	PID (ppm)	Depth (Ft.)	Odor/Sheen	Spl Depth (Ft.) From - To	Spl length inches	Time	Sample Description
		0.1	1	NO/NS	0-5	42		0-0.5 concrete
		0.3	3	NO/NS				0.5-3.5 wet, brown, gravelly SAND with some silt
					5-10	36		5-5.3 wet, brown, gravelly SAND with some silt
LP3-10S-5	5-5.5	185	5	MO/LS			1200	5.3-6.0 wet, black, sandy SILT with gravels,
LP3-10S-6	5.5-6.5	1263	6.5	MO/LS			1210	plastic/rubber at 6.0'
		16	8	NO/NS				6.0-7.6 wet, mottled gray-black, gravelly SAND with some silt,
								scattered red brick, black staining, slag-like pieces,
								and white pain residue and metal sheet
								7.6-8.0 wet, brown, fine sandy SILT with fine organics
		0.8	10	NO/NS	10-15	50		10-14.2 saturated, gray, F SAND with trace silt
LP3-10S-10	10-11	1.8	12	NO/NS			1240	cored wood at 12' scattered thin organics
		0.6	14	NO/NS				
NOTE: Saturated @ 10'								
Completed boring backfilled with granular bentonite								



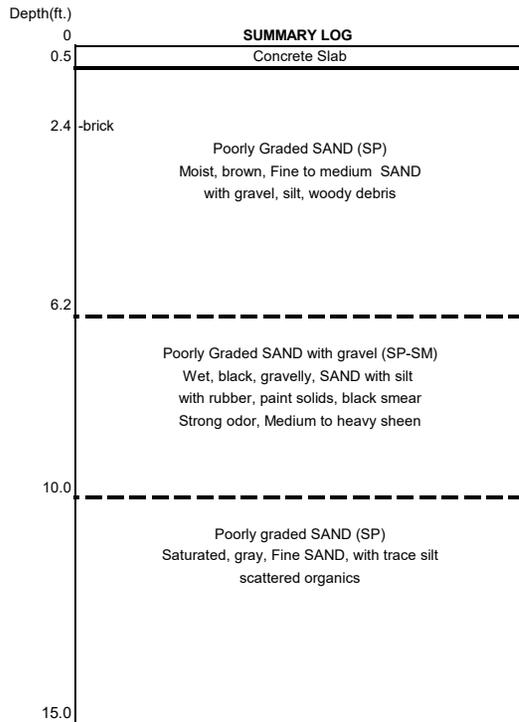
(Bottom of Boring)
NOTE: The summary log is an interpretation based on samples, drill action and interpolation.
Variations between what is shown and actual conditions should be anticipated.

- Abbreviations:** F - fine
M - medium
Sat. - saturated
Mot. - mottled
NS - No sheen
LS - Light sheen
MS - Medium sheen
HS - Heavy sheen
NO - No odor
SLO - Slight odor
MO - Moderate odor
SO - Strong odor

BORING - DESCRIPTION OF SAMPLES & DATA

LP3-20S

Field Rep: DG Cooper				Location: N200027 E 1270166 (NAD83)				
Drilling Co.: Cascade				Elevation (Ft.):		Ground Surface: Concrete Slab		
Driller: Tim				Date Completed: 2/1/2020				
Drill Type: Geoprobe 7822DT				Weather: Rain 50F				
Size/Type Casing: 2" Rod				Hammer Type: Direct push		Sampler Type: 1.5" dia. X 60" Macro-core w/ acrylic liner		
Soil Sample No.	Sample Interval	PID (ppm)	Depth (Ft.)	Odor/Sheen	Spl Depth (Ft.) From - To	Spl length inches	Time	Sample Description
		0	1	NO/NS	0-5	32		0-0.5 concrete
		0.0	2.5	NO/NS				0.5-1.8 moist, gray, F-M SAND, with trace gravel and silt,
								1.8-5.7 moist, brown, gravelly F-M SAND with silt, broken brick
								silty interbeds between 2.4'-2.7'
					5-10	48		5-6.2 wet, brown, silty F-M SAND with organics and woody material
LP3-20S-5	5-6	0.1	5	NO/NS			0930	6.2-7.2 wet, mottled gray-black, gravelly SAND with fines and black smear
LO3-20S-7	6.2-7.2	238	6.5	SO/MS			0935	7.2-9 wet, black, F SAND with fines and trace broken gravel at base
		10	7.5	NO/NS				
		2	8	NO/HS				
		1.8	9	NO/NS				
		1.8	10	NO/NS	10-15	60		10-15 saturated, dark brown, silty F SAND, with organics.
LP3-20S-10	10-11	0.8	12.5	NO/NS			0940	large wood debris at 13.1'-13.4'
		0.9	15	NO/NS				F-M SAND at base with black smear on liner
NOTE: Saturated @ 10'								
Completed boring backfilled with granular bentonite								



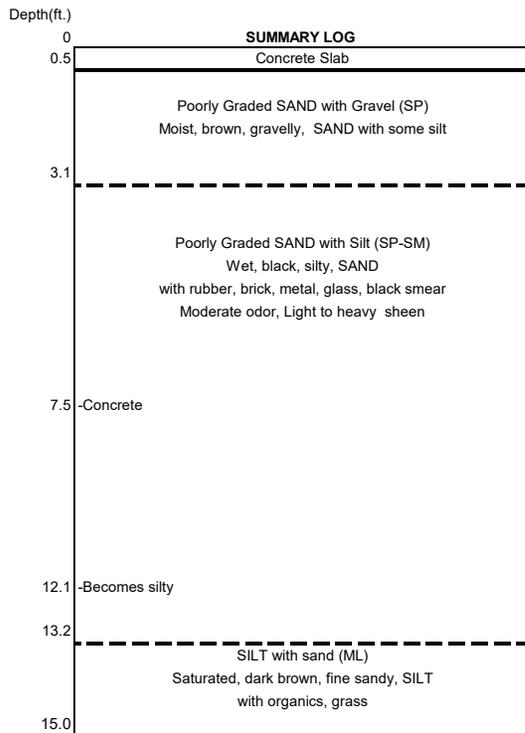
(Bottom of Boring)
NOTE: The summary log is an interpretation based on samples, drill action and interpolation.
Variations between what is shown and actual conditions should be anticipated.

- Abbreviations:** F - fine
M - medium
Sat. - saturated
Mot. - mottled
NS - No sheen
LS - Light sheen
MS - Medium sheen
HS - Heavy sheen
NO - No odor
SLO - Slight odor
MO - Moderate odor
SO - Strong odor

LP3-10W

BORING - DESCRIPTION OF SAMPLES & DATA

Field Rep: DG Cooper				Location: N200038E 1270147 (NAD83)				
Drilling Co.: Cascade				Elevation (Ft.): 15.5		Ground Surface: Concrete Slab		
Driller: Tim				Date Completed 1/29/2021				
Drill Type: Geoprobe 7822DT				Weather: Clear 45F				
Size/Type Casing: 2" Rod				Hammer Type: Direct push		Sampler Type: 1.5" dia. X 60" Macro-core w/ acrylic liner		
Soil Sample No.	Sample Interval	PID (ppm)	Depth (Ft.)	Odor/Sheen	Spl Depth (Ft.) From - To	Spl length inches	Time	Sample Description
		0.3	1	NO/NS	0-5	46		0-0.6 Concrete
LP3-10W-3	2-3	0.2	3	NO/NS			1310	0.6-3.1 wet, brown to gray, gravelly SAND with some silt
								3.1-3.8 wet, black silty SAND with wood debris, cored wood and black smear
		368	5	MO/LS	5-10	30		5-7.1 wet, black, silty, SAND. Tar-like with wood, gravel, glass,
LP3-10W-6	5-7	351	6	MO/LS			1315	sheet metal, brick, and plastic/rubber
		203	7	MO/LS				7.1-7.5 concrete
					10-15	55		10-12.1 saturated, black, F SAND
LP3-10W-10	10-12	7.6	10	SLO/HS			1330	12.1-13.2 saturated, black, silty, F SAND with organics and black smear
LP3-10W-14	13-14	8.4	12	NO/LS			1340	13.2-14.5 wet, dark brown, fine sandy, SILT with organics
		0.5	14	NO/NS				
NOTE: Saturated @ 10'								Completed boring backfilled with granular bentonite



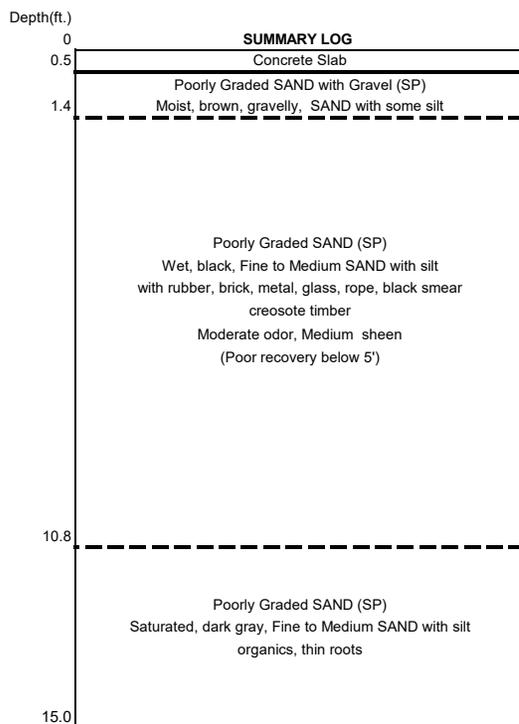
(Bottom of Boring)
NOTE: The summary log is an interpretation based on samples, drill action and interpolation. Variations between what is shown and actual conditions should be anticipated.

- Abbreviations:** F - fine
M - medium
Sat. - saturated
Mot. - mottled
NS - No sheen
LS - Light sheen
MS - Medium sheen
HS-Heavy sheen
NO - No odor
SLO - Slight odor
MO - Moderate odor
SO - Strong odor

BORING - DESCRIPTION OF SAMPLES & DATA

LP3-20W

Field Rep: DG Cooper				Location: N200032 E1270139 (NAD83)				
Drilling Co.: Cascade				Elevation (Ft.):		Ground Surface: Concrete Slab		
Driller: Tim				Date Completed: 2/1/2021				
Drill Type: Geoprobe 7822DT				Weather: Rain 50F				
Size/Type Casing: 2" Rod				Hammer Type: Direct push		Sampler Type: 1.5" dia. X 60" Macro-core w/ acrylic liner		
Soil Sample No.	Sample Interval	PID (ppm)	Depth (Ft.)	Odor/Sheen	Spl Depth (Ft.) From - To	Spl length inches	Time	Sample Description
LP3-20W-2	1.5-2.5	2.6	1	NO/NS	0-5	40	1045	0-0.5 concrete
		355	2	MO/MS				0.5-1.4 moist, dark brown with reddish oxidation lense, M SAND over
		1400	2.8	MO/MS				f-m sand with gravel
								1.4-3.3 moist, black, F-M SAND with silt and gravel
								large wood debris 2.8'-3.3', trace plastic sheet, brick, and paint solid. Black smear
		1240	5	MO/MS	5-10	24	1050	5-6.2 moist, black, F-M SAND mixed with fiber papers, rubbers,
LP3-20W-6	5.5-6.5	1343	6	MO/MS				decayed rope, broken glass, brick, and wood
		18	7	MO/MS				6.2-7 moist, black, silty F SAND with black smearing
								creosote timber
LP3-20W-10	10.5-11.5	8	10	NO/NS	10-15	60	1055	10-10.8 saturated, black, F SAND with black smearing
		12.5	6	NO/NS				10-8-15 saturated, dark gray, silty F SAND, becomes F-M sand at base
		15	8	NO/NS				thin organics, scattered roots
NOTE: Saturated @ 10'								
Completed boring backfilled with granular bentonite								

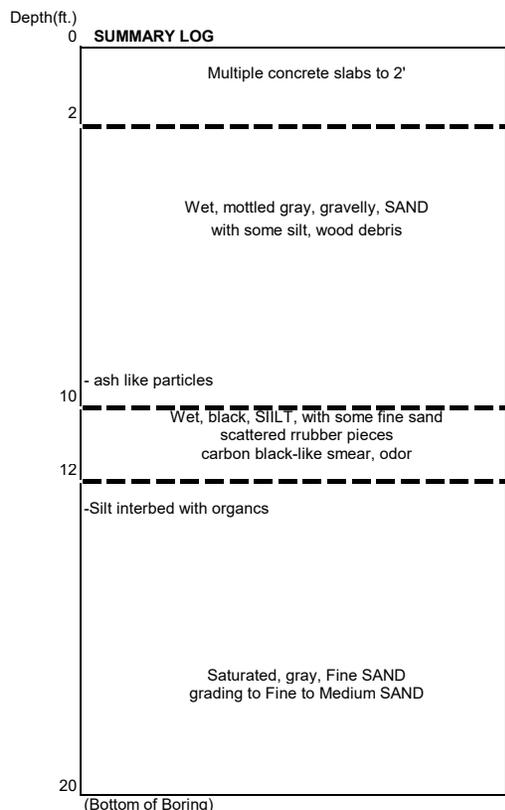


- Abbreviations:** F - fine
M - medium
Sat. - saturated
Mot. - mottled
NS - No sheen
LS - Light sheen
MS - Medium sheen
HS - Heavy sheen
NO - No odor
SLO - Slight odor
MO - Moderate odor
SO - Strong odor

(Bottom of Boring)
NOTE: The summary log is an interpretation based on samples, drill action and interpolation.
Variations between what is shown and actual conditions should be anticipated.

BORING - DESCRIPTION OF SAMPLES & DATA

Field Rep: DG Cooper			Location: N200125 E1270110 NAD83			
Drilling Co.: Cascade			Elevation (Ft.): Approx. 16 ft. MLLW		Ground Surface: Concrete slab	
Driller: Kasey			Date Completed: 10/15/12			
Drill Type: Geoprobe 6600			Weather: Cloudy 60F			
Size/Type Casing: 2" Rod			Hammer Type: Direct push		Sampler Type: 2" Macro w/ acrylic liner	
Spl.No.	Type sample saved	PID (ppm)	Spl Depth (Ft.) From - To	Spl length inches	Time	Sample Description
			0-5	36		0-2' Multiple concrete slabs, cored to 24"
						2-5' Wet, mot, gry-blk, gravelly, SAND, w/some silt, wood
			5-10	24		5-8' Poor recovery, slurry
A	Grab 8-10'	6.7			1400	8-10' Wet, mot gry, gravelly, SAND, w/wood, ash-like particles
			10-15	60		10-12' Wet, blk, SILT, w/some F Sand, scattered rubber
B	Grab 10-12'	920			1410	carbon black-like smear, slight odor, ns
C	Grab 14-15'	2.4			1420	12-12.5' Wet, gry-blk, F SAND, ns, no
						12.5-13' Wet, gry-blk, SILT, w/organics
						13-15' Sat, gry, F SAND, ns, no
D	Grab 17-18'	1.2	15-20	60	1430	15-20' Sat, gry, F SAND, ns, no
						grading to F-M SAND



NOTES Initial boring (N200127.5 E1270115.8) encountered a void from 4-5' The void contained approximately 1' of black oily fluid with the consistency of bunker oil or paint, paint thinner-like odor. A NAPL sample was collected as ICS-LP4-NAPL-101512 The boring was backfilled with bentonite chip. Drill rig was moved 5' to the west and Probe LP4 was advanced.

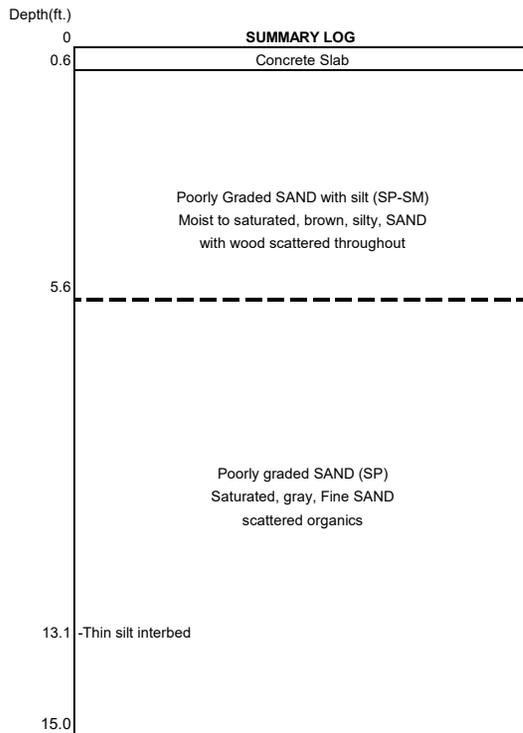
gry = gray; bwn = brown; blk = black
ns = no sheen
no = no odor
F = fine; M = medium
Sat = Pores saturated with water

NOTE: The summary log is an interpretation based on samples, drill action, and interpolation. Variations between what is shown and actual conditions should be anticipated.

LP5

BORING - DESCRIPTION OF SAMPLES & DATA

Field Rep: DG Cooper				Location: N200152 E 1270104 (NAD83)				
Drilling Co.: Cascade				Elevation (Ft.):		Ground Surface: Concrete Slab		
Driller: Tim				Date Completed 1/28/2021				
Drill Type: Geoprobe 7822DT				Weather: Clear 45F				
Size/Type Casing: 2" Rod				Hammer Type: Direct push		Sampler Type: 1.5" dia. X 60" Macro-core w/ acrylic liner		
Soil Sample No.	Sample Interval	PID (ppm)	Depth (Ft.)	Odor/Sheen	Spl Depth (Ft.) From - To	Spl length inches	Time	Sample Description
					0-5	36		0-0.6' Concrete slab
		0.0	1	NO/NS				0.6-2.5' Wet, brown, silty SAND with some gravel
		0.1	2	NO/NS				wood scattered throughout
		0.0	3	NO/NS				wood at 2.4'
					5-10	52		5.0-5.6' As above, some wood and organics
LP5-5	5.5-6.5	1.1	6	NO/NS			0840	5.6-8.8' Wet to saturated, mottled gray with black staining, F SAND
LP5-7	7-8	0.1	7	NO/NS			0845	with some silt and scattered thin roots/organics
		0.0	9	NO/NS				
					10-15	60		10-15' Saturated, gray, F SAND with trace silt
LP5-10	10-11	0.0	10	NO/NS			0850	silt interbed at 13.1'
		0.1	12	NO/NS				
		0.1	14	NO/NS				
NOTE: Saturated @ 6'								
Completed boring backfilled with granular bentonite								



(Bottom of Boring)
NOTE: The summary log is an interpretation based on samples, drill action and interpolation. Variations between what is shown and actual conditions should be anticipated.

- Abbreviations:** F - fine
M - medium
Sat. - saturated
Mot. - mottled
NS - No sheen
LS - Light sheen
MS - Medium sheen
HS - Heavy sheen
NO - No odor
SLO - Slight odor
MO - Moderate odor
SO - Strong odor

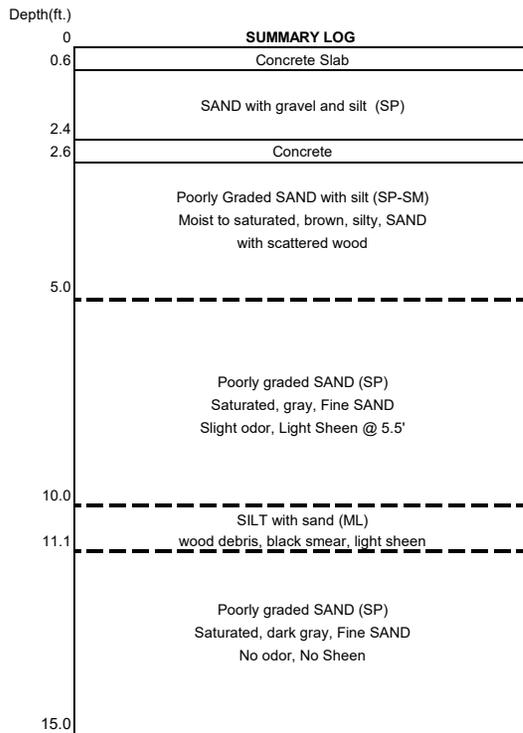
LP6

BORING - DESCRIPTION OF SAMPLES & DATA

Field Rep: DG Cooper				Location: N200149 E1270093 (NAD83)				
Drilling Co.: Cascade				Elevation (Ft.):		Ground Surface: Concrete Slab		
Driller: Tim				Date Completed: 1/27/2021				
Drill Type: Geoprobe 7822DT				Weather: Cloudy 40 F				
Size/Type Casing: 2" Rod				Hammer Type: Direct push		Sampler Type: 1.5" dia. X 60" Macro-core w/ acrylic liner		
Soil Sample No.	Sample Interval	PID (ppm)	Depth (Ft.)	Odor/Sheen	Spl Depth (Ft.) From - To	Spl length inches	Time	Sample Description
					0-5	44		0-0.6' Concrete slab
		0.4	1	NO/NS				0.6-2.4' Wet, mottled gray, gravelly SAND with some silt
		0.0	2	NO/NS				scattered wood
		0.1	3	NO/NS				2.4-2.7' Concrete
								2.7-3.7' Wet, dark gray, F SAND, with some gravel, silt, and wood
					5-10	24		5.0-7.0' Wet to saturated, dark gray, F-M SAND with trace gravel and silt
LP6-6	6-7	0.6	5	NO/NS			1330	
		0.4	6	SLO/LS				
		0.4	7	NO/NS				
					10-15	60		10-11.1' Saturated black, F sandy SILT with wood debris.
LP6-10	10-11	3.7	10	SLO/LS			1340	black smearing
LP6-12	11.5-12.5	0.2	12	NO/NS			1350	11.1-15' Saturated, dark gray, F SAND with scattered thin organics
		0.1	14	NO/NS				interbedded with trace to some silt

NOTE: Saturated @ 5.5'

Completed boring backfilled with granular bentonite



(Bottom of Boring)

NOTE: The summary log is an interpretation based on samples, drill action and interpolation.

Variations between what is shown and actual conditions should be anticipated.

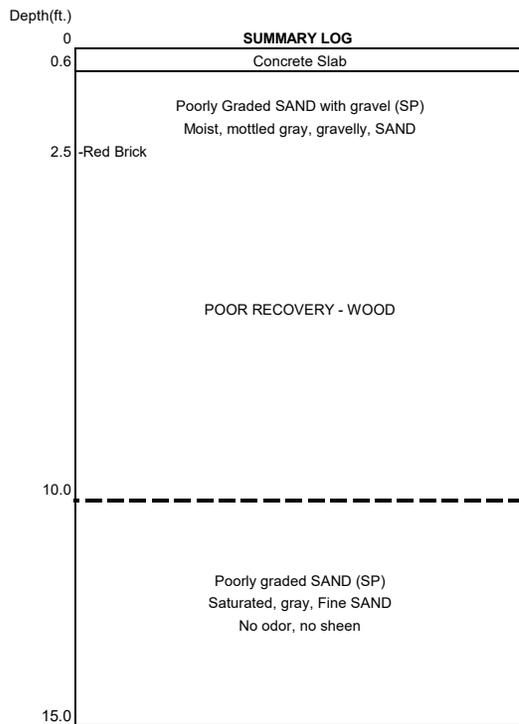
Abbreviations: F - fine

- M - medium
- Sat. - saturated
- Mot. - mottled
- NS - No sheen
- LS - Light sheen
- MS - Medium sheen
- HS - Heavy sheen
- NO - No odor
- SLO - Slight odor
- MO - Moderate odor
- SO - Strong odor

BORING - DESCRIPTION OF SAMPLES & DATA

LP8

Field Rep: DG Cooper				Location: N200114 E1270093 (NAD83)				
Drilling Co.: Cascade				Elevation (Ft.):		Ground Surface: Concrete Slab		
Driller: Tim				Date Completed: 1/27/2021				
Drill Type: Geoprobe 7822DT				Weather: Clear 45F				
Size/Type Casing: 2" Rod				Hammer Type: Direct push		Sampler Type: 1.5" dia. X 60" Macro-core w/ acrylic liner		
Soil Sample No.	Sample Interval	PID (ppm)	Depth (Ft.)	Odor/Sheen	Spl Depth (Ft.) From - To	Spl length inches	Time	Sample Description
					0-5	30		0-0.6' Concrete slab
		0.3	1	NO/NS				0.6-2.1' Wet, mottled gray, gravelly SAND with some silt
		0.1	2	NO/NS				2.1-2.5' Red brick
					5-10	0		No recovery wood in shoe
								2 attempts - no recovery
					10-15	48		10-10.5' Saturated, gray-black F SAND
LP8-10	10-11	2.5	10	NO/NS			1520	10.5-14' Saturated, gray, F SAND with trace silt
LP8-12	12-13	1.5	12	NO/NS			1530	
		0.8	14	NO/NS				
NOTE: Saturated @ 5.5'								
Completed boring backfilled with granular bentonite								



(Bottom of Boring)

NOTE: The summary log is an interpretation based on samples, drill action and interpolation.

Variations between what is shown and actual conditions should be anticipated.

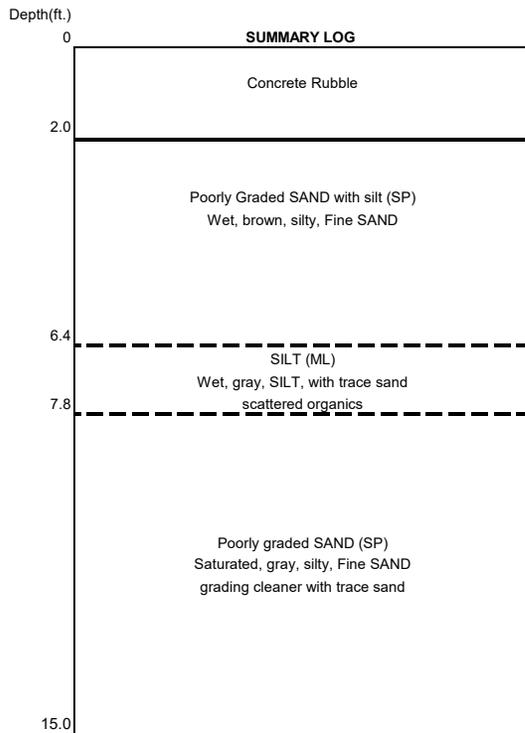
Abbreviations:

- F - fine
- M - medium
- Sat. - saturated
- Mot. - mottled
- NS - No sheen
- LS - Light sheen
- MS - Medium sheen
- HS - Heavy sheen
- NO - No odor
- SLO - Slight odor
- MO - Moderate odor
- SO - Strong odor

LP9

BORING - DESCRIPTION OF SAMPLES & DATA

Field Rep: DG Cooper				Location: N200112 E1270131 (NAD83)				
Drilling Co.: Cascade				Elevation (Ft.):		Ground Surface: Concrete Slab		
Driller: Tim				Date Completed: 1/27/2021				
Drill Type: Geoprobe 7822DT				Weather: Rain 40F				
Size/Type Casing: 2" Rod				Hammer Type: Direct push		Sampler Type: 1.5" dia. X 60" Macro-core w/ acrylic liner		
Soil Sample No.	Sample Interval	PID (ppm)	Depth (Ft.)	Odor/Sheen	Spl Depth (Ft.) From - To	Spl length inches	Time	Sample Description
					0-5	42		0-2' Concrete rubble
		0.0	3	NO/NS				2-3.5' Wet, brown, silty, F SAND
LP9-5	5-6	0.0	5	NO/NS	5-10	48	0920	5-6.4' Wet, brown, silty F SAND, thin roots
LP9-8	8-9	0.0	7	NO/NS			0930	6.4-7.8' Wet, brown, SILT with trace sand, scattered thin organics
		0.0	9	NO/NS				7.8-9.0' Saturated, gray, silty F SAND
					10-15	48		10-15' Saturated, gray, F SAND with trace silt
LP9-11	11-12	0.0	10	NO/NS			0940	
		0.0	12	NO/NS				
		0.0	14	NO/NS				
								NOTE: Saturated @ 7.8'
								Completed boring backfilled with granular bentonite



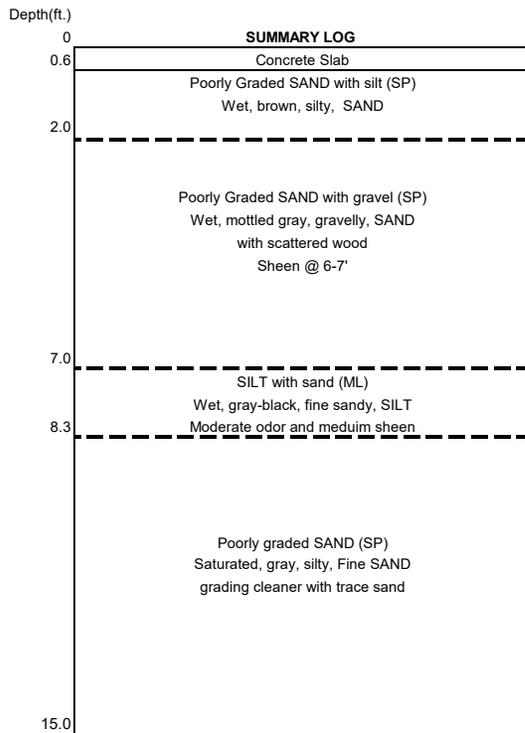
(Bottom of Boring)
NOTE: The summary log is an interpretation based on samples, drill action and interpolation. Variations between what is shown and actual conditions should be anticipated.

- Abbreviations:** F - fine
M - medium
Sat. - saturated
Mot. - mottled
NS - No sheen
LS - Light sheen
MS - Medium sheen
HS - Heavy sheen
NO - No odor
SLO - Slight odor
MO - Moderate odor
SO - Strong odor

LP10

BORING - DESCRIPTION OF SAMPLES & DATA

Field Rep: DG Cooper				Location: N200103 E1270120 (NAD83)				
Drilling Co.: Cascade				Elevation (Ft.):		Ground Surface: Concrete Slab		
Driller: Tim				Date Completed: 1/27/2021				
Drill Type: Geoprobe 7822DT				Weather: Clear 40F				
Size/Type Casing: 2" Rod				Hammer Type: Direct push		Sampler Type: 1.5" dia. X 60" Macro-core w/ acrylic liner		
Soil Sample No.	Sample Interval	PID (ppm)	Depth (Ft.)	Odor/Sheen	Spl Depth (Ft.) From - To	Spl length inches	Time	Sample Description
					0-5	42		0-0.5' Concrete slab
		0.0	1	NO/NS				0.5-2.0' Wet, mottled brown, silty SAND
		4.8	3	SLO/NS				2.0-3.5' Wet, mottled gray, gravelly SAND, with some silt
LP10-5	5-6	1.3	5	NO/NS	5-10	46	1100	5.0-7.0' Wet, mottled gray, gravelly SAND, with some silt and scattered wood
LP10-7	7-8	20.5	7	MO/MS		2 attempts	1110	7.0-8.3' Saturated, mottled gray-black, F sandy, SILT
								8.3-8.8' Saturated, gray, silty F SAND
					10-15	60		10-15' Saturated, gray, F SAND, with trace silt.
LP10-10	10-11	0.0	10	NO/NS			1120	
		0.1	12	NO/NS				
		0.9	14	NO/NS				
								NOTE: Saturated @ 7.0'
								Completed boring backfilled with granular bentonite



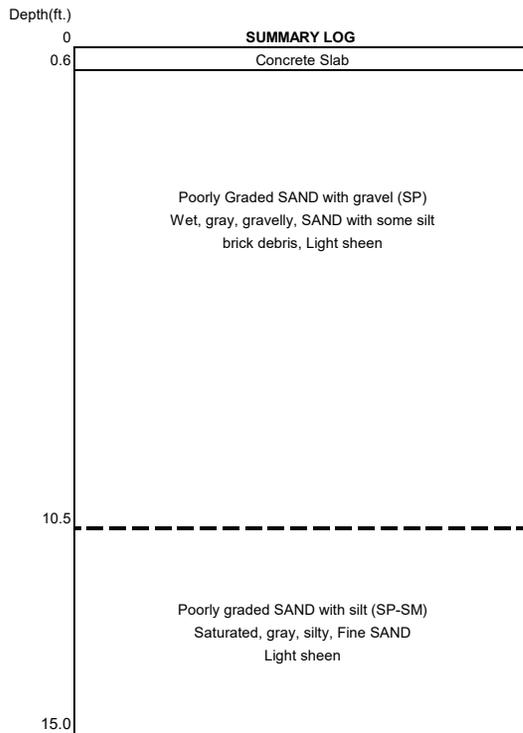
(Bottom of Boring)
NOTE: The summary log is an interpretation based on samples, drill action and interpolation. Variations between what is shown and actual conditions should be anticipated.

- Abbreviations:** F - fine
M - medium
Sat. - saturated
Mot. - mottled
NS - No sheen
LS - Light sheen
MS - Medium sheen
HS - Heavy sheen
NO - No odor
SLO - Slight odor
MO - Moderate odor
SO - Strong odor

LP11

BORING - DESCRIPTION OF SAMPLES & DATA

Field Rep: DG Cooper				Location: N200095 E1270105 (NAD83)				
Drilling Co.: Cascade				Elevation (Ft.):		Ground Surface: Concrete Slab		
Driller: Tim				Date Completed: 1/27/2021				
Drill Type: Geoprobe 7822DT				Weather: Cloudy 40F				
Size/Type Casing: 2" Rod				Hammer Type: Direct push		Sampler Type: 1.5" dia. X 60" Macro-core w/ acrylic liner		
Soil Sample No.	Sample Interval	PID (ppm)	Depth (Ft.)	Odor/Sheen	Spl Depth (Ft.) From - To	Spl length inches	Time	Sample Description
					0-5	46		0-0.6' Concrete slab
LP11-3	3-3.8	0.0	1	NO/NS			1150	0.6-3.8' Wet, mottled gray, gravelly SAND, with some silt, scattered wood
		0.0	2	NO/NS				
		0.0	3	NO/NS				
					5-10	18		5.0-6.5' Wet, mottled gray, gravelly SAND with some silt
		0.6	5	NO/NS		2 attempts		wood and brick debris, sheen 5.5-6'
LP11-6	5.5-6.5	4.4	6	SLO/LS			1200	
					10-15	22		10-10.5' Wet, mottled gray, gravelly SAND with some silt.
LP11-11	10.5-11.5	7.5	11	SLO/LS		2 attempts	1210	10.5-11.8' Saturated, dark gray, silty F SAND
								Poor sample recovery - disturbed
								NOTE: Saturated @ 10.5'
								Completed boring backfilled with granular bentonite



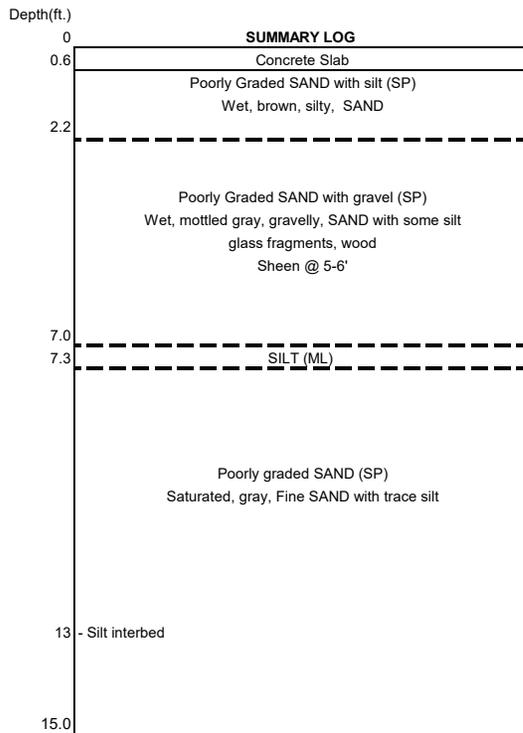
(Bottom of Boring)
NOTE: The summary log is an interpretation based on samples, drill action and interpolation. Variations between what is shown and actual conditions should be anticipated.

- Abbreviations:** F - fine
M - medium
Sat. - saturated
Mot. - mottled
NS - No sheen
LS - Light sheen
MS - Medium sheen
HS - Heavy sheen
NO - No odor
SLO - Slight odor
MO - Moderate odor
SO - Strong odor

LP12

BORING - DESCRIPTION OF SAMPLES & DATA

Field Rep: DG Cooper				Location: N200085 E1270130 (NAD83)				
Drilling Co.: Cascade				Elevation (Ft.):		Ground Surface: Concrete Slab		
Driller: Tim				Date Completed: 1/28/2021				
Drill Type: Geoprobe 7822DT				Weather: Rain 40F				
Size/Type Casing: 2" Rod				Hammer Type: Direct push		Sampler Type: 1.5" dia. X 60" Macro-core w/ acrylic liner		
Soil Sample No.	Sample Interval	PID (ppm)	Depth (Ft.)	Odor/Sheen	Spl Depth (Ft.) From - To	Spl length inches	Time	Sample Description
					0-5	40		0-0.6' Concrete slab
		0.0	2	NO/NS				0.6-2.2' Wet, brown, silty SAND with some gravel
		0.0	3	NO/NS				2.2-3.3' Wet, mottled gray, gravelly SAND with some silt, and black glass fragments
LP12-5	5-6	4.4	5	SLO/NS	5-10	40	0940	5-6.7' Wet mottled gray, gravelly SAND with some silt
LP12-7	7-8	0.7	7	NS/NO			0945	glass fragments - cored wood at 5' and 6.2'
								6.7-7.0' Wet, gray SILT with trace organics
								7.0-8.3' Saturated, gray, F SAND with trace silt
					10-15	60		10-15' Saturated, gray, F SAND with trace silt
LP12-10	10-11	0.1	10	NO/NS			0950	silt interbed at 13.0'
								NOTE: Saturated @ 7.0'
								Completed boring backfilled with granular bentonite



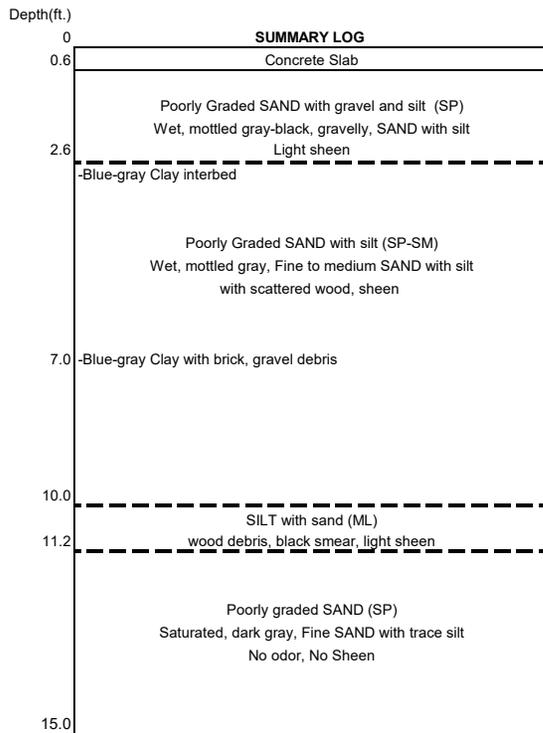
(Bottom of Boring)
NOTE: The summary log is an interpretation based on samples, drill action and interpolation. Variations between what is shown and actual conditions should be anticipated.

- Abbreviations:** F - fine
M - medium
Sat. - saturated
Mot. - mottled
NS - No sheen
LS - Light sheen
MS - Medium sheen
HS-Heavy sheen
NO - No odor
SLO - Slight odor
MO - Moderate odor
SO - Strong odor

LP13

BORING - DESCRIPTION OF SAMPLES & DATA

Field Rep: DG Cooper				Location: N200073 E1270101 (NAD83)				
Drilling Co.: Cascade				Elevation (Ft.):		Ground Surface: Concrete Slab		
Driller: Tim				Date Completed: 1/28/2021				
Drill Type: Geoprobe 7822DT				Weather: Rain 40F				
Size/Type Casing: 2" Rod				Hammer Type: Direct push		Sampler Type: 1.5" dia. X 60" Macro-core w/ acrylic liner		
Soil Sample No.	Sample Interval	PID (ppm)	Depth (Ft.)	Odor/Sheen	Spl Depth (Ft.) From - To	Spl length inches	Time	Sample Description
					0-5	40		0-0.6' Concrete slab
		0.0	1	NO/NS				0.6-1.5' Wet, brown, gravelly SAND with silt
		9.3	2	SLO/LS				1.5-2.6' Wet, mottled gray, gravelly SAND with silt, stained gray-black
		0.5	3	NO/NS				2.6-3.3' Wet, dark gray, F SAND, blue-gray silt laminated interbed at 3'
LP13-5	5-6	6.5	5	SLO/LS	5-10	36	1020	5.0-7.0' Wet, dark gray F-M SAND, with some gravel, trace silt
LP13-7	7-7.5	10.1	6	SLO/LS			1025	wood scattered throughout
		1.6	7	NO/NS				7.0-7.5' Wet, blue-gray clay, plastic, m stiff with red brick fragment and gravel
		5.8	8	NO/NS				7.5-8.0' Saturated, dark gray, F SAND with wood
LP13-10	10-11	3.3	10	SLO/LS	10-15	50	1120	10-11.2' Wet, black SILT with fine sand, wood debris, black smear
LP13-12	12-13	0.6	12	NO/NS			1125	11.2-14.2' Saturated, dark gray F SAND with trace silt
		0.1	14	NO/NS				
								NOTE: Saturated @ 7.5'
								Completed boring backfilled with granular bentonite



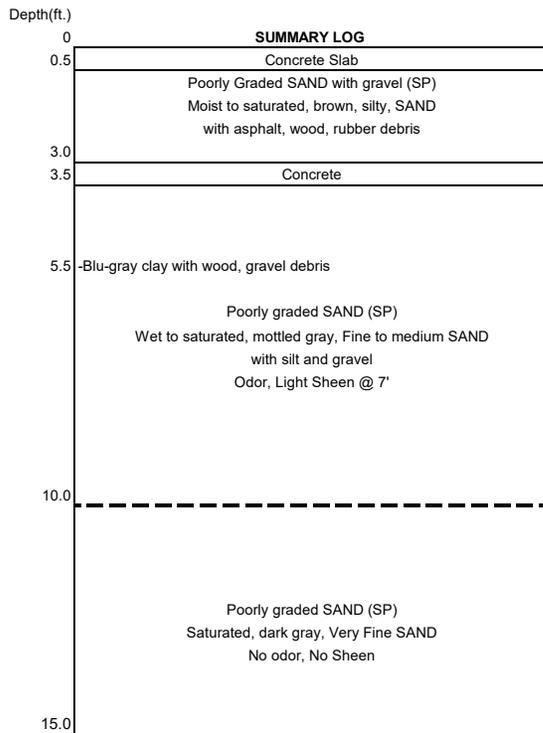
(Bottom of Boring)
NOTE: The summary log is an interpretation based on samples, drill action and interpolation. Variations between what is shown and actual conditions should be anticipated.

- Abbreviations:**
- F - fine
 - M - medium
 - Sat. - saturated
 - Mot. - mottled
 - NS - No sheen
 - LS - Light sheen
 - MS - Medium sheen
 - HS - Heavy sheen
 - NO - No odor
 - SLO - Slight odor
 - MO - Moderate odor
 - SO - Strong odor

BORING - DESCRIPTION OF SAMPLES & DATA

LP14

Field Rep: DG Cooper				Location: N200053 E1270120 (NAD83)				
Drilling Co.: Cascade				Elevation (Ft.): 15.5 MLLW		Ground Surface: Concrete Slab		
Driller: Tim				Date Completed: 1/28/2021				
Drill Type: Geoprobe 7822DT				Weather: Rain 45F				
Size/Type Casing: 2" Rod				Hammer Type: Direct push		Sampler Type: 1.5" dia. X 60" Macro-core w/ acrylic liner		
Soil Sample No.	Sample Interval	PID (ppm)	Depth (Ft.)	Odor/Sheen	Spl Depth (Ft.) From - To	Spl length inches	Time	Sample Description
					0-5	42		0-0.5' Concrete slab
		0.4	1	NO/NS				0.5-1.5' Wet, brown, SAND with some gravel
		116.0	2	NO/NS				1.5-3.0' Wet, mottled gray-black, gravelly SAND and mix of wood debris, rubber, and asphalt
								3.0-3.5' Concrete
LP14-5	5-6	4.0	5	NO/NS	5-10	30	1250	5-5.6' Wet, dark gray, F-M SAND with some gravel
LP14-7	6.5-7.5	31.1	7	strange odor/LS			1300	5.6-6.1' Wet, blue-gray, clay with wood and gravel debris
								6.1-7.5' Wet, mottled gray, F-M SAND with some silt and gravel
LP14-10	10-11	0.1	10	NO/NS	10-15	54	1310	10-15' Saturated, gray, very fine SAND, with trace to some silt
		0.2	12	NO/NS				
		0.1	14	NO/NS				
NOTE: Saturated @ 10.0'								
Completed boring backfilled with granular bentonite								



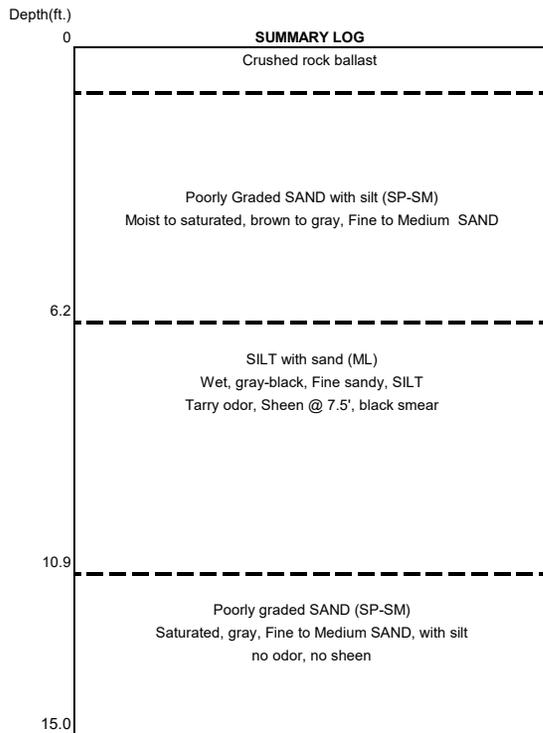
(Bottom of Boring)
NOTE: The summary log is an interpretation based on samples, drill action and interpolation. Variations between what is shown and actual conditions should be anticipated.

- Abbreviations:**
- F - fine
 - M - medium
 - Sat. - saturated
 - Mot. - mottled
 - NS - No sheen
 - LS - Light sheen
 - MS - Medium sheen
 - HS - Heavy sheen
 - NO - No odor
 - SLO - Slight odor
 - MO - Moderate odor
 - SO - Strong odor

BORING - DESCRIPTION OF SAMPLES & DATA

LP15

Field Rep: DG Cooper				Location: N199979 E1270187(NAD83)				
Drilling Co.: Cascade				Elevation (Ft.):		Ground Surface: Gravel		
Driller: Tim				Date Completed: 1/28/2021				
Drill Type: Geoprobe 7822DT				Weather: Cloudy 45F				
Size/Type Casing: 2" Rod				Hammer Type: Direct push		Sampler Type: 1.5" dia. X 60" Macro-core w/ acrylic liner		
Soil Sample No.	Sample Interval	PID (ppm)	Depth (Ft.)	Odor/Sheen	Spl Depth (Ft.) From - To	Spl length inches	Time	Sample Description
					0-5	30		0-1' Moist, mottled gray-brown silty SAND and crushed rock ballast
		0.3	1	NO/NS				1-2.5' Wet, gray, gravelly, silty, SAND
		0.1	2	NO/NS				
LP15-5	5-6	0.3	5	NO/NS	5-10	45	1500	5-6.2' Wet, mottled gray-brown, silty SAND and crushed rock ballast
LP15-7	7-8	0.5	7	MO/LS			1505	6.2-8.3' Wet to sat, mottled gray-black fine sandy, SILT with organics sheen @ 7.5' grading sandy below 8.0' with black smear
LP15-10	10-11	0.4	10	NO/NS	10-15	48	1510	10-10.9' Saturated, black SILT with black smear
LP15-12	11.5-12.5	0.5	12	MO/NS			1515	10.9-12.8' Saturated, black organic, fine sandy SILT
LP15-14	13-14	0.3	14	NO/NS			1520	with wood debris and glass fragments, sulfurous odor
								12.8-14' Saturated, mottled gray, silty F SAND with organics and black staining
NOTE: Saturated @ 8.0'								
Completed boring backfilled with granular bentonite								



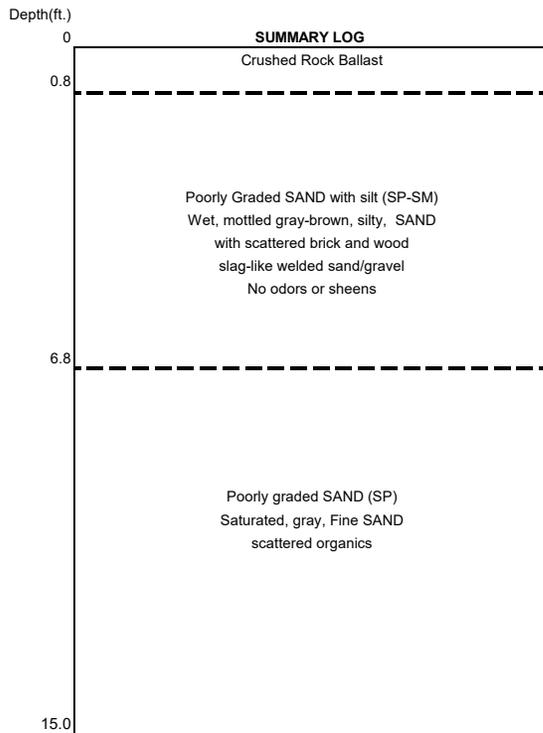
(Bottom of Boring)
NOTE: The summary log is an interpretation based on samples, drill action and interpolation.
Variations between what is shown and actual conditions should be anticipated.

- Abbreviations:**
- F - fine
 - M - medium
 - Sat. - saturated
 - Mot. - mottled
 - NS - No sheen
 - LS - Light sheen
 - MS - Medium sheen
 - HS - Heavy sheen
 - NO - No odor
 - SLO - Slight odor
 - MO - Moderate odor
 - SO - Strong odor

LP16

BORING - DESCRIPTION OF SAMPLES & DATA

Field Rep: DG Cooper				Location: N199965 E1270174(NAD83)				
Drilling Co.: Cascade				Elevation (Ft.):		Ground Surface: Gravel		
Driller: Tim				Date Completed: 1/28/2021				
Drill Type: Geoprobe 7822DT				Weather: Cloudy 45F				
Size/Type Casing: 2" Rod				Hammer Type: Direct push		Sampler Type: 1.5" dia. X 60" Macro-core w/ acrylic liner		
Soil Sample No.	Sample Interval	PID (ppm)	Depth (Ft.)	Odor/Sheen	Spl Depth (Ft.) From - To	Spl length inches	Time	Sample Description
					0-5	42		0-0.8' Wet, dark brown, silty SAND and crushed rock ballast
		0.0	1	NO/NS				0.8-3.5' Wet, mottled gray-brown, silty SAND with gravel scattered
		0.1	3	NO/NS				brick and wood
LP16-5	5.5-6.5	0.5	5	NO/NS	5-10	45	1400	5-5.4' Wet, black granular slag-like sand-gravel. Welded pieces up to 1"
LP16-7	7-8	0.4	7	NO/NS			1410	5.4-6.8' Wet, mottled gray-brown, silty SAND with slag-like chunk at 6.3'
								6.8-8.8' Wet-sat, gray, F SAND with trace-some silt and oxidized interbeds with organics
LP16-10	10-11	0.3	10	NO/NS	10-15	60	1420	10-15' Saturated, gray, F SAND with trace-some silt
		0.8	12	NO/NS				
		0.4	14	NO/NS				
								NOTE: Saturated @ 8.0'
								Completed boring backfilled with granular bentonite



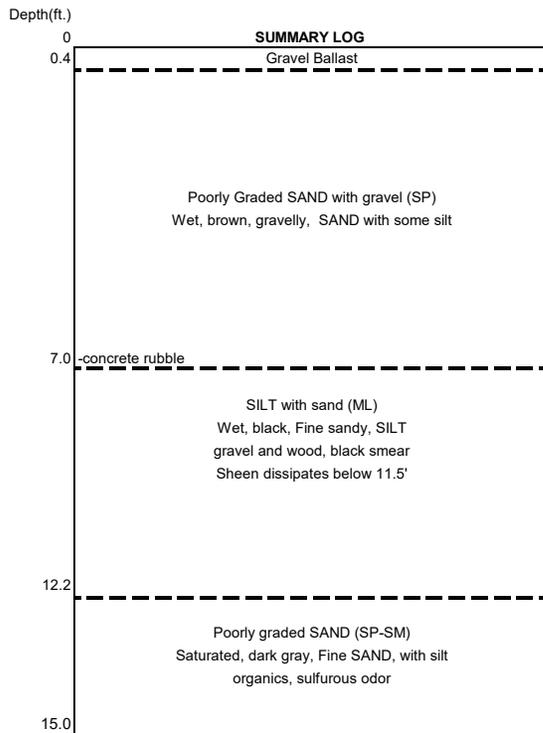
(Bottom of Boring)
NOTE: The summary log is an interpretation based on samples, drill action and interpolation. Variations between what is shown and actual conditions should be anticipated.

- Abbreviations:** F - fine
M - medium
Sat. - saturated
Mot. - mottled
NS - No sheen
LS - Light sheen
MS - Medium sheen
HS-Heavy sheen
NO - No odor
SLO - Slight odor
MO - Moderate odor
SO - Strong odor

LP17

BORING - DESCRIPTION OF SAMPLES & DATA

Field Rep: DG Cooper				Location: N199956 E1270201 (NAD83)				
Drilling Co.: Cascade				Elevation (Ft.):		Ground Surface: Gravel		
Driller: Tim				Date Completed: 1/29/2021				
Drill Type: Geoprobe 7822DT				Weather: Clear 40F				
Size/Type Casing: 2" Rod				Hammer Type: Direct push		Sampler Type: 1.5" dia. X 60" Macro-core w/ acrylic liner		
Soil Sample No.	Sample Interval	PID (ppm)	Depth (Ft.)	Odor/Sheen	Spl Depth (Ft.) From - To	Spl length inches	Time	Sample Description
					0-5	36		0-0.4' Gravel ballast
		0.1	1	NO/NS				0.4-3.0' Wet, brown, gravelly SAND with some silt
		0.0	3	NO/NS				
LP17-6	5.5-6.5	0.1	6	NO/NS	5-10	48	0910	5-6.8' Wet, brown, gravelly SAND with some silt
						2 attempts		6.8-7.0' Concrete rubble
								7.0-8.0' Wet, black, fine sandy SILT, grading into a silty gravel with black smear
LP17-10	10-11	0.2	10	NO/HS	10-15	60	0920	10-12.2' Saturated, black, SILT, wood and gravel from 10-11.5'
LP17-14	13.5-14.5	4.4	11	SLO/HS			0930	and black smear
		0.5	12	NO/NS				12.2-13.3' Saturated, brown, organic silty, F SAND
		0.4	13	SO/NS				13.3-15' Saturated, dark gray, F SAND with silty interbeds at 14' and 15'
		0.7	15	NO/NS				Sulfurous odor, carry-down on liner
NOTE: Saturated @ 10.0'								
Completed boring backfilled with granular bentonite								



(Bottom of Boring)
NOTE: The summary log is an interpretation based on samples, drill action and interpolation.
Variations between what is shown and actual conditions should be anticipated.

- Abbreviations:** F - fine
M - medium
Sat. - saturated
Mot. - mottled
NS - No sheen
LS - Light sheen
MS - Medium sheen
HS - Heavy sheen
NO - No odor
SLO - Slight odor
MO - Moderate odor
SO - Strong odor

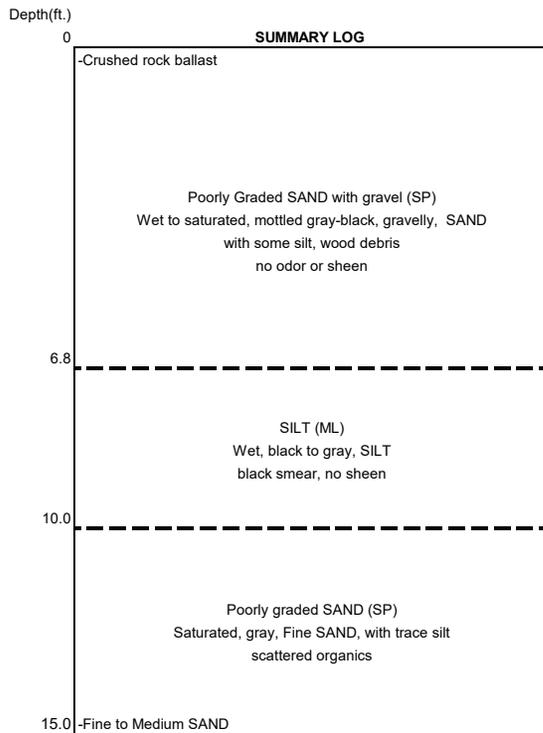
LP18

BORING - DESCRIPTION OF SAMPLES & DATA

Field Rep: DG Cooper				Location: N199929 E1270215 (NAD83)				
Drilling Co.: Cascade				Elevation (Ft.):		Ground Surface: Gravel		
Driller: Tim				Date Completed: 1/29/2021				
Drill Type: Geoprobe 7822DT				Weather: Cloudy 40F				
Size/Type Casing: 2" Rod				Hammer Type: Direct push		Sampler Type: 1.5" dia. X 60" Macro-core w/ acrylic liner		
Soil Sample No.	Sample Interval	PID (ppm)	Depth (Ft.)	Odor/Sheen	Spl Depth (Ft.) From - To	Spl length inches	Time	Sample Description
					0-5	36		0-0.3' Crushed rock ballast
		0.0	1	NO/NS				0.4-3.0' Wet, brown, gravelly SAND with some silt
		0.1	3	NO/NS				
LP18-5	5-6	0.1	5	NO/NS	5-10	36	0950	5-6.8' Saturated, brown, gravelly SAND with some silt
LP18-7	7-8	0.1	7	NO/NS			1000	6.8-8.0' Wet, black, silt, grading to dark gray with black smear
LP18-10	10-11	0.9	10	NO/NS	10-15	60	1010	10-14.5' Saturated, gray, F SAND with trace silt, thin organics and roots
		0.3	12	NO/NS				14.5-15.0' Saturated, dark gray, F-M SAND
		0.4	14	NO/NS				
LP-DUP	Duplicate of LP18-10						1015	

NOTE: Saturated @ 5.0'

Completed boring backfilled with granular bentonite



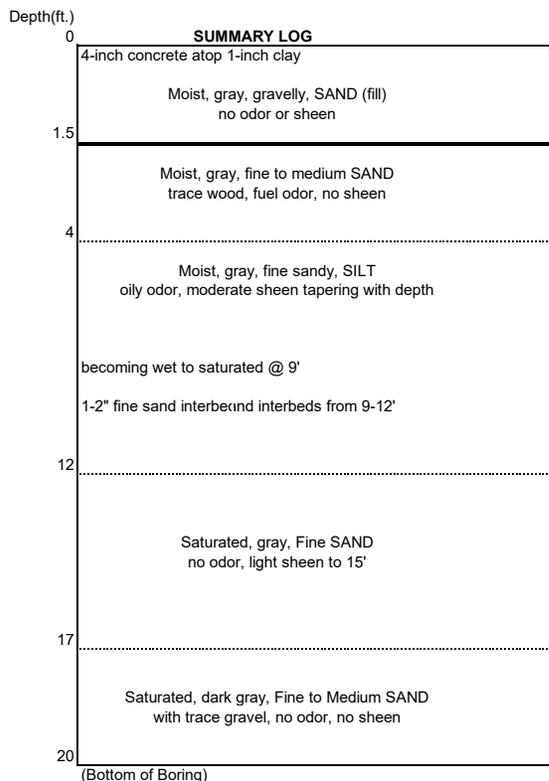
NOTE: The summary log is an interpretation based on samples, drill action and interpolation. Variations between what is shown and actual conditions should be anticipated.

- Abbreviations:**
- F - fine
 - M - medium
 - Sat. - saturated
 - Mot. - mottled
 - NS - No sheen
 - LS - Light sheen
 - MS - Medium sheen
 - HS - Heavy sheen
 - NO - No odor
 - SLO - Slight odor
 - MO - Moderate odor
 - SO - Strong odor

BORING - DESCRIPTION OF SAMPLES & DATA

Field Rep: DG Cooper			Location: 7152 1st Ave. S, Seattle, WA				
Drilling Co.: Cascade			Elevation (Ft.):		Ground Surface: Concrete Slab		
Driller: Frank			Date Completed: 7/21/08		Weather: Sunny 80F		
Drill Type: AMS 9630 Power Probe			Hammer Type: Percussion		Sampler Type: 4' long x 2" dia. Macro Core w/ acrylic sleeve		
Size/Type Casing: 2"							
Spl.No.	Type sample saved	Drill Action	Testing	Spl Depth (Ft.) From - To	Spl length inches	Time	Sample Description
		smooth		0-4	30		4" concrete, 1" clay
P2-A	grab @ 2'					1345	0.5-1.5' moist, gry, gravelly, SAND, no odor, no sheen
							1.5-4' moist, gry, F-M SAND, w/trace wood, fuel odor, no sheen
				4-8	48		4-8' moist, F sandy, SILT, oily odor, moderate sheen tapering with depth
P2-B	grab @ 5'		A1, A2, A3			1350	
P2-C	grab @7.5'					1355	
				8-12	48		8-9' as above
P2-D	grab @ 10'		A1, A2, A3			1400	9-12' wet-sat, gry, F sandy, SILT, w/occ 1-2" sand interbeds
							no odor, light sheen
				12-16	48		12-15' sat, gry, F sand, w/light sheen
P2-E	grab @ 15'		A1, A2, A3			1405	15-16' sat, gry, silty, F SAND, no odor, light sheen
				16-20	48		16-17' as above
P2-F	grab @ 17'				piston	1410	17-20' sat, dk gry, F-M SAND, w/trace gravel, no odor, no sheen
P2-G	grab @ 19.5'					1415	

Testing Notes: Analytical A1 - NWTPH-DX
A2 - PCBs
A3 - Lead

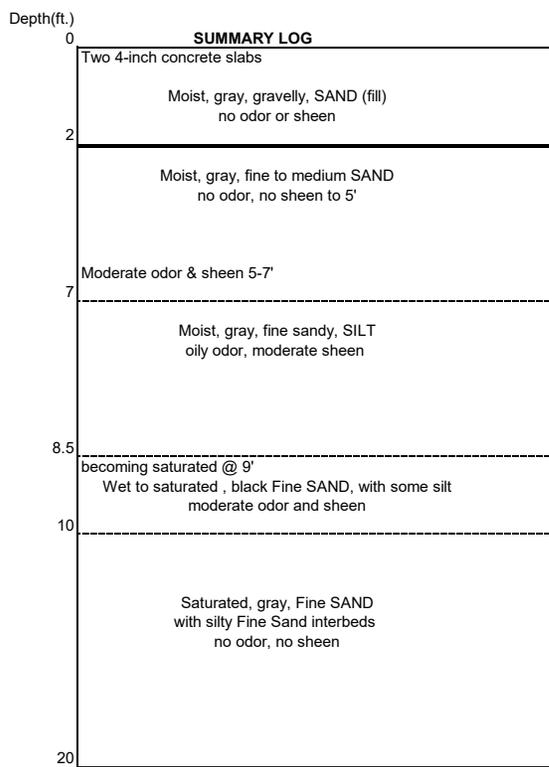


NOTE: The summary log is an interpretation based on samples, drill action, and interpolation. Variations between what is shown and actual conditions should be anticipated.

BORING - DESCRIPTION OF SAMPLES & DATA

Field Rep: DG Cooper			Location: 7152 1st Ave. S, Seattle, WA				
Drilling Co.: Cascade			Elevation (Ft.):				
Driller: Frank			Ground Surface: Concrete Slab				
Drill Type: AMS 9630 Power Probe			Date Completed: 7/21/08				
Size/Type Casing: 2"			Weather: Sunny 80F				
			Hammer Type: Percussion				
			Sampler Type: 4' long x 2" dia. Macro Core w/ acrylic sleeve				
Spl.No.	Type sample saved	Drill Action	Testing	Spl Depth (Ft.) From - To	Spl length inches	Time	Sample Description
		smooth		0-4	24		2 x 4" concrete
P3-A	grab @ 2'					1300	1-2' Wet, mot gry, gravelly, SAND, slight odor, no sheen
							2-3' moist, gry, F-M SAND, no odor, no sheen
				4-8	48		4-5' as above
P3-B	grab @ 5'		A1, A2, A3			1305	5-7' Wet, blk, F-M SAND, w/moderate odor and sheen
P3-C	grab @7.5'					1310	7-8' Wet, blk, F sandy, SILT
				8-12	48		8-8.5' as above
P3-D	grab @ 10'		A1, A2, A3			1315	8.5-10' Wet-sat, blk, F SAND, w/some silt, moderate odor, sheen
							10-12' Sat, gry-bwn, interbedded F sandy SILT & F SAND, sl odor, no shn
				12-16	48		12-16' Sat, gry, silty, F SAND, no odr, no sheen
P3-E	grab @ 15'		A1, A2, A3			1320	
				16-20	48		16-20' Sat, gry, F SAND, w/ 6" silty F SAND interbeds, no odr, no shn
P3-F	grab @ 17'				piston	1325	
P3-G	grab @ 19.5'					1330	

Testing Notes: Analytical A1 - NWTPH-DX
A2 - PCBs
A3 - Lead

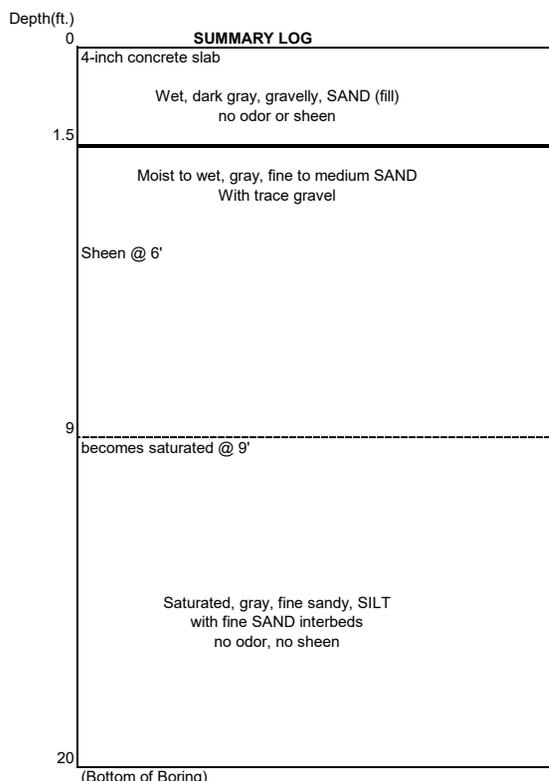


(Bottom of Boring)
NOTE: The summary log is an interpretation based on samples, drill action, and interpolation. Variations between what is shown and actual conditions should be anticipated.

BORING - DESCRIPTION OF SAMPLES & DATA

Field Rep: DG Cooper			Location: 7152 1st Ave. S, Seattle, WA				
Drilling Co.: Cascade			Elevation (Ft.):				
Driller: Frank			Ground Surface: Concrete Slab				
Drill Type: AMS 9630 Power Probe			Date Completed: 7/21/08				
Size/Type Casing: 2"			Weather: Sunny 80F				
			Hammer Type: Percussion				
			Sampler Type: 4' long x 2" dia. Macro Core w/ acrylic sleeve				
Spl.No.	Type sample saved	Drill Action	Testing	Spl Depth (Ft.) From - To	Spl length inches	Time	Sample Description
		smooth		0-4	30		4" concrete, 1" clay
P5-A	grab @ 2'					1215	1-1.5' Wet, dk gry, gravelly, silty, SAND, no odor, no sheen
							1.5-4' moist to wet, gry, F-M SAND w/trace gravel, odor, no sheen
				4-8	18		4-8' as above, grading siltier, increasing sheen
P5-B	grab @ 6'		A1, A2, A3			1220	poor recovery
				8-12	40		8-9' as above, slight odor
P5-C	grab @ 10'		A1, A2, A3			1225	9-12' sat, gry-bwn, F sandy, SILT, w/thin sand interbeds
							no odor, no sheen
				12-16	48		12-16' as above with trace organics, no odor, no sheen
P5-D	grab @ 12.5'					1230	
P5-E	grab @ 15'		A1, A2, A3			1235	
				16-20	48	1240	16-20' sat, gry-bwn, F sandy SILT, with 6" F SAND interbeds
P5-F	grab @ 17.5'				piston	1245	no odr, no sheen
P5-G	grab @ 19.5'						

Testing Notes: Analytical A1 - NWTPH-DX
A2 - PCBs
A3 - Lead

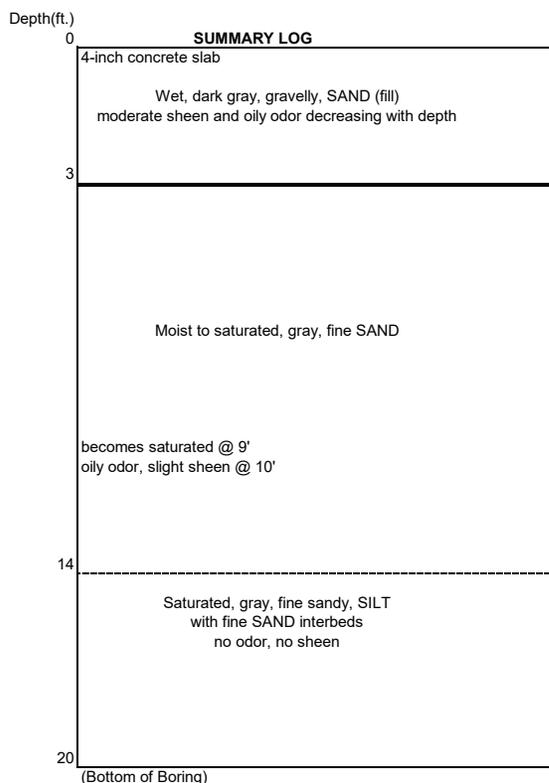


NOTE: The summary log is an interpretation based on samples, drill action, and interpolation. Variations between what is shown and actual conditions should be anticipated.

BORING - DESCRIPTION OF SAMPLES & DATA

Field Rep: DG Cooper		Location: 7152 1st Ave. S, Seattle, WA		Elevation (Ft.):		Ground Surface: Concrete Slab	
Drilling Co.: Cascade		Date Completed: 7/21/08		Weather: Sunny 80F		Hammer Type: Percussion	
Driller: Frank		Date Completed: 7/21/08		Weather: Sunny 80F		Sampler Type: 4' long x 2" dia. Macro Core w/ acrylic sleeve	
Drill Type: AMS 9630 Power Probe		Date Completed: 7/21/08		Weather: Sunny 80F		Sampler Type: 4' long x 2" dia. Macro Core w/ acrylic sleeve	
Size/Type Casing: 2"		Date Completed: 7/21/08		Weather: Sunny 80F		Sampler Type: 4' long x 2" dia. Macro Core w/ acrylic sleeve	
Spl.No.	Type sample saved	Drill Action	Testing	Spl Depth (Ft.) From - To	Spl length inches	Time	Sample Description
		smooth		0-4	36		4" concrete
P6-A	grab @ 0.5'					1135	0.5-1.5' moist, blk, gravelly, SAND, stained, moderate sheen, odor
P6-B	grab @ 2.5'					1140	1.5-3' moist, mot bwn, gravelly, silty SAND, slight oil odor
				4-8	36		3-4' moist, mot gry, F-M SAND, slight odor, no sheen
							4-6' as above
P6-C	grab @ 5'		A1, A2, A3			1145	6-8' moist to we, gry, F SAND, no odor, no sheen
P6-D	grab @ 7.5'					1150	
				8-12	48		8-10.5 as above becoming sat
P6-E	grab @ 10'		A1, A2, A3			1155	10.5-12' sat, gry-blk, F SAND, w/trace silt, organics
							moderate odor, sheen
				12-16	48		12-14' as above
P6-F	grab @ 12.5'					1200	14-16' wet, gry-bwn, F sandy, SILT, no odor, no sheen
P6-G	grab @ 15'		A1, A2, A3			1205	
				16-20	48	1210	16-18' as above w/trace organics
P6-H	grab @ 17.5'				piston	1220	19-10' sat, gry-bwn, F sandy SILT w/ F SAND interbeds
P6-I	grab @ 19.5'						no odor, no sheen

Testing Notes: Analytical A1 - NWTPH-DX
A2 - PCBs
A3 - Lead

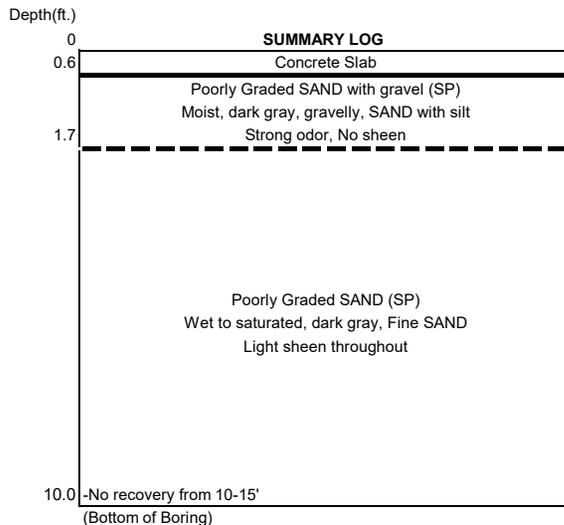


NOTE: The summary log is an interpretation based on samples, drill action, and interpolation. Variations between what is shown and actual conditions should be anticipated.

P8-10S

BORING - DESCRIPTION OF SAMPLES & DATA

Field Rep: DG Cooper				Location: N200197 E1270040 (NAD83)				
Drilling Co.: Cascade				Elevation (Ft.):		Ground Surface: Concrete Slab		
Driller: Portz				Date Completed 11/6/2020				
Drill Type: Geoprobe 6600				Weather: Clear Cloudy 50F				
Size/Type Casing: 2" Rod				Hammer Type: Direct push		Sampler Type: 1.5" dia. X 60" Macro-core w/ acrylic liner		
Soil Sample No.	Sample Interval	PID (ppm)	Depth (Ft.)	Odor/Sheen	Spl Depth (Ft.) From - To	Spl length inches	Time	Sample Description
					0-5	50		0-0.5'concrete
P8-10S-1	1-2	55.0	1	SO/NS			0820	0.5-1.7 moist, mottled gray, gravelly SAND with some silt
P8-10S-2.5	2-3	16.0	2.5	SO/NS			0825	1.7-4.2 wet, gray, F SAND.
					5-10	36		5-6.6 wet, gray, F SAND
P8-10S-5	5-6	14.5	5	SLO/LS			0830	6.6-8.0 saturated, mottled gray
		21.2	6	SLO/LS				
P8-10S-7.5	7-8	8.5	7.5	NO/LS			0835	
					10-15			no recovery
NOTE: Saturated @ 6.6'								
Completed boring backfilled with granular bentonite								

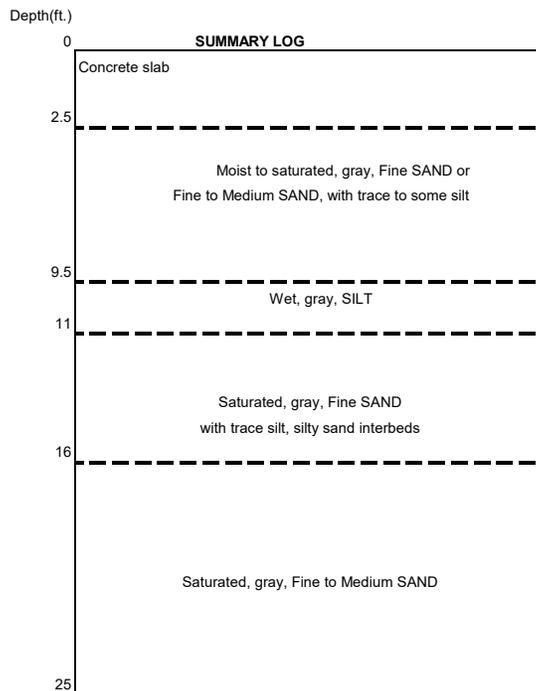


NOTE: The summary log is an interpretation based on samples, drill action and interpolation. Variations between what is shown and actual conditions should be anticipated.

- Abbreviations:** F - fine
 M - medium
 Sat. - saturated
 Mot. - mottled
 NS - No sheen
 LS - Light sheen
 MS - Medium sheen
 HS-Heavy sheen
 NO - No odor
 SLO - Slight odor
 MO - Moderate odor
 SO - Strong odor

BORING - DESCRIPTION OF SAMPLES & DATA

Field Rep: DG Cooper			Location: N200029 E1269977 NAD83/96				
Drilling Co.: Cascade			Elevation (Ft.): Ground Surface: Concrete				
Driller: Aaron			Date Completed: 11/17/14				
Drill Type: Geoprobe 7730DT			Weather: Clear 40F				
Size/Type Casing: 2"			Hammer Type: Direct push		Sampler Type: 5' long x 2" dia. Macro retained in an acrylic sleeve		
Sample Number	Sample Interval (ft. bgs.)	PID Headspace (ppm)	Odor/Sheen	Spl Depth (Ft.) From - To	Spl length inches	Time	Sample Description
				0-5	50		4" Concrete slab
							0.4-1.0' Damp, mot gry, gravelly, SAND, w/some silt
							1.0-1.3' old concrete slab
P11-SO-2	1.5-2.5	126	MO/NS			1105	1.3-2.5' Moist, mot gry, silty, F SAND, w/ metal, oily odor
P11-SO-4	3.0-4.5	1.9	NO/NS			1120	2.5-5' Moist, gry, F-M SAND
				5-10	50		5-9.5' Wet-sat, gry, F SAND, w/trace to some silt
P11-SO-7	6-8	0.8	NO/NS			1130	9.5-10' Wet, gry, SILT
P11-SO-10	9.5-11	0.8	NO/NS			1140	
				10-15	60		10-11' wet, bwn-gry, SILT, w/some organics
P11-SO-13	12-14	1.0	NO/NS			1320	11-15' Sat, gry, F SAND, w/trace silt, silty sand interbeds
				15-20	50		15-16' As Above
P11-SO-16	15-17	0.5	NO/NS			1330	16-20' Sat, gry, F-M SAND
				20-25	60		20-25' As Above
P11-SO-22	21-23	0.6	NO/NS			1340	



(Bottom of Boring)

NOTE: The summary log is an interpretation based on samples, drill action and interpretation. Variations between what is shown and actual conditions should be anticipated.

Notes: Temporary Screen set @ 6-10' below ground surface consisting of SS hydropunch.
Water sample collected using peristaltic pump through 1/4" diameter polyethylene tubing with intake @ 9' bgs.
Sample taken: ICS-P11-W-111714 @ 1300

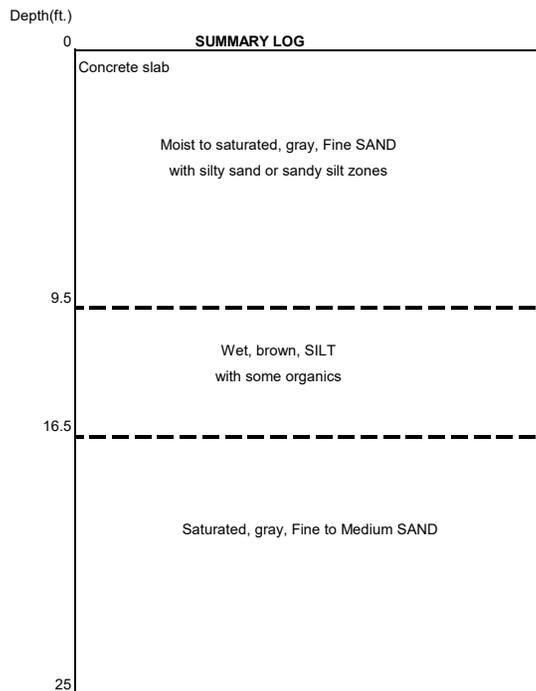
Groundwater parameters:
Temperature - 13.2C
pH - 6.8
Conductivity - 741 uS/cm
Turbidity - 22.8 ntu

Completed boring backfilled with granular bentonite and patched with concrete.

Abbreviations:
gry = gray; bwn = brown; blk = black; mot = mottled
Sheen - NS= none, LS = Light, MS = Moderate, HS = Heavy
Odor - NO= None, SLO = Slight, MO = Moderate, STO = Strong
F = fine; M = medium
Sat = Pores saturated with water

BORING - DESCRIPTION OF SAMPLES & DATA

Field Rep: DG Cooper			Location: N200118 E1269928			Ground Surface: Concrete	
Drilling Co.: Cascade			Elevation (Ft.):				
Driller: Aaron			Date Completed: 11/13/14				
Drill Type: Geoprobe 7730DT			Weather: Clear 45F				
Size/Type Casing: 2"			Hammer Type: Direct push			Sampler Type: 5' long x 2" dia. Macro retained in an acrylic sleeve	
Sample Number	Sample Interval (ft. bgs.)	PID Headspace (ppm)	Odor/Sheen	Spl Depth (Ft.) From - To	Spl length inches	Time	Sample Description
				0-5	50		4" concrete slab
							0.4-1.0' Damp, mot gry, gravelly, SAND, w/some silt
P13-SO-4	4.0-6.0	3.5	MO/NS			0840	4-5' Moist, mot bwn, silty, SAND, w/roots
				5-10	60		5-8.5' Moist, gry, F SAND
P13-SO-7	6.0-8.0	1.5	MO/NS			0850	8.5-9.5' Wet, bwn, F sandy, SILT
P13-SO-10	9.5-11.0	1.5	NO/NS			0900	9.5-10' Sat, gry, F SAND
				10-15	55		10-12' As Above
P13-SO-13	12.0-14.0	0.8	NO/NS			0910	12-15' Wet, bwn, SILT, w/some organics
				15-20	50		15-16.5' As Above
P13-SO-17	16.5-18.0	1.0	NO/NS			1010	16.5-20' Sat, gry, F-M SAND, w/silt interbeds
				20-25	50		20-25' Sat, gry, F-M SAND
P13-SO-22	21.0-23.0	0.6	NO/NS			1020	



(Bottom of Boring)

NOTE: The summary log is an interpretation based on samples, drill action and interpretation. Variations between what is shown and actual conditions should be anticipated.

Notes: Temporary Screen set @ 10-15' below ground surface consisting of 1/2" dia. SCH 40 PVC screen.
Water sample collected using peristaltic pump through 1/4" diameter polyethylene tubing with intake @ 14 bgs.
Sample taken: ICS-P13-W-111314 @ 1000

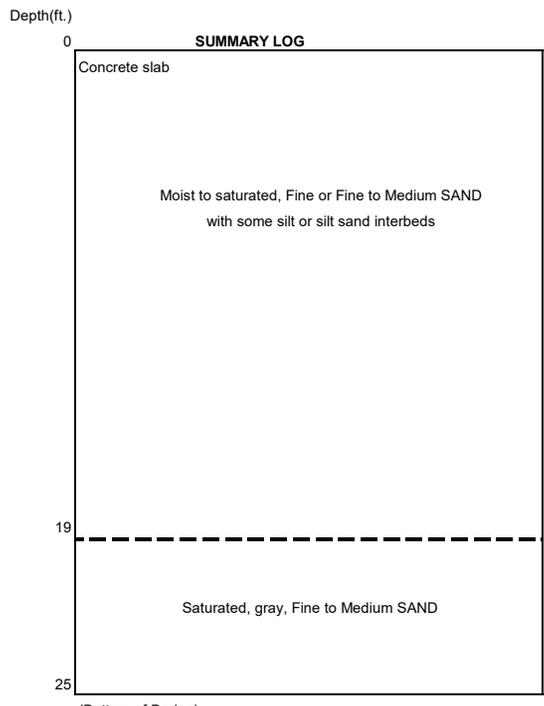
Groundwater parameters:
Temperature - 15.1C
pH - 6.8
Conductivity - 1138 uS/cm
Turbidity - 73 ntu

Completed boring backfilled with granular bentonite and patched with concrete.

Abbreviations:
gry = gray; bwn = brown; blk = black; mot = mottled
Sheen - NS= none, LS = Light, MS = Moderate, HS = Heavy
Odor - NO= None, SLO = Slight, MO = Moderate, STO = Strong
F = fine; M = medium
Sat = Pores saturated with water

BORING - DESCRIPTION OF SAMPLES & DATA

Field Rep: DG Cooper			Location: N200228 E1270120 NAD83/96				
Drilling Co.: Cascade			Elevation (Ft.):				
Driller: Kasey			Ground Surface: Concrete				
Drill Type: Geoprobe 6600			Date Completed: 12/10/14				
Size/Type Casing: 2"			Weather: Rain 60F				
			Hammer Type: Direct push				
			Sampler Type: 5' long x 2" dia. Macro retained in an acrylic sleeve				
Sample Number	Sample Interval (ft. bgs.)	PID Headspace (ppm)	Odor/Sheen	Spl Depth (Ft.) From - To	Spl length inches	Time	Sample Description
				0-5	50		5" concrete slab
							0.4-1.0' Damp, mot gry, gravelly, SAND, w/some silt
							1-4' Moist, bwn, F-M SAND
P16-SO-4	3.0-4.0	1.6	NO/NS			1200	4-5' Moist, bwn, F SAND, w/some silt
				5-10	55		5-6.5' As Above
P16-SO-7	6.0-8.0	1.1	NO/NS			1210	6.5-10' Wet-sat, gry, F SAND, w/silty sand interbeds
P16-SO-10	9.0-10.0	0.9	NO/NS			1220	
				10-15	55		10-15' Sat, gry, silty, F SAND
P16-SO-13	12.0-14.0	1.1	NO/NS			1230	
				15-20	60		15-19' sat, gry, F SAND, w/some silt
P16-SO-16	15.0-17.0	0.1	NO/NS			1415	19-20' Sat, gry, F-M SAND
				20-25			20-25' As Above
P16-SO-22	21.0-23.0	0.8	NO/NS		60	1430	



(Bottom of Boring)
NOTE: The summary log is an interpretation based on samples, drill action and interpretation. Variations between what is shown and actual conditions should be anticipated.

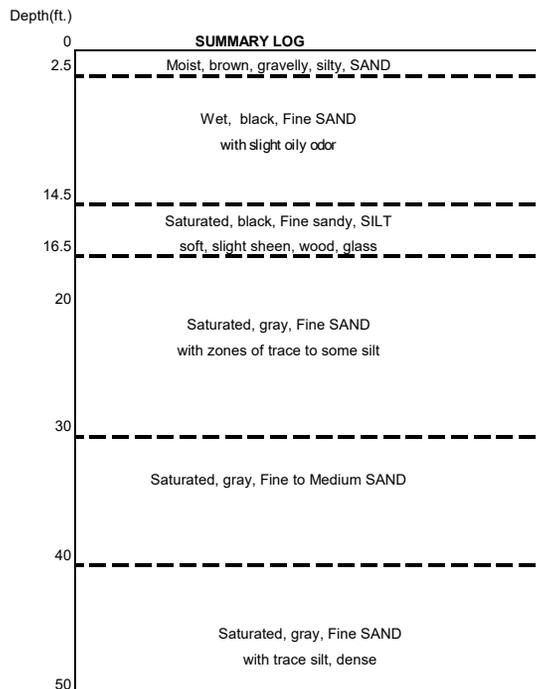
Notes: Temporary Screen set @ 9-14' below ground surface consisting of 1/2" dia. SCH 40 PVC screen.
Water sample collected using peristaltic pump through 1/4" diameter polyethylene tubing with intake @ 13' bgs.
Sample taken: ICS-P16-W-121014 @ 1400
Groundwater parameters:
Temperature - 14.1C
pH - 7.0
Conductivity - 1943 uS/cm
Turbidity - 575 ntu

Completed boring backfilled with granular bentonite and patched with concrete.

Abbreviations:
gry = gray; bwn = brown; blk = black; mot = mottled
Sheen - NS= none, LS = Light, MS = Moderate, HS = Heavy
Odor - NO= None, SLO = Slight, MO = Moderate, STO = Strong
F = fine; M = medium
Sat = Pores saturated with water

BORING - DESCRIPTION OF SAMPLES & DATA

Field Rep: DG Cooper			Location: N200176 E1270073 NAD83/96			Elevation (Ft.):		Ground Surface: Concrete	
Drilling Co.: Cascade			Date Completed: 12/16/14			Weather: Cloudy 45F			
Driller: Kasey			Hammer Type: Direct push			Sampler Type: 5' long x 2" dia. Macro retained in an acrylic sleeve			
Drill Type: Geoprobe 6600									
Size/Type Casing: 2"									
Sample Number	Sample Interval (ft. bgs.)	PID Headspace (ppm)	Odor/Sheen	Spl Depth (Ft.) From - To	Spl length inches	Time	Sample Description		
				0-5	48		4" concrete slab		
							0.4-1.0' Damp, mot gry, gravelly, SAND, w/some silt		
P18-SO-4	3.0-5.0	152	STO/NS			0815	2.5-5' Moist, gry-blk, F SAND		
				5-10	52		5-10' As above, becoming wet, scattered wood, staining		
P18-SO-7	6.0-8.0	44.0	SLO/NS			0825	slight oily odor		
P18-SO-10	9.0-10.0	56.0	SLO/NS			0835			
				10-15	60		10-14' As above		
P18-SO-13	12.0-14.0	15.8	SLO/NS			0845	14-14.5' Wet, bwn-blk, silty, SAND, w/wood		
							14.5-15' Sat, blk F sandy, SILT, soft, glass, slight sheen		
				15-20	30		15-16 Sat, blk, F sandy, SILT / silty, F SAND, w/wood		
P18-SO-16	14.0-16.0	3.0	SLO/SS			0855	16-16.5' Wood core		
							16.5-20' Sat, gry, F SAND		
				20-25	60		20-22' As above		
P18-SO-22	21.0-23.0	3.6	NO/NS			0905	22-25' Sat, gry, F SAND, w/zones of trace to some silt		
				25-30	60		25-30' Sat, gry, F SAND, w/trace silt		
P18-SO-32	31.0-33.0	2.4	NO/NS	30-35	50		30-35' Sat, gry, F-M SAND		
						1100			
				35-40	50		35-40' As above grading finer		
P18-SO-42	41.0-43.0	2.9	NO/NS	40-45	60	1115	40-45' Sat, gry, F SAND, w/trace silt, dense		
P18-SO-50	49.0-50.0	2.6	NO/NS	45-50	60	1130	45-50' As above		



(Bottom of Boring)

NOTE: The summary log is an interpretation based on samples, drill action and interpretation. Variations between what is shown and actual conditions should be anticipated.

Notes: Temporary Screen set @ 25-30' below ground surface consisting of 1/2" dia. SCH 40 PVC screen.

Water sample collected using peristaltic pump through 1/4" diameter polyethylene tubing with intake @ 29' bgs. Sample taken: ICS-P18-W-A-121614 @ 1030

Groundwater parameters:

Temperature - 12.6C
pH - 7.0
Conductivity - 2690 uS/cm
Turbidity - 275 ntu

Temporary Screen set @ 45-50' below ground surface consisting of 1/2" dia. SCH 40 PVC screen.

Water sample collected using peristaltic pump through 1/4" diameter polyethylene tubing with intake @ 49' bgs. Sample taken: ICS-P18-W-B-121614 @ 1300

Groundwater parameters:

Temperature - 13.0C
pH - 6.9
Conductivity - 8,610 uS/cm
Turbidity - 51.9 ntu

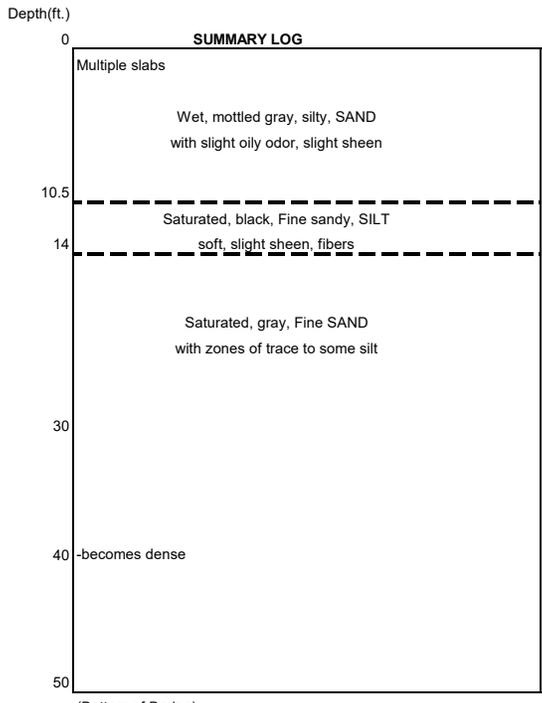
Completed boring backfilled with granular bentonite and patched with concrete.

Abbreviations:

gry = gray; bwn = brown; blk = black; mot = mottled
Sheen - NS= none, LS = Light, MS = Moderate, HS = Heavy
Odor - NO= None, SLO = Slight, MO = Moderate, STO = Strong
F = fine; M = medium
Sat = Pores saturated with water

BORING - DESCRIPTION OF SAMPLES & DATA

Field Rep: DG Cooper			Location: N200078 E1270110 NAD83/96				
Drilling Co.: Cascade			Elevation (Ft.):				
Driller: Aaron			Ground Surface: Concrete				
Drill Type: Geoprobe 7730DT			Date Completed: 12/08/14				
Size/Type Casing: 2"			Weather: Cloudy 50F				
			Hammer Type: Direct push				
			Sampler Type: 5' long x 2" dia. Macro retained in an acrylic sleeve				
Sample Number	Sample Interval (ft. bgs.)	PID Headspace (ppm)	Odor/Sheen	Spl Depth (Ft.) From - To	Spl length inches	Time	Sample Description
				0-5	40		4" concrete slab
							0.4-1.0' Damp, mot gry, gravelly, SAND, w/some silt
							1.0-1.5' weathered concrete slab
P21-SO-4	3.0-5.0	6.8	MO/NS			1210	1.5-5' Wet, mot gry, silty, SAND, w/some gravel
				5-10	50		5-6' Wet, mot gry, gravelly, SAND, w/some silt
P21-SO-7	6.0-8.0	5.3	SLO/SS			1220	6-10' Wet, mot gry, silty, SAND, w/trace organics
P21-SO-10	9.0-11.0	1.2	SLO/SS			1230	slight odor, slight sheen
				10-15	50		10-10.5' As Above
P21-SO-13	12.0-14.0	1.1	SLO/SS			1240	10.5-14' Wet, black, F sandy, SILT, w/organics, fibers 11-12'
							14-15' Sat, gry, F SAND, w/some silt
				15-20	55		15-19' As Above
P21-SO-16	15.0-17.0	0.4	NO/NS			1250	19-20' Sat, gry, F SAND
				20-25	60		20-21' As Above
P21-SO-22	21.0-23.0	0.1	NO/NS			1300	21-25' Sat, gry, F SAND, w/some silt
				25-30	60		25-30' As Above
P21-SO-32	31.0-33.0	0.0	NO/NS	30-35	60	1500	30-35' Sat, gry, F SAND, w/trace silt
				35-40	40		35-40' Sat, gry, F SAND, w/interbeds of trace to some silt
P21-SO-42	41.0-43.0	0.0	NO/NS	40-45	40	1510	40-45' As Above, dense
P21-SO-50	49.0-50.0	0.0	NO/NS	45-50	50	1520	45-50' As above, dense



NOTE: The summary log is an interpretation based on samples, drill action and interpretation. Variations between what is shown and actual conditions should be anticipated.

Notes: Temporary Screen set @ 25-30' below ground surface consisting of 1/2" dia. SCH 40 PVC screen. Water sample collected using peristaltic pump through 1/4" diameter polyethylene tubing with intake @ 29' bgs. Sample taken: ICS-P21-W-A-120814 @ 1400

Groundwater parameters:
Temperature - 13.4C
pH - 6.9
Conductivity - 1163 uS/cm
Turbidity - 190 ntu

Temporary Screen set @ 45-50' below ground surface consisting of 1/2" dia. SCH 40 PVC screen. Water sample collected using peristaltic pump through 1/4" diameter polyethylene tubing with intake @ 49' bgs. Sample taken: ICS-P21-W-B-120814 @ 1600

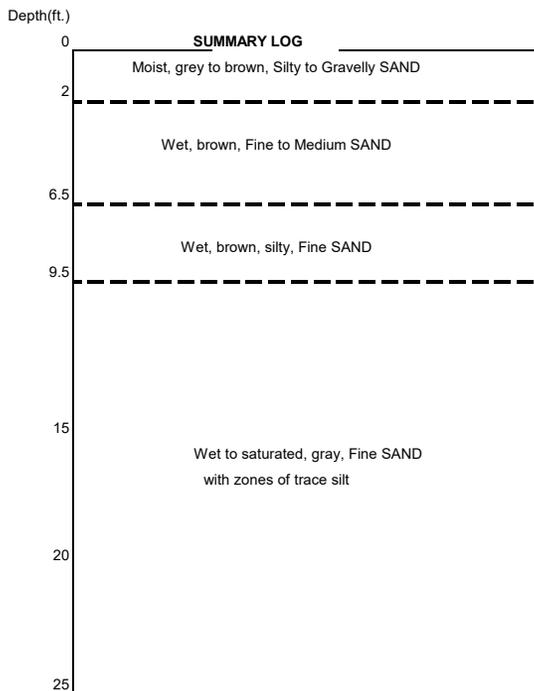
Groundwater parameters:
Temperature - 13.0C
pH - 6.8
Conductivity - 10,960 uS/cm
Turbidity - 119 ntu

Completed boring backfilled with granular bentonite and patched with concrete.

Abbreviations:
gry = gray; bwn = brown; blk = black; mot = mottled
Sheen - NS= none, LS = Light, MS = Moderate, HS = Heavy
Odor - NO= None, SLO = Slight, MO = Moderate, STO = Strong
F = fine; M = medium
Sat = Pores saturated with water

BORING - DESCRIPTION OF SAMPLES & DATA

Field Rep: DG Cooper			Location: N200088 E1270159 NAD83/96				
Drilling Co.: Cascade			Elevation (Ft.):			Ground Surface: Gravel	
Driller: Aaron			Date Completed: 11/12/14				
Drill Type: Geoprobe 7730DT			Weather: Clear 35F				
Size/Type Casing: 2"			Hammer Type: Direct push			Sampler Type: 5' long x 2" dia. Macro retained in an acrylic sleeve	
Sample Number	Sample Interval (ft. bgs.)	PID Headspace (ppm)	Odor/Sheen	Spl Depth (Ft.) From - To	Spl length inches	Time	Sample Description
				0-5	40		0-1' Moist, gry, silty, SAND, w/some gravel
							0.4-1.0' Damp, mot gry, gravelly, SAND, w/some silt
P23-SO-3	2.0-4.0	0	NO/NS			0835	2-5' Moist, bwn F-M SAND
				5-10	60		5-6.5' As Above
P23-SO-7	6.5-8.5	0.1	NO/NS			0845	6.5-9.5' Wet, bwn, silty, F SAND, w/trace organics
P23-SO-10	9.5-11.0	0.0	NO/NS			0855	9.5-10' Wet, gry, F SAND
				10-15	60		10-15' Sat, gry, F SAND, w/zones of trace silt
P23-SO-13	12.0-14.0	0.0	NO/NS			0905	
				15-20	60		15-20' Sat, gry, F SAND
P23-SO-16	15.0-17.0	0.0	NO/NS			0915	
				20-25	60		20-24.5' As Above
P23-SO-22	21.0-23.0	0.3	NO/NS			0925	24.5-25' Sat, gry, F-M SAND



(Bottom of Boring)

NOTE: The summary log is an interpretation based on samples, drill action and interpretation. Variations between what is shown and actual conditions should be anticipated.

Notes: Temporary Screen set @ 10-15' below ground surface consisting of 1/2" dia. SCH 40 PVC screen. Water sample collected using peristaltic pump through 1/4" diameter polyethylene tubing with intake @ 14' bgs. Sample taken: ICS-P23-W-111214 @ 1000

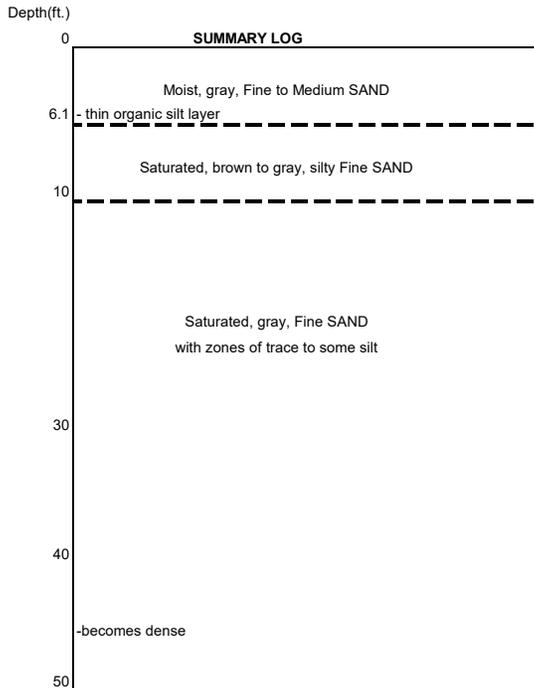
Groundwater parameters:
 Temperature - 10.4C
 pH - 6.8
 Conductivity - 728 uS/cm
 Turbidity - 122 ntu

Completed boring backfilled with granular bentonite

Abbreviations:
 gry = gray; bwn = brown; blk = black; mot = mottled
 Sheen - NS= none, LS = Light, MS = Moderate, HS = Heavy
 Odor - NO= None, SLO = Slight, MO = Moderate, STO = Strong
 F = fine; M = medium
 Sat = Pores saturated with water

BORING - DESCRIPTION OF SAMPLES & DATA

Field Rep: DG Cooper			Location: N199886 E1270262 NAD83/96				
Drilling Co.: Cascade			Elevation (Ft.):				
Driller: Aaron			Ground Surface: grass				
Drill Type: Geoprobe 7730DT			Date Completed: 11/11/14				
Size/Type Casing: 2"			Weather: Clear 45F				
			Hammer Type: Direct push				
			Sampler Type: 5' long x 2" dia. Macro retained in an acrylic sleeve				
Sample Number	Sample Interval (ft. bgs.)	PID Headspace (ppm)	Odor/Sheen	Spl Depth (Ft.) From - To	Spl length inches	Time	Sample Description
				0-5	45		0-1' Wt, bwn, gravelly, SAND, w/some silt
							0.4-1.0' Damp, mot gry, gravelly, SAND, w/some silt
P27-SO-3	1.0-3.0	0.2	NO/NS			0905	
				5-10	60		5-6' As above
P27-SO-7	6.0-8.0	0.1	NO/NS			0910	6-6.1' Wet, bwn, organic, SILT
P27-SO-10	9.0-11.0	0.1	NO/NS			0915	6.1-10' Sat, bwn-gry, silty, F SAND
				10-15	60		10-15' As Above grading sandy
P27-SO-13	12.0-14.0	0.1	NO/NS			0920	
				15-20	60		15-20' Sat, gry, F-M SAND
P27-SO-16	15.0-17.0	0.0	NO/NS			0925	
				20-25	60		20-25' Sat, gry, FSAND. w/some silt
P27-SO-22	21.0-23.0	0.0	NO/NS			1130	
				25-30	60		25-30' Sat, gry, F SAND
				30-35	60	1135	30-35' As Above grading coarser
				35-40	60		35-40' Sat, gry, F-M SAND
P27-SO-42	41.0-43.0	0.0	NO/NS	40-45	60	1155	40-45' As above
				45-50	60		45-46' As above
							46-50' Sat, gry, F SAND, w/some silt, dense



(Bottom of Boring)

NOTE: The summary log is an interpretation based on samples, drill action and interpretation. Variations between what is shown and actual conditions should be anticipated.

Notes: Temporary Screen set @ 15-20' below ground surface consisting of 1/2" dia. SCH 40 PVC screen. Water sample collected using peristaltic pump through 1/4" diameter polyethylene tubing with intake @ 19' bgs. Sample taken: ICS-P27A-W-111114 @ 1030

Groundwater parameters:
Temperature - 12.0C
pH - 7.2
Conductivity - 10,060 uS/cm
Turbidity - 74.8 ntu

Temporary Screen set @ 45-50' below ground surface consisting of 1/2" dia. SCH 40 PVC screen. Water sample collected using peristaltic pump through 1/4" diameter polyethylene tubing with intake @ 49' bgs. Sample taken: ICS-P27B-W-111114 @ 1330

Groundwater parameters:
Temperature - 10.9C
pH - 7.2
Conductivity - 12,050 uS/cm
Turbidity - 372 ntu

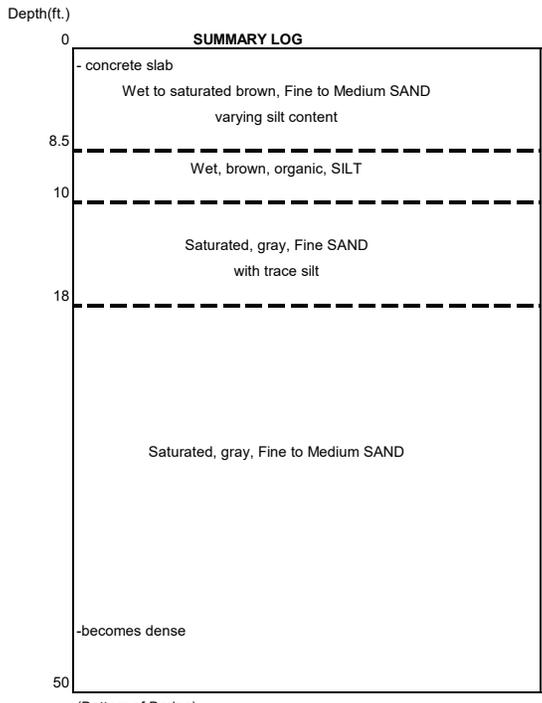
Completed boring backfilled with granular bentonite

Abbreviations:

gry = gray; bwn = brown; blk = black; mot = mottled
Sheen - NS= none, LS = Light, MS = Moderate, HS = Heavy
Odor - NO= None, SLO = Slight, MO = Moderate, STO = Strong
F = fine; M = medium
Sat = Pores saturated with water

BORING - DESCRIPTION OF SAMPLES & DATA

Field Rep: DG Cooper			Location: N200247 E1269824 NAD83/96				
Drilling Co.: Cascade			Elevation (Ft.):				
Driller: Kasey			Ground Surface: Concrete				
Drill Type: Geoprobe 6600			Date Completed: 12/15/14				
Size/Type Casing: 2"			Weather: Clear 45F				
			Hammer Type: Direct push				
			Sampler Type: 5' long x 2" dia. Macro retained in an acrylic sleeve				
Sample Number	Sample Interval (ft. bgs.)	PID Headspace (ppm)	Odor/Sheen	Spl Depth (Ft.) From - To	Spl length inches	Time	Sample Description
				0-5	50		4" concrete slab
							0.4-1.0' Damp, mot gry, gravelly, SAND, w/some silt
							1.5-3' Wet, gry, F SAND, w/some silt
P28-SO-4	3.0-5.0	10.1	SLO/NS			1230	3-5' Wet-sat, mot gry, F-M SAND
				5-10	60		5-8.5' Sat, gry, F SAND
P28-SO-7	6.0-8.0	8.4	NO/NS			1240	8.5-10' Wet, bwn, organic, SILT
P28-SO-10	8.5-10.0	2.3	NO/NS			1250	
				10-15	40		10-15' Sat, gry, F SAND, w/trace silt
P28-SO-13	12.5-13.5	3.1	NO/NS			1300	
				15-20	50		15-18' As Above
P28-SO-16	15.0-17.0	3.3	NO/NS			1310	18-20' Sat, gry, F-M SAND, scattered wood
				20-25	50		20-25' As Above
P28-SO-22	21.0-23.0	2.5	NO/NS			1320	
				25-30	50		25-30' As Above
				30-35	50	1430	30-35' As Above
				35-40	50		35-40' As Above, grading finer
P28-SO-42	41.0-43.0	0.5	NO/NS	40-45	50	1500	40-45' Sat, gry, F SAND, dense
P28-SO-50	49.0-50.0	0.4	NO/NS	45-50	40	1530	45-50' As Above



(Bottom of Boring)
NOTE: The summary log is an interpretation based on samples, drill action and interpretation. Variations between what is shown and actual conditions should be anticipated.

Notes: Temporary Screen set @ 25-30' below ground surface consisting of 1/2" dia. SCH 40 PVC screen.
Water sample collected using peristaltic pump through 1/4" diameter polyethylene tubing with intake @ 29' bgs.
Sample taken: ICS-P28-W-121514 @ 1400

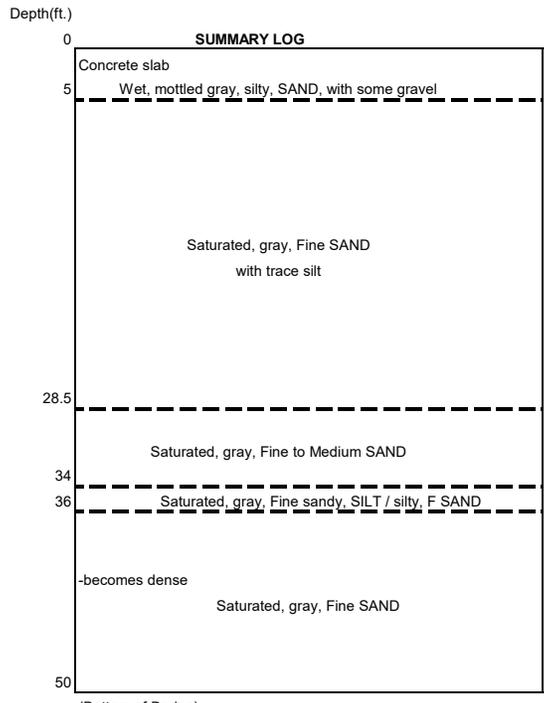
Groundwater parameters:
Temperature - 13.4C
pH - 6.8
Conductivity - 5,250 uS/cm
Turbidity - 229 ntu

Completed boring backfilled with granular bentonite and patched with concrete.

Abbreviations:
gry = gray; bwn = brown; blk = black; mot = mottled
Sheen - NS= none, LS = Light, MS = Moderate, HS = Heavy
Odor - NO= None, SLO = Slight, MO = Moderate, STO = Strong
F = fine; M = medium
Sat = Pores saturated with water

BORING - DESCRIPTION OF SAMPLES & DATA

Field Rep: DG Cooper				Location: N200265 E1269944 NAD 83/96			
Drilling Co.: Cascade				Elevation (Ft.): Ground Surface: Concrete			
Driller: Kasey				Date Completed: 12/10/14			
Drill Type: Geoprobe 6600				Weather: Rain 60F			
Size/Type Casing: 2"				Hammer Type: Direct push		Sampler Type: 5' long x 2" dia. Macro retained in an acrylic sleeve	
Sample Number	Sample Interval (ft. bgs.)	PID Headspace (ppm)	Odor/Sheen	Spl Depth (Ft.) From - To	Spl length inches	Time	Sample Description
				0-5	40		6" concrete slab
							0.4-1.0' Damp, mot gry, gravelly, SAND, w/some silt
P29-SO-4	3.0-4.0	16.5	MO/NS			0800	1-5' Wet, mot gry, silty, SAND, w/some gravel, wood
				5-10	60		5-9.5' Wet-sat, gry, F SAND, w/trace silt
P29-SO-7	6.0-8.0	49.3	MO/MS			0810	9.5-10' Wet, gry, F SAND
P29-SO-10	9.0-10.0	11.7	SLO/SS			0820	
				10-15	60		10-15' Wet, gry, F SAND, w/trace silt
P29-SO-13	12.0-14.0	11.2	SLO/SS			0830	odor and sheen to 14'
				15-20	60		15-20' sat, gry, F SAND, w/trace silt
P29-SO-16	15.0-17.0	15.5	SLO/SS			0840	
DUPL2						0845	
				20-25	60		20-25' As Above
P29-SO-22	21.0-23.0	5.2	NO/NS			0850	
				25-30	55		25-28.5' As Above
							28.5-30' Sat, gry, F-M SAND
P29-SO-32	31.0-33.0	5.3	NO/NS	30-35	55	0900	30-31' As above w/silt clasts
							31-34' Sat, gry, F SAND
							34-35' Sat, gry, silty, F SAND / F sandy, SILT
				35-40	60		35-36' As Above
							36-40' Sat, gry, F SAND
P29-SO-42	41.0-43.0	0.3	NO/NS	40-45	60	1045	40-45' Sat, gry, F SAND, w/silty sand interbeds, dense
P29-SO-50	49.0-50.0	0.6	NO/NS	45-50	60	1100	45-50' As Above



(Bottom of Boring)
NOTE: The summary log is an interpretation based on samples, drill action and interpretation. Variations between what is shown and actual conditions should be anticipated.

Notes: Temporary Screen set @ 29-34' below ground surface consisting of 1/2" dia. SCH 40 PVC screen. Water sample collected using peristaltic pump through 1/4" diameter polyethylene tubing with intake @ 33' bgs. Sample taken: ICS-P29-W-121014 @ 1000

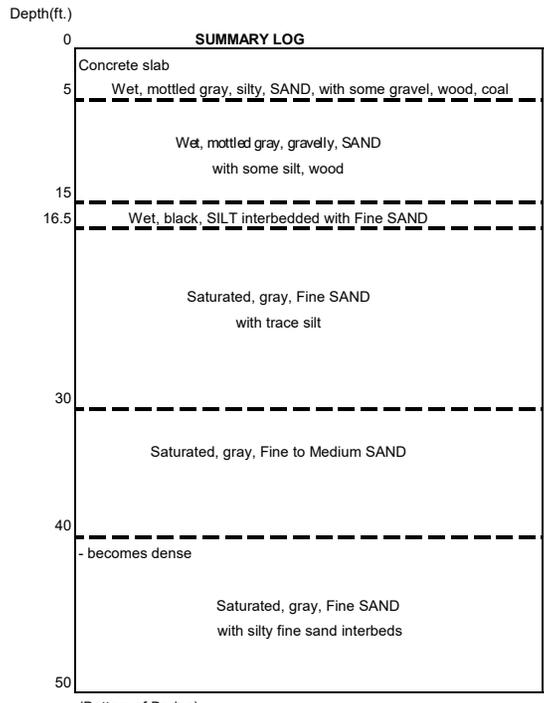
Groundwater parameters:
Temperature - 14.0C
pH - 6.8
Conductivity - 3,070 uS/cm
Turbidity - 401 ntu

Completed boring backfilled with granular bentonite and patched with concrete.

Abbreviations:
gry = gray; bwn = brown; blk = black; mot = mottled
Sheen - NS= none, LS = Light, MS = Moderate, HS = Heavy
Odor - NO= None, SLO = Slight, MO = Moderate, STO = Strong
F = fine; M = medium
Sat = Pores saturated with water

BORING - DESCRIPTION OF SAMPLES & DATA

Field Rep: DG Cooper			Location: N200295 E1270067 NAD 83/96				
Drilling Co.: Cascade			Elevation (Ft.): Ground Surface: Concrete				
Driller: Kasey			Date Completed: 12/09/14				
Drill Type: Geoprobe 6600			Weather: Rain 55F				
Size/Type Casing: 2"			Hammer Type: Direct push		Sampler Type: 5' long x 2" dia. Macro retained in an acrylic sleeve		
Sample Number	Sample Interval (ft. bgs.)	PID Headspace (ppm)	Odor/Sheen	Spl Depth (Ft.) From - To	Spl length inches	Time	Sample Description
				0-5	40		4" slab
							0.4-1.0' Damp, mot gry, gravelly, SAND, w/some silt
P30-SO-4	3.0-5.0	2.6	NO/NS			1150	
				5-10	60		5-7' Wet, blk, gravelly, SAND
P30-SO-7	6.0-7.0	18.5	SLO/NS			1200	7-10' Wet, mot gry, gravelly, SAND, w/some silt, wood
P30-SO-10	9.0-10.0	2.0	NO/NS			1210	
				10-15	30		10-15' As Above, loose/soft
P30-SO-13	12.5-13.5	15.5	SLO/NS			1220	
				15-20	60		15-15.5' Wet, blk, SILT
P30-SO-16	15.0-16.5	4.2	NO/NS			1230	15.5-16' Sat, gry-blk, F SAND
							16-16.5' Wet, blk, SILT
							16.5-20' Sat, gry, F SAND, w/trace silt, wood
				20-25	50		20-20.5' As Above
P30-SO-22	21.0-23.0	2.7	NO/NS			1240	20.5-21' Wood core
							21-25' Sat, gry, F SAND
				25-30	60		25-30' As Above
P30-SO-32	31.0-33.0	1.0	NO/NS	30-35	50	1430	30-35' Sat, gry, F-M SAND
				35-40	60		35-40' As Above
P30-SO-42	41.0-43.0	0.4	NO/NS	40-45	60	1445	40-45' Sat, gry, F SAND, w/silty zones, dense
P30-SO-50	49.0-50.0	0.4	NO/NS	45-50	50	1500	45-50' As Above, wood @ 48'



(Bottom of Boring)
NOTE: The summary log is an interpretation based on samples, drill action and interpretation. Variations between what is shown and actual conditions should be anticipated.

Notes: Temporary Screen set @ 25-30' below ground surface consisting of 1/2" dia. SCH 40 PVC screen. Water sample collected using peristaltic pump through 1/4" diameter polyethylene tubing with intake @ 29' bgs. Sample taken: ICS-P30-W-120914 @ 1400

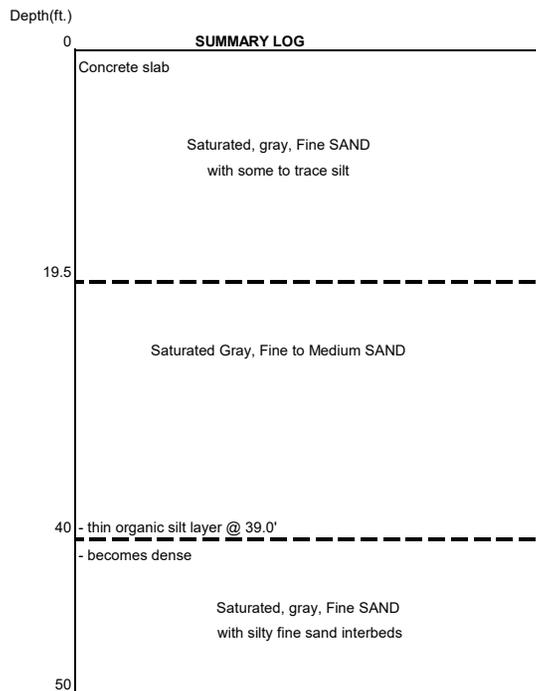
Groundwater parameters:
Temperature - 13.9C
pH - 7.4
Conductivity - 6,030 uS/cm
Turbidity - 182 ntu

Completed boring backfilled with granular bentonite and patched with concrete.

Abbreviations:
gry = gray; bwn = brown; blk = black; mot = mottled
Sheen - NS= none, LS = Light, MS = Moderate, HS = Heavy
Odor - NO= None, SLO = Slight, MO = Moderate, STO = Strong
F = fine; M = medium
Sat = Pores saturated with water

BORING - DESCRIPTION OF SAMPLES & DATA

Field Rep: DG Cooper			Location: N200244 E1270179 NAD 83/96				
Drilling Co.: Cascade			Elevation (Ft.): Ground Surface: Concrete				
Driller: Kasey			Date Completed: 12/09/14				
Drill Type: Geoprobe 6600			Weather: Rain 55F				
Size/Type Casing: 2"			Hammer Type: Direct push		Sampler Type: 5' long x 2" dia. Macro retained in an acrylic sleeve		
Sample Number	Sample Interval (ft. bgs.)	PID Headspace (ppm)	Odor/Sheen	Spl Depth (Ft.) From - To	Spl length inches	Time	Sample Description
				0-5	40	0750	4" slab
							0.4-1.0' Damp, mot gry, gravelly, SAND, w/some silt
P31-SO-4	3.0-4.0	0.1	NO/NS			0800	1.5-5' Wet, bwn, F SAND, w/some silt, thin roots
				5-10	60		5-8" As Above
P31-SO-7	6.0-8.0	0.2	NO/NS			0810	8-10' Sat, gry, F SAND, w/silty sand interbeds
P31-SO-10	9.0-11.0	0.2	NO/NS			0820	
				10-15	60		10-15' As Above
P31-SO-13	12.0-14.0	0.3	NS/NS			0830	
				15-20	60		15-19.5' As Above
P31-SO-16	15.0-17.0	0.3	NO/NS			0840	19.5-20' Sat, gry, F-M SAND
				20-25	50		20-25' As Above
P31-SO-22	21.0-23.0	0.3	NO/NS			0850	
				25-30	50		25-30' As Above
P31-SO-32	31.0-33.0	0.4	NO/NS	30-35	50	1020	30-35' As Above
				35-40	50		35-40' As above
							0.3' thick organic silt layer @ 39.0'
P31-SO-42	41.0-43.0	0.5	NO/NS	40-45	50	1030	40-45' Sat, gry, F SAND, w/silty F sand interbeds
P31-SO-50	49.0-50.0	0.5	NO/NS	45-50	50	1040	45-50' As above, dense



(Bottom of Boring)

NOTE: The summary log is an interpretation based on samples, drill action and interpretation. Variations between what is shown and actual conditions should be anticipated.

Notes: Temporary Screen set @ 25-30' below ground surface consisting of 1/2" dia. SCH 40 PVC screen. Water sample collected using peristaltic pump through 1/4" diameter polyethylene tubing with intake @ 29' bgs. Sample taken: ICS-P31-W-120914 @ 1000

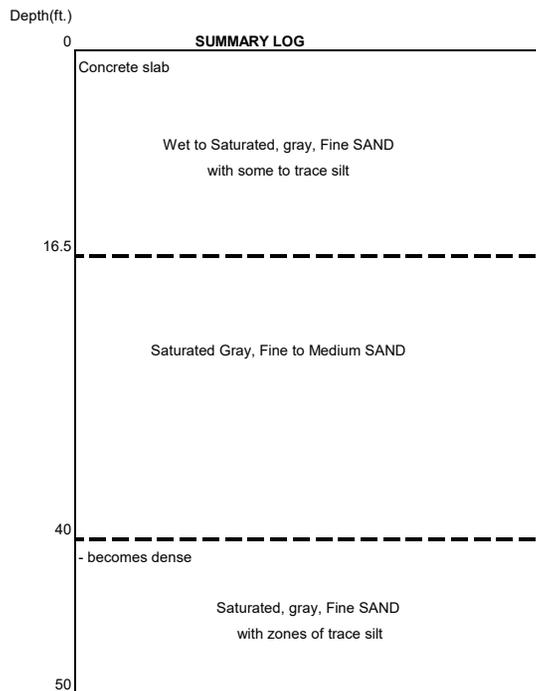
Groundwater parameters:
 Temperature - 13.4C
 pH - 6.9
 Conductivity - 4,010 uS/cm
 Turbidity - 65 ntu

Completed boring backfilled with granular bentonite and patched with concrete.

Abbreviations:
 gry = gray; bwn = brown; blk = black; mot = mottled
 Sheen - NS= none, LS = Light, MS = Moderate, HS = Heavy
 Odor - NO= None, SLO = Slight, MO = Moderate, STO = Strong
 F = fine; M = medium
 Sat = Pores saturated with water

BORING - DESCRIPTION OF SAMPLES & DATA

Field Rep: DG Cooper			Location: N200183 E1269973 NAD 83/96				
Drilling Co.: Cascade			Elevation (Ft.): Ground Surface: Concrete				
Driller: Kasey			Date Completed: 12/15/14				
Drill Type: Geoprobe 6600			Weather: Cloudy 45F				
Size/Type Casing: 2"			Hammer Type: Direct push		Sampler Type: 5' long x 2" dia. Macro retained in an acrylic sleeve		
Sample Number	Sample Interval (ft. bgs.)	PID Headspace (ppm)	Odor/Sheen	Spl Depth (Ft.) From - To	Spl length inches	Time	Sample Description
				0-5			0-10' interval originally sampled/logged
							0.4-1.0' Damp, mot gry, gravelly, SAND, w/some silt
				10-15	60		10-15' Wet-sat, gry, F SAND, w/trace silt
P32-SO-13	12.0-14.0	3.3	NO/NS			0800	
				15-20	60		15-16' As Above
P32-SO-16	16.0-17.5	5.6	NO/NS			0810	16-20' Sat, gry, F-M SAND
DUPL3	duplicate of above					0815	
				20-25	60		20-25' As Above
P32-SO-22	21.0-22.0	4.9	NO/NS			0820	
				25-30	55		25-30' As Above
P32-SO-32	31.0-33.0	5.5	NO/NS	30-35	55	0940	30-34' As Above
							34-35' Sat, gry, F SAND, w/zones of trace silt
				35-40	55		35-40' As Above, dense
P32-SO-42	41.0-43.0	8.3	NO/NS	40-45	55	1050	40-45' Sat, gry, F SAND
P32-SO-50	49.0-50.0	3.1	NO/NS	45-50	55	1100	45-50' Sat, gry, F SAND, w/zones of trace silt



(Bottom of Boring)

NOTE: The summary log is an interpretation based on samples, drill action and interpretation. Variations between what is shown and actual conditions should be anticipated.

Notes: Temporary Screen set @ 25-30' below ground surface consisting of 1/2" dia. SCH 40 PVC screen.

Water sample collected using peristaltic pump through 1/4" diameter polyethylene tubing with intake @ 29' bgs. Sample taken: ICS-P32-W-A-121514 @ 0930

Groundwater parameters:

Temperature - 12.2C
pH - 6.6
Conductivity - 2,560 uS/cm
Turbidity - 312 ntu

Temporary Screen set @ 35-40' below ground surface consisting of 1/2" dia. SCH 40 PVC screen.

Water sample collected using peristaltic pump through 1/4" diameter polyethylene tubing with intake @ 39' bgs. Sample taken: ICS-P32-W-B-121514 @ 1030

Groundwater parameters:

Temperature - 12.6C
pH - 6.8
Conductivity - 4,590 uS/cm
Turbidity - 183 ntu

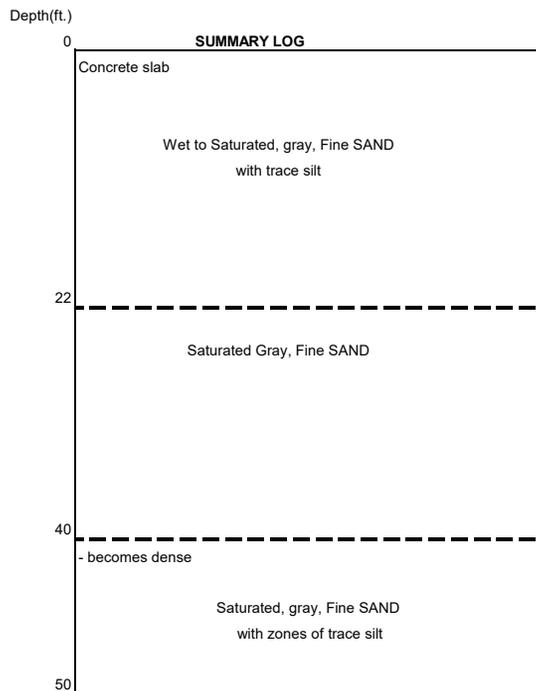
Completed boring backfilled with granular bentonite and patched with asphalt concrete.

Abbreviations:

gry = gray; bwn = brown; blk = black; mot = mottled
Sheen - NS= none, LS = Light, MS = Moderate, HS = Heavy
Odor - NO= None, SLO = Slight, MO = Moderate, STO = Strong
F = fine; M = medium
Sat = Pores saturated with water

BORING - DESCRIPTION OF SAMPLES & DATA

Field Rep: DG Cooper			Location: N199983 E1270159 NAD 83/96				
Drilling Co.: Cascade			Elevation (Ft.): Ground Surface: Gravel				
Driller: Kasey			Date Completed: 12/08/14				
Drill Type: Geoprobe 6600			Weather: Cloudy 45F				
Size/Type Casing: 2"			Hammer Type: Direct push		Sampler Type: 5' long x 2" dia. Macro retained in an acrylic sleeve		
Sample Number	Sample Interval (ft. bgs.)	PID Headspace (ppm)	Odor/Sheen	Spl Depth (Ft.) From - To	Spl length inches	Time	Sample Description
				0-5			0-10' interval originally sampled/logged
							0.4-1.0' Damp, mot gry, gravelly, SAND, w/some silt
				10-15	50		10-15' Sat, gry, F SAND, w/trace silt
P33-SO-13	12.0-14.0	0.1	NO/NS			0810	
				15-20	45		15-20' As Above
P33-SO-16	15.0-17.0	0.6	NO/NS			0820	
				20-25	60		20-22' As Above
P33-SO-22	21.0-23.0	0.4	NO/NS			0830	22-25' Sat, gry, F SAND
				25-30	55		25-30' As Above
P33-SO-32	31.0-33.0	0.4	NO/NS	30-35	55	0950	30-35' As Above
				35-40	50		35-40' As Above
P33-SO-42	41.0-43.0	0.3	NO/NS	40-45	50	1100	40-45' Sat, gry, F SAND, w/trace silt, sand interbeds, dense
P33-SO-50	49.0-50.0	0.3	NO/NS	45-50	50	1110	45-50' As Above



(Bottom of Boring)

NOTE: The summary log is an interpretation based on samples, drill action and interpretation. Variations between what is shown and actual conditions should be anticipated.

Notes: Temporary Screen set @ 26-30' below ground surface consisting of SS hydropunch screen.

Water sample collected using peristaltic pump through 1/4" diameter polyethylene tubing with intake @ 29' bgs. Sample taken: ICS-P33-W-A-120814 @ 0900

Groundwater parameters:

Temperature - 12.1C
pH - 6.7
Conductivity - 710 uS/cm
Turbidity - 586 ntu

Temporary Screen set @ 36-40' below ground surface consisting of SS Hydropunch screen.

Water sample collected using peristaltic pump through 1/4" diameter polyethylene tubing with intake @ 39' bgs. Sample taken: ICS-P33-W-B-120814 @ 1030"

Groundwater parameters:

Temperature - 12.6C
pH - 7.2
Conductivity - 2,150 uS/cm
Turbidity - 440 ntu

* only for samples chloride/sulfate - very low yield

Completed boring backfilled with granular bentonite

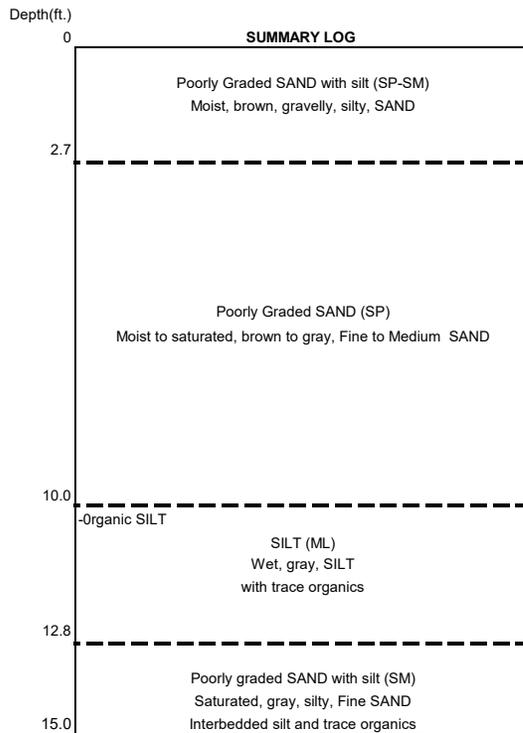
Abbreviations:

gry = gray; bwn = brown; blk = black; mot = mottled
Sheen - NS= none, LS = Light, MS = Moderate, HS = Heavy
Odor - NO= None, SLO = Slight, MO = Moderate, STO = Strong
F = fine; M = medium
Sat = Pores saturated with water

PP1

BORING - DESCRIPTION OF SAMPLES & DATA

Field Rep: DG Cooper				Location: N200332 E1269701 (NAD83)				
Drilling Co.: Cascade				Elevation (Ft.):		Ground Surface: Soil		
Driller: Portz				Date Completed: 11/05/20				
Drill Type: Geoprobe 6600				Weather: Rain 60F				
Size/Type Casing: 2" Rod				Hammer Type: Direct push		Sampler Type: 1.5" dia. X 60" Macro-core w/ acrylic liner		
Soil Sample No.	Sample Interval	PID (ppm)	Depth (Ft.)	Odor/Sheen	Spl Depth (Ft.) From - To	Spl length inches	Time	Sample Description
					0-5	54		0-0.2' Sandy Soil with leaf duff
PP1-2.5	2.5-3.5'	0.1	1	NO/NS			1245	0.2-1.1' Moist, brown, silty, F-M SAND
		0.1	2.5	NO/NS				1.1-2.7' Moist, brown, gravelly, silty, SAND
								2.7-4.5' Moist, mot. brown, silty, F-M SAND, with oxidation
					5-10	50		5.0-7.8' Moist, brown, F-M SAND, with silt nodules
PP1-5	5-6'	0.1	5	NO/NS			1250	8.8-9.2' Wet, gray, F-M SAND, with white flecs
PP1-7.5	7.5-8.5'	0.1	6	NO/NS			1255	
		0	7					
					10-15	50		10-11.2' Wet, brown, organic, SILT
PP1-10	10-11'	0.1	10	NO/NS			1300	11.2-12.8' Wet, gray, SILT, with trace organics
PP1-12.5	12-13'	0.1	12	NO/NS			1305	12.8-14.2' Sat, gray, silty, F SAND, with interbedded silt, organics
		0.2	14	NO/NS				
NOTE: Saturated @ 9.0'								
Completed boring backfilled with granular bentonite								



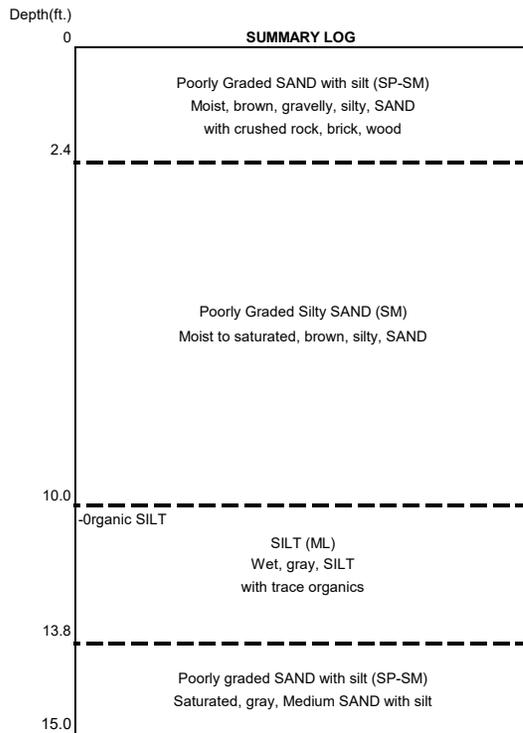
(Bottom of Boring)
NOTE: The summary log is an interpretation based on samples, drill action and interpolation.
Variations between what is shown and actual conditions should be anticipated.

- Abbreviations:** F - fine
M - medium
Sat. - saturated
Mot. - mottled
NS - No sheen
LS - Light sheen
MS - Medium sheen
HS - Heavy sheen
NO - No odor
SLO - Slight odor
MO - Moderate odor
SO - Strong odor

PP2

BORING - DESCRIPTION OF SAMPLES & DATA

Field Rep: DG Cooper				Location: N200334 E1269732 (NAD83)				
Drilling Co.: Cascade				Elevation (Ft.):		Ground Surface: Soil		
Driller: Portz				Date Completed: 11/05/20				
Drill Type: Geoprobe 6600				Weather: Rain 60F				
Size/Type Casing: 2" Rod				Hammer Type: Direct push		Sampler Type: 1.5" dia. X 60" Macro-core w/ acrylic liner		
Soil Sample No.	Sample Interval	PID (ppm)	Depth (Ft.)	Odor/Sheen	Spl Depth (Ft.) From - To	Spl length inches	Time	Sample Description
					0-5	40		0-0.4' Sandy Soil with leaf duff
PP2-2.5	1-3'	0.2	1	NO/NS			1130	0.4-1.7' Moist, brown, silty, SAND with gravel
		0.2	2.5	NO/NS				1.7-2.4' Crushed gravel, wood, red brick
								2.4-3.3' Wet, brown, silty, SAND
								dense white waxy material at base
					5-10	36		5.0-7.6' Moist, brown, silty SAND, oxidized
PP2-5	5-6'	0.2	5	NO/NS			1135	7.6-8.0' Wet, brown silty, SAND, with fine roots
PP2-7.5	6.5-7.5'	0.3	6	NO/NS			1140	
		0.3	7					
					10-15	48		10-11.2' Wet, brown, organic, SILT
PP2-10	10-11'	0.2	10	NO/NS			1145	11.2-13.8' Wet, gray, SILT, with trace organics
PP2-12.5	12-13'	0.3	12	NO/NS			1150	13.8-14.2' Sat, gray, M SAND, with silt
		0.2	14	NO/NS				
NOTE: Saturated @ 6.0'								
Completed boring backfilled with granular bentonite								



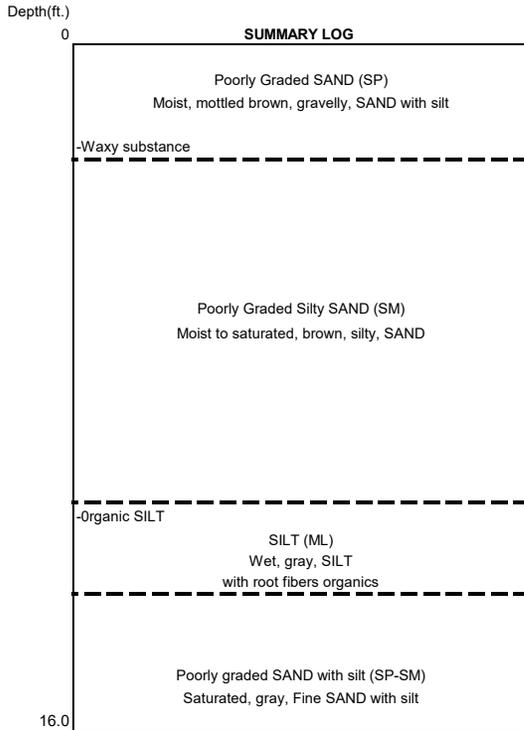
(Bottom of Boring)
NOTE: The summary log is an interpretation based on samples, drill action and interpolation.
Variations between what is shown and actual conditions should be anticipated.

- Abbreviations:** F - fine
M - medium
Sat. - saturated
Mot. - mottled
NS - No sheen
LS - Light sheen
MS - Medium sheen
HS - Heavy sheen
NO - No odor
SLO - Slight odor
MO - Moderate odor
SO - Strong odor

PP3

BORING - DESCRIPTION OF SAMPLES & DATA

Field Rep: DG Cooper				Location: N200325 E1269763 (NAD83)				
Drilling Co.: Cascade				Elevation (Ft.):		Ground Surface: Gravel		
Driller: Portz				Date Completed: 11/04/20				
Drill Type: Geoprobe 7822DT				Weather: Rain 60F				
Size/Type Casing: 1" Rod				Hammer Type: Direct push		Sampler Type: 1.5" dia. X 48" Macro-core w/ acrylic liner		
Soil Sample No.	Sample Interval	PID (ppm)	Depth (Ft.)	Odor/Sheen	Spl Depth (Ft.) From - To	Spl length inches	Time	Sample Description
					0-5	36		0-2.0' Moist, mot brown, gravelly, SAND with some silt
PP3-2	1-2'	1.0	1	NO/NS			1440	2.0-2.5' Very stiff, orange-white, WAX-Like
PP3-2.5	2-2.5'	1.0	2	NO/NS			1445	2.5-3.0' Moist, gray, silty, SAND
					5-10	60		5.0-9.5' Wet to sat, F SAND, with silty sand interbeds
PP3-5	5-6'	1.5	5	NO/NS			1450	9.5-10.0' Wet, brown SILT, with trace sand, organics
PP3-7.5	7-8'	0.8	7	NO/NS			1455	
					10-15	36		10-10.6' Wet, brown, organic, SILT
PP3-10	10-11'	1.1	10	NO/NS			1500	10.6-11.5' Wet, gray, SILT, with root fibers
PP3-12.5	12-13'	1.1	12	NO/NS			1555	11.5-13.0' Sat, gray, F SAND, with some silt, roots
NOTE: Saturated @ 6.0'								
Completed boring backfilled with granular bentonite								



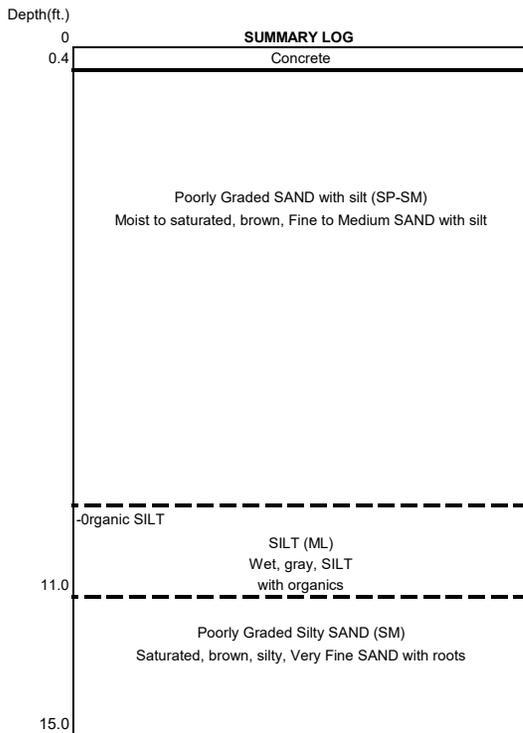
(Bottom of Boring)
NOTE: The summary log is an interpretation based on samples, drill action and interpolation.
Variations between what is shown and actual conditions should be anticipated.

- Abbreviations:** F - fine
M - medium
Sat. - saturated
Mot. - mottled
NS - No sheen
LS - Light sheen
MS - Medium sheen
HS - Heavy sheen
NO - No odor
SLO - Slight odor
MO - Moderate odor
SO - Strong odor

PP4

BORING - DESCRIPTION OF SAMPLES & DATA

Field Rep: DG Cooper				Location: N200266 E1269796 (NAD83)				
Drilling Co.: Cascade				Elevation (Ft.):		Ground Surface: Concrete Slab		
Driller: Tim				Date Completed: 10/30/20				
Drill Type: Geoprobe 7822DT				Weather: Clear 60F				
Size/Type Casing: 1.5" Rod				Hammer Type: Direct push		Sampler Type: 1.5" dia. X 60" Macro-core w/ acrylic liner		
Soil Sample No.	Sample Interval	PID (ppm)	Depth (Ft.)	Odor/Sheen	Spl Depth (Ft.) From - To	Spl length inches	Time	Sample Description
					0-5	48		0-0.4' Concrete
		0.7	1	NO/NS				0.4-2.6' Moist, brown, F-M SAND
PP4-2.5	2-3'	0.3	2	NO/NS			1425	2.6-4.0' Wet, gray, silty F SAND
					5-10	60		5.0-6.2' Wet, gray, silty, F SAND
PP4-5	5-6'	0.8	5	NO/NS			1430	6.2-8.2' Sat, dark gray, F-M SAND
PP4-7.5	7-8'	0.9	7	NO/NS			1435	8.2-10.0' Wet, brown, SILT, with some organics, peat grading gray, less organics @ 9.5'
					10-15	60		10.0-11.0' Wet, gray, SILT with trace fine sand
PP4-10	10-11'	0.3	10	NO/NS			1440	11.0-15.0' Sat, brown, silty, very fine SAND, roots
PP4-12.5	12-13'	0.4	12	NO/NS			1445	
PP4-15	14-15'	0.2	14				1450	
								NOTE: Saturated @ 5.0'
								Completed boring backfilled with granular bentonite



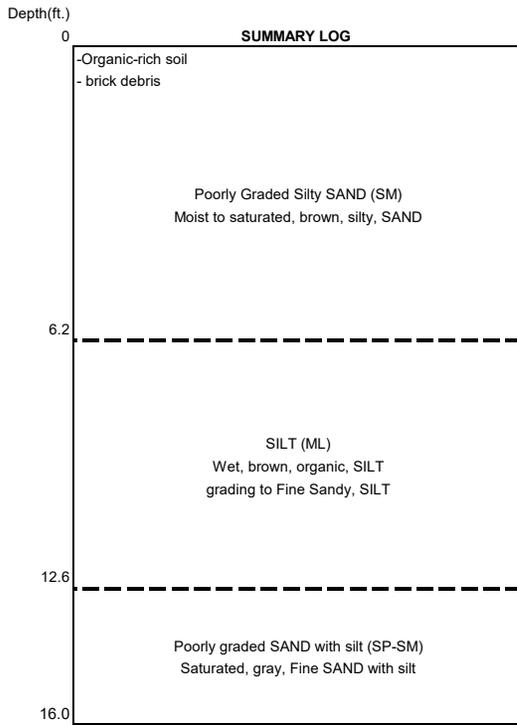
(Bottom of Boring)
NOTE: The summary log is an interpretation based on samples, drill action and interpolation.
Variations between what is shown and actual conditions should be anticipated.

- Abbreviations:** F - fine
M - medium
Sat. - saturated
Mot. - mottled
NS - No sheen
LS - Light sheen
MS - Medium sheen
HS-Heavy sheen
NO - No odor
SLO - Slight odor
MO - Moderate odor
SO - Strong odor

BORING - DESCRIPTION OF SAMPLES & DATA

PP5

Field Rep: DG Cooper				Location: N200289 E1269788 (NAD83)				
Drilling Co.: Cascade				Elevation (Ft.):		Ground Surface: Gravel		
Driller: Portz				Date Completed: 11/05/20				
Drill Type: Geoprobe LT54				Weather: Cloudy 60F				
Size/Type Casing: 1" Rod				Hammer Type: Direct push		Sampler Type: 1.5" dia. X 48" Macro-core w/ acrylic liner		
Soil Sample No.	Sample Interval	PID (ppm)	Depth (Ft.)	Odor/Sheen	Spl Depth (Ft.) From - To	Spl length inches	Time	Sample Description
		0.4	1	NO/NS	0-4	29		0-0.5 Organic rich soil
PP5-2	1.5-2.5'	0.4	2	NO/NS			1000	0.5-1.4' Wet, brown, silty SAND, with organics, brick debris
					4-8	38		4.0-6.2' Wet, brown, silty, SAND
PP5-4	4-5'	0.3	4	NO/NS			1005	6.2-7.2' Wet, brown, organic, SILT
		0.8	6	NO/NS				
					8-12	33		8.0-8.5' Wet, brown, organic, SILT
PP5-8	8-9'	0.5	8	NO/NS			1010	8.5-10.8' Wet, brown, F sandy, SILT, trace organics
		0.4	10	NO/NS				
					12-16	29		12-12.6 Wet, brown-gray, F sandy, SILT
PP5-12	12-13'	0.3	12	NO/NS			1015	12.6-14.5' Sat, gray, silty, F-M SAND
		0.4	14	NO/NS				
NOTE: Saturated @ 6.0'								
Completed boring backfilled with granular bentonite								



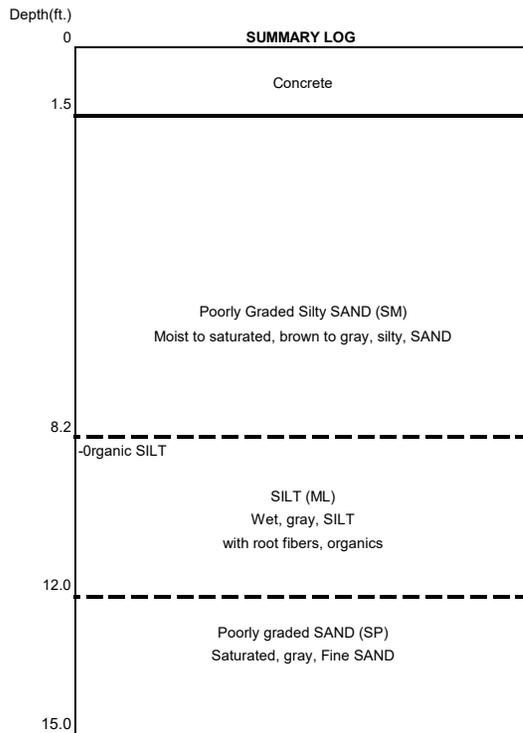
(Bottom of Boring)
NOTE: The summary log is an interpretation based on samples, drill action and interpolation.
Variations between what is shown and actual conditions should be anticipated.

- Abbreviations:** F - fine
M - medium
Sat. - saturated
Mot. - mottled
NS - No sheen
LS - Light sheen
MS - Medium sheen
HS - Heavy sheen
NO - No odor
SLO - Slight odor
MO - Moderate odor
SO - Strong odor

BORING - DESCRIPTION OF SAMPLES & DATA

PP7

Field Rep: DG Cooper				Location: N200243 E1269800 (NAD83)				
Drilling Co.: Cascade				Elevation (Ft.):		Ground Surface: Concrete Slab		
Driller: Portz				Date Completed: 11/04/20				
Drill Type: Geoprobe 7822DT				Weather: Rain 60F				
Size/Type Casing: 1.5" Rod				Hammer Type: Direct push		Sampler Type: 1.5" dia. X 60" Macro-core w/ acrylic liner		
Soil Sample No.	Sample Interval	PID (ppm)	Depth (Ft.)	Odor/Sheen	Spl Depth (Ft.) From - To	Spl length inches	Time	Sample Description
					0-5	54		0-1.5' Concrete
								1.5-3.1' Moist, brown, F-M SAND
PP7-2.5	2-3'	0.9	2	NO/NS			1330	3.1-4.5' Wet, gray, silty, F SAND
		1.8	3	NO/NS				
					5-10	54		5.0-8.2' Sat, gray, F SAND, with silty interbeds
PP7-5	5-6'	1.2	5	NO/NS			1335	8.2-9.5' Wet, brown-gray, organic SILT, with peat
PP7-7.5	7-8'	1.2	7	NO/NS			1340	
					10-15	48		10.0-12.0' Wet, gray, SILT, with trace F sand, grass, roots
PP7-10	10-11'	1.0	10	NO/NS			1345	12.0-14.0' Sat, gray, F SAND
PP7-12.5	12-13'	0.9	12	NO/NS			1350	
PP7-14	13-14'	0.9	14	NO/NS			1355	
NOTE: Saturated @ 5.0'								
Completed boring backfilled with granular bentonite								



(Bottom of Boring)
NOTE: The summary log is an interpretation based on samples, drill action and interpolation.
Variations between what is shown and actual conditions should be anticipated.

- Abbreviations:** F - fine
M - medium
Sat. - saturated
Mot. - mottled
NS - No sheen
LS - Light sheen
MS - Medium sheen
HS - Heavy sheen
NO - No odor
SLO - Slight odor
MO - Moderate odor
SO - Strong odor

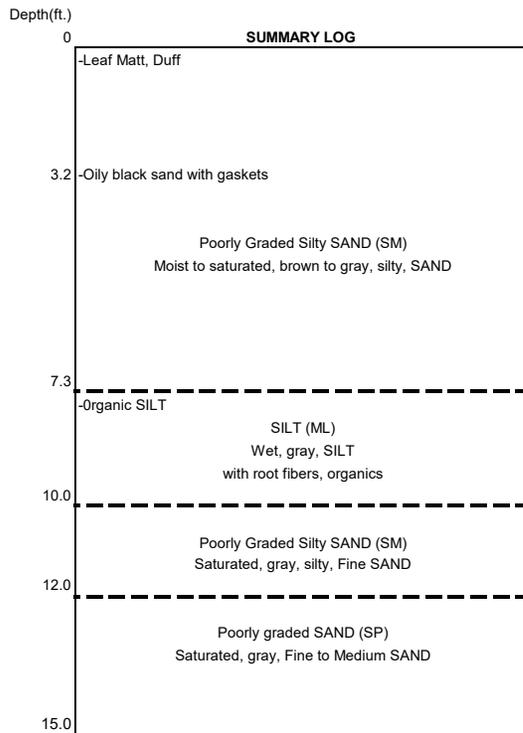
PP8

BORING - DESCRIPTION OF SAMPLES & DATA

Field Rep: DG Cooper			Location: N200303 E1269824 (NAD83)					
Drilling Co.: Cascade			Elevation (Ft.):		Ground Surface: Blackberry, duff			
Driller: Tim			Date Completed: 10/30/20					
Drill Type: Geoprobe 7822DT			Weather: Rain 55F					
Size/Type Casing: 1.5" Rod			Hammer Type: Direct push		Sampler Type: 1.5" dia. X 60" Macro-core w/ acrylic liner			
Soil Sample No.	Sample Interval	PID (ppm)	Depth (Ft.)	Odor/Sheen	Spl Depth (Ft.) From - To	Spl length inches	Time	Sample Description
		0.0	1	NO/NS	0-5	42		0-0.4' Duff, leaf mat
		0.0	2	NO/NS			0845	0.4-2.0' Moist, brown, silty, SAND, with some gravel
PP8-2.5	2.5-3.5'	0.2	3	SLO/NS				2.0-3.2' Moist, brown, silty, SAND, oxidized nodules, wood
								3.2-3.5' Wet, black, silty, SAND, with gaskets, oily odor
					5-10	60		5.0-5.5' Sat, gray, silty, F SAND
PP8-5	5.5-6.5'	0.5	5	NO/NS			0850	5.5-7.3' Sat, dark gray, F SAND
PP8-7.5	7.3-8.3'	0.7	7	NO/NS			0855	7.3-9.0' Wet, brown, orgainc, SILT, peat
								9.0-10.0' Wet, gray, SILT, w/scattered organics
					10-15	60		10.0-12.0' Wet, gray, very silty, very fine SAND, with orgaincs
PP8-10	10-11'	0.5	10	NO/NS			0900	12.0-15.0' Sat, gray, F-M SAND
PP8-12.5	12-13'	0.6	12	NO/NS			0905	
PP8-15	14-15'	0.1	14	NO/NS			0910	

NOTE: Saturated @ 5.0'

Completed boring backfilled with granular bentonite



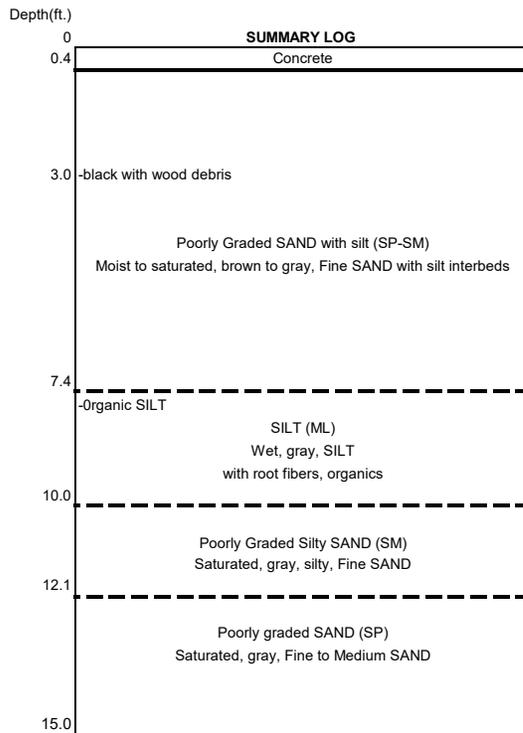
NOTE: The summary log is an interpretation based on samples, drill action and interpolation. Variations between what is shown and actual conditions should be anticipated.

- Abbreviations:** F - fine
M - medium
Sat. - saturated
Mot. - mottled
NS - No sheen
LS - Light sheen
MS - Medium sheen
HS - Heavy sheen
NO - No odor
SLO - Slight odor
MO - Moderate odor
SO - Strong odor

PP9

BORING - DESCRIPTION OF SAMPLES & DATA

Field Rep: DG Cooper				Location: N200265 E1269819 (NAD83)				
Drilling Co.: Cascade				Elevation (Ft.):		Ground Surface: Concrete Slab		
Driller: Tim				Date Completed: 10/30/20				
Drill Type: Geoprobe 7822DT				Weather: Clear 60F				
Size/Type Casing: 1.5" Rod				Hammer Type: Direct push		Sampler Type: 1.5" dia. X 60" Macro-core w/ acrylic liner		
Soil Sample No.	Sample Interval	PID (ppm)	Depth (Ft.)	Odor/Sheen	Spl Depth (Ft.) From - To	Spl length inches	Time	Sample Description
					0-5	42		0-0.4' Concrete
		1.0	1	NO/NS				0.4-2.0' Moist, gray, F-M SAND
PP9-2.5	2-3'	2.0	2	NO/NS			1330	2.0-3.0' Wet, brown, F SAND, with some silt
		2.8	3	NO/NS				3.0-3.5' Becomes black, saturated, with wood debris
					5-10	54		5.0-7.4' Sat, gray, F SAND, with silty interbed @ 6.6'
PP9-5	5-6'	2.2	5	NO/NS			1335	7.4-8.6' Wet, brown, organic SILT, with peat
PP9-7.5	7-8'	1.5	7	NO/NS			1340	8.6-9.5' Wet, gray, SILT, with scattered roots
					10-15	60		10.0-11.0' Wet, gray, SILT, grading sandy
PP9-10	10-11'	1.4	10	NO/NS			1345	11.0'-12.1' Sat, brown, silty, F SAND, thin roots
PP9-12.5	12-13'	1.7	12	NO/NS			1350	12.1-15.0' Sat, dark gray, F SAND grading to medium
PP9-15	14-15'	1.5	14	NO/NS			1355	
NOTE: Saturated @ 3.0'								
Completed boring backfilled with granular bentonite								



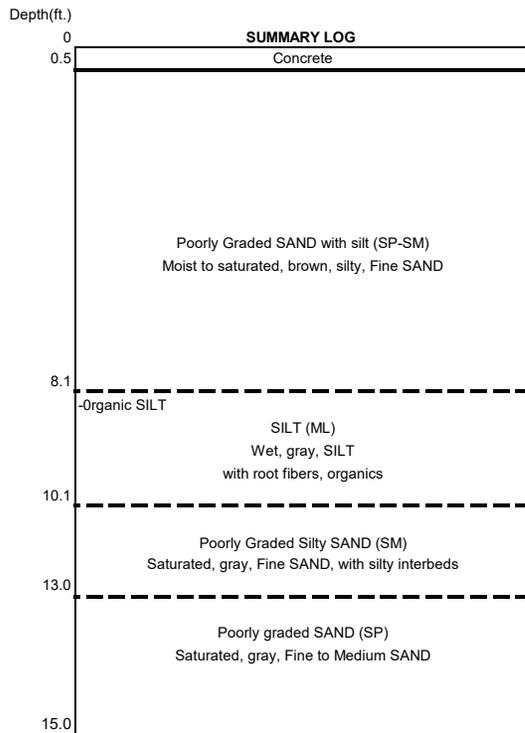
(Bottom of Boring)
NOTE: The summary log is an interpretation based on samples, drill action and interpolation.
Variations between what is shown and actual conditions should be anticipated.

- Abbreviations:** F - fine
M - medium
Sat. - saturated
Mot. - mottled
NS - No sheen
LS - Light sheen
MS - Medium sheen
HS-Heavy sheen
NO - No odor
SLO - Slight odor
MO - Moderate odor
SO - Strong odor

PP10

BORING - DESCRIPTION OF SAMPLES & DATA

Field Rep: DG Cooper				Location: N200221 E1269829 (NAD83)				
Drilling Co.: Cascade				Elevation (Ft.):		Ground Surface: Concrete Slab		
Driller: Tim				Date Completed: 10/30/20				
Drill Type: Geoprobe 7822DT				Weather: Clear 60F				
Size/Type Casing: 1.5" Rod				Hammer Type: Direct push		Sampler Type: 1.5" dia. X 60" Macro-core w/ acrylic liner		
Soil Sample No.	Sample Interval	PID (ppm)	Depth (Ft.)	Odor/Sheen	Spl Depth (Ft.) From - To	Spl length inches	Time	Sample Description
					0-5	42		0-0.5' Concrete
		6.6	1	NO/NS				0.5-2.2' Moist, gray, F-M SAND
PP10-2.5	2-3'	100.3	2	SO/LS			1235	2.0-3.5' Wet, brown, silty, F SAND
					5-10	55		5.0-8.1' Sat, brown, silty, F SAND
PP10-5	5-6'	1.8	5	NO/NS			1240	8.1-9.0' Wet, brown, organic SILT, with peat
PP10-7.5	7-8'	2.0	7	NO/NS			1245	9.0-9.6' Wet, gray, SILT, with scattered roots
					10-15	60		10.0-10.1' Wet, gray, SILT
PP10-10	10-11'	1.1	10	NO/NS			1250	10.1'-13.0' Sat, gray, F SAND, with silt interbeds, trace organics
PP10-12.5	12-13'	1.0	12	NO/NS			1255	13.0-15.0' Sat, dark gray, F SAND
PP10-15	14-15'	1.0	14	NO/NS			1300	
NOTE: Saturated @ 5.0'								
Completed boring backfilled with granular bentonite								



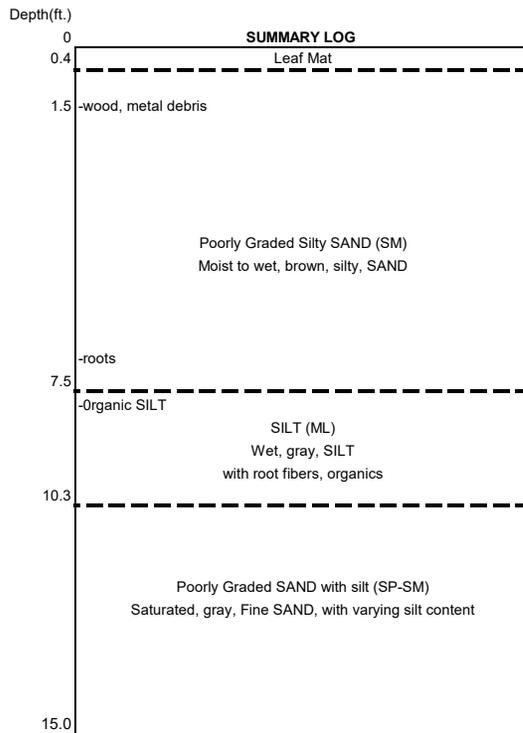
(Bottom of Boring)
NOTE: The summary log is an interpretation based on samples, drill action and interpolation.
Variations between what is shown and actual conditions should be anticipated.

- Abbreviations:** F - fine
M - medium
Sat. - saturated
Mot. - mottled
NS - No sheen
LS - Light sheen
MS - Medium sheen
HS-Heavy sheen
NO - No odor
SLO - Slight odor
MO - Moderate odor
SO - Strong odor

PP11

BORING - DESCRIPTION OF SAMPLES & DATA

Field Rep: DG Cooper				Location: N200285 E1269857 (NAD83)				
Drilling Co.: Cascade				Elevation (Ft.):		Ground Surface: Blackberry, Leaf mat		
Driller: Tim				Date Completed: 10/30/20				
Drill Type: Geoprobe 7822DT				Weather: Cloudy 55F				
Size/Type Casing: 1.5" Rod				Hammer Type: Direct push		Sampler Type: 1.5" dia. X 60" Macro-core w/ acrylic liner		
Soil Sample No.	Sample Interval	PID (ppm)	Depth (Ft.)	Odor/Sheen	Spl Depth (Ft.) From - To	Spl length inches	Time	Sample Description
					0-5	42		0-0.4' Blackberry, leaf mat
		0.1	1	NO/NS				0.4-1.5' Moist, brown, silty, gravelly, SAND, with metal, wood debris
PP11-2.5	2-3'	0.1	2	NO/NS			0935	1.5-3.5' Moist, mot brown, silty, SAND
					5-10	54		5.0-7.5' Wet, brown, silty, F SAND, fine roots @ 7'
PP11-5	5-6'	0.6	5	NO/NS			0940	7.5-8.5' Wet, brown, organic SILT
PP11-7.5	6.5-7.5	0.9	7	SLO/NS			0945	8.5-9.5' Wet, gray, SILT, with scattered roots
					10-15	60		10.0-10.3' Wet, gray, SILT
PP11-10	10.3-11.3	0.4	10	NO/NS			0950	10.3'-11.3' Sat, gray, silty, F SAND,
PP11-12.5	12-13'	0.4	12	NO/NS			0955	11.3-12.1' Sat, dark gray, F-M SAND
PP11-15	14-15'	0.3	14	NO/NS			1000	12.1-15.0' Sat, gray, silty, F SAND
NOTE:								Completed boring backfilled with granular bentonite



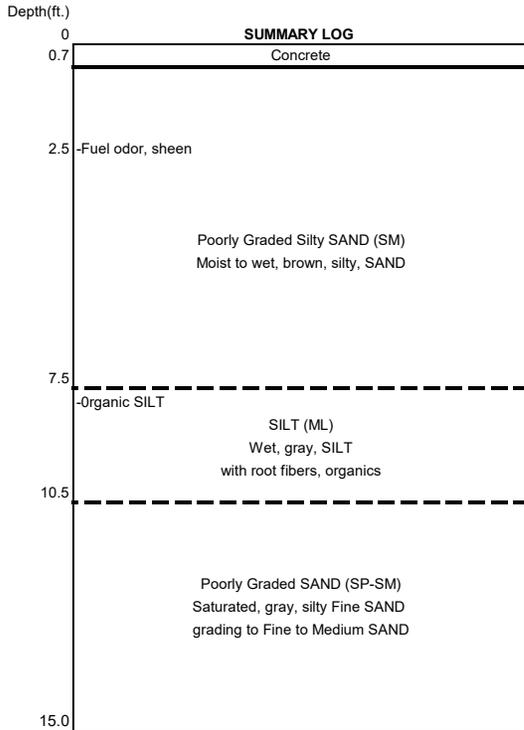
(Bottom of Boring)
NOTE: The summary log is an interpretation based on samples, drill action and interpolation.
Variations between what is shown and actual conditions should be anticipated.

- Abbreviations:** F - fine
M - medium
Sat. - saturated
Mot. - mottled
NS - No sheen
LS - Light sheen
MS - Medium sheen
HS-Heavy sheen
NO - No odor
SLO - Slight odor
MO - Moderate odor
SO - Strong odor

PP12

BORING - DESCRIPTION OF SAMPLES & DATA

Field Rep: DG Cooper				Location: N200260 E1269843 (NAD83)				
Drilling Co.: Cascade				Elevation (Ft.):		Ground Surface: Concrete Slab		
Driller: Tim				Date Completed: 10/30/20				
Drill Type: Geoprobe 7822DT				Weather: Cloudy 55F				
Size/Type Casing: 1.5" Rod				Hammer Type: Direct push		Sampler Type: 1.5" dia. X 60" Macro-core w/ acrylic liner		
Soil Sample No.	Sample Interval	PID (ppm)	Depth (Ft.)	Odor/Sheen	Spl Depth (Ft.) From - To	Spl length inches	Time	Sample Description
					0-5	42		0-0.7' Concrete
		2.1	1	NO/NS				0.7-2.0' Moist, brown, silty, SAND, with some gravel
PP12-2.5	2.5-3.5'	2.5	2	SLO/MS			1050	2.0-3.5' Wet to sat, gray, F SAND, with some silt
								Strong fuel odor, sheen
		42	5	SO/MS	5-10	60		5.0-7.5' Sat, gray, F SAND, with trace silt
PP12-5	5-6'	1.2	6	SLO/NS			1055	7.5-8.9' Wet, brown, organic SILT, peat
PP12-7.5	6.5-7.5	1.0	7	SLO/NS			1100	8.9-10.0' Wet, gray, SILT, with scattered thin roots
					10-15	60		10.0-10.5' Wet, gray, SILT
PP12-10	10-11'	0.3	10	NO/NS			1105	10.5'-12.0' Sat, gray, silty, F SAND
PP12-12.5	12-13'	0.3	12	NO/NS			1110	12.0-15.0' Sat, dark gray, F SAND grading to F-M SAND
PP12-15	14-15'	0.4	14	NO/NS			1115	
NOTE: Saturated @ 2.8'								
Completed boring backfilled with granular bentonite								



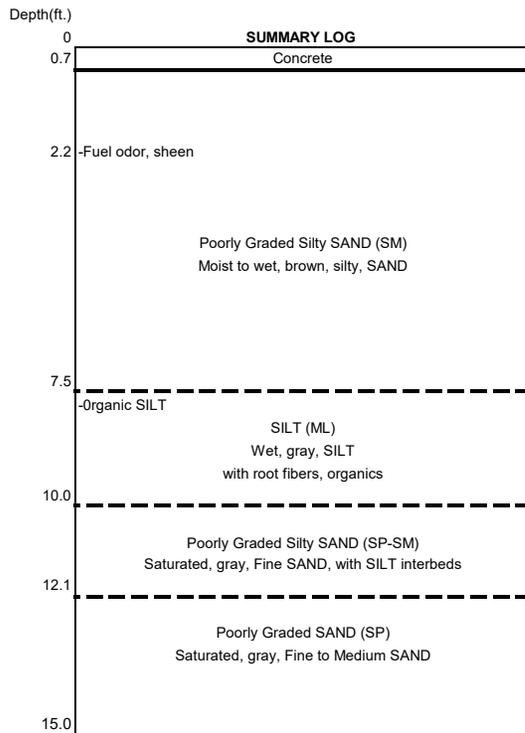
(Bottom of Boring)
NOTE: The summary log is an interpretation based on samples, drill action and interpolation.
Variations between what is shown and actual conditions should be anticipated.

- Abbreviations:** F - fine
M - medium
Sat. - saturated
Mot. - mottled
NS - No sheen
LS - Light sheen
MS - Medium sheen
HS-Heavy sheen
NO - No odor
SLO - Slight odor
MO - Moderate odor
SO - Strong odor

PP13

BORING - DESCRIPTION OF SAMPLES & DATA

Field Rep: DG Cooper				Location: N200269 E1269872 (NAD83)				
Drilling Co.: Cascade				Elevation (Ft.):		Ground Surface: Concrete Slab		
Driller: Portz				Date Completed: 11/04/20				
Drill Type: Geoprobe 7822DT				Weather: Cloudy 60F				
Size/Type Casing: 1.5" Rod				Hammer Type: Direct push		Sampler Type: 1.5" dia. X 60" Macro-core w/ acrylic liner		
Soil Sample No.	Sample Interval	PID (ppm)	Depth (Ft.)	Odor/Sheen	Spl Depth (Ft.) From - To	Spl length inches	Time	Sample Description
					0-5	48		0-0.4' Concrete
		12.6	1	NO/NS				0.4-1.6' Moist, mot brown, gravelly, SAND, with silt
PP13-2.5	2-3'	2.5	2	SLO/LS			1235	asphalt 1.0-1.2'
								1.6-2.2' Wet, gray, silty, F SAND, with sheen, odor
								2.2-4.0' Wet to sat, dk gray, F SAND, with some silt
						54		5.0-7.0' Sat, dk gray, F SAND, with silt interbed @ 6'
PP13-5	5-6'	0.6	6	NO/NS			1240	7.5-8.8' Wet, brown, organic SILT, peat
PP12-7.5	6-7'	0.6	7	NO/NS			1245	8.8-9.5' Wet, gray, SILT, with roots, root casts
					10-15	42		10.0-12.1' Wet-sat, gray-brown, interbedded SILT and F SAND
PP13-10	10-11'	0.6	10	NO/NS			1250	12.1-13.5' Sat, dark gray, F SAND grading to F-M SAND
PP13-12.5	12-13'	0.6	12	NO/NS			1255	
NOTE: Saturated @ 3'								
Completed boring backfilled with granular bentonite								



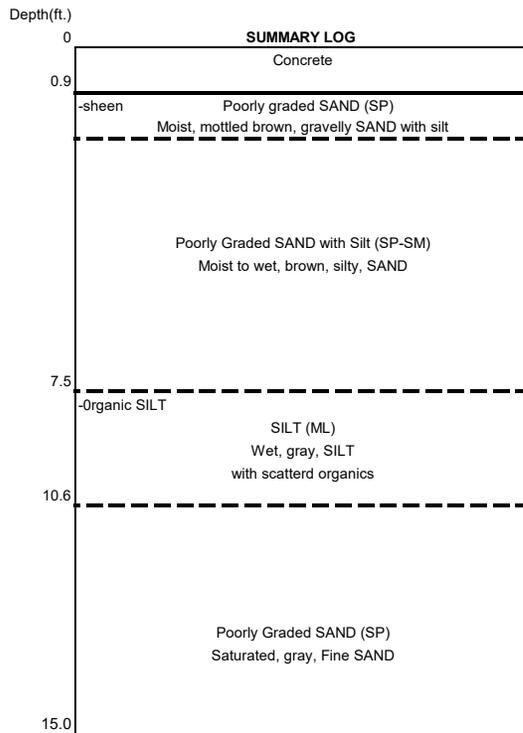
(Bottom of Boring)
NOTE: The summary log is an interpretation based on samples, drill action and interpolation.
Variations between what is shown and actual conditions should be anticipated.

- Abbreviations:** F - fine
M - medium
Sat. - saturated
Mot. - mottled
NS - No sheen
LS - Light sheen
MS - Medium sheen
HS-Heavy sheen
NO - No odor
SLO - Slight odor
MO - Moderate odor
SO - Strong odor

PP15

BORING - DESCRIPTION OF SAMPLES & DATA

Field Rep: DG Cooper				Location: N200263 E1269898 (NAD83)				
Drilling Co.: Cascade				Elevation (Ft.):		Ground Surface: Concrete Slab		
Driller: Portz				Date Completed: 11/04/20				
Drill Type: Geoprobe 7822DT				Weather: Rain 55F				
Size/Type Casing: 1.5" Rod				Hammer Type: Direct push		Sampler Type: 1.5" dia. X 60" Macro-core w/ acrylic liner		
Soil Sample No.	Sample Interval	PID (ppm)	Depth (Ft.)	Odor/Sheen	Spl Depth (Ft.) From - To	Spl length inches	Time	Sample Description
					0-5	36		0-0.9' Concrete
		0.5	1	NO/LS				0.9-1.8' Moist, mot brown, gravelly, SAND, with silt, wood, sheen
PP15-2.5	2-3'	0.2	2	SLO/LS			0930	1.8-3.0' Wet, gray, F SAND, with some silt
						60		5.0-7.0' Sat, gray, silty, F SAND
PP15-5	5-6'	0.2	6	NO/NS			0935	7.0-7.5' Sat, dk gray, F-M SAND
PP15-7.5	7-8'	0.2	7	NO/NS			0940	7.5-8.6' Wet, brown, organic, SILT, with peat
								8.6-10.0' Wet, gray, SILT, with scattered organics
					10-15	36		10.0-10.6' Wet, gray, SILT, grading sandy
PP15-10	10-11'	0.1	10	NO/NS			0945	10.6-13.0' Sat, gray, F SAND
PP15-12.5	12-13'	0.1	12	NO/NS			0950	
NOTE: Saturated @ 5'								
Completed boring backfilled with granular bentonite								



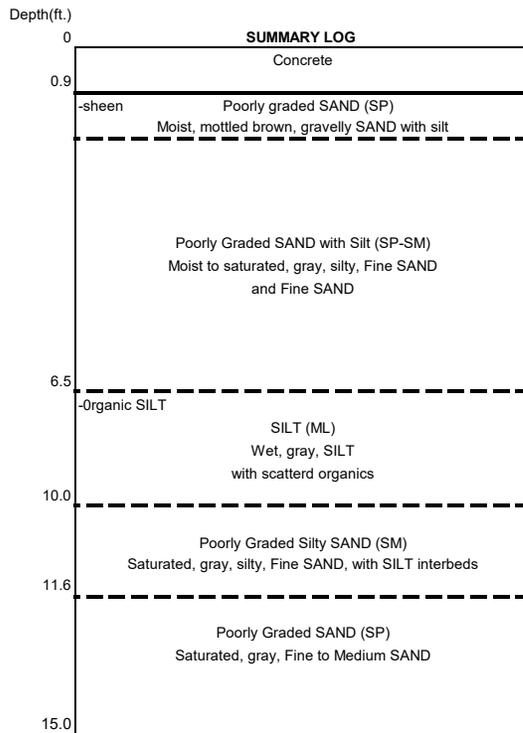
(Bottom of Boring)
NOTE: The summary log is an interpretation based on samples, drill action and interpolation.
Variations between what is shown and actual conditions should be anticipated.

- Abbreviations:** F - fine
M - medium
Sat. - saturated
Mot. - mottled
NS - No sheen
LS - Light sheen
MS - Medium sheen
HS - Heavy sheen
NO - No odor
SLO - Slight odor
MO - Moderate odor
SO - Strong odor

PP16

BORING - DESCRIPTION OF SAMPLES & DATA

Field Rep: DG Cooper				Location: N200234 E1269889 (NAD83)				
Drilling Co.: Cascade				Elevation (Ft.):		Ground Surface: Concrete Slab		
Driller: Portz				Date Completed: 11/04/20				
Drill Type: Geoprobe 7822DT				Weather: Rain 55F				
Size/Type Casing: 1.5" Rod				Hammer Type: Direct push		Sampler Type: 1.5" dia. X 60" Macro-core w/ acrylic liner		
Soil Sample No.	Sample Interval	PID (ppm)	Depth (Ft.)	Odor/Sheen	Spl Depth (Ft.) From - To	Spl length inches	Time	Sample Description
					0-5	42		0-2.0' Concrete
								2.0-3.1' Wet, mot gray, silty, SAND, with gravel, oily odor, sheen
PP16-2.5	2-3'	75.0	2	MO/MS			1025	3.1-3.5' Wet, gray, silty, F SAND
		0.4	3	NO/NS				
		0.2	5	NO/NS		42		5.0-6.5' Sat, dk gray, F SAND
PP16-5	5-6'	2.6	6	NO/NS			1030	6.5-8.0' Wet, brown, organic, SILT, with peat
PP15-7.5	7-8'	0.2	7	NO/NS			1035	8.0-8.5' Wet, gray, SILT, with scattered organics
					10-15	42		10.0-11.6' Sat, gray, silty, F SAND w/scattered organics, sand interbeds
PP16-10	10-11'	0.2	10	NO/NS			1040	11.6-13.5' Sat, dk gray, F-M SAND
PP16-12.5	12.5-13.5'	0.2	12	NO/NS			1045	
NOTE: Saturated @ 5'								
Completed boring backfilled with granular bentonite								



NOTE: The summary log is an interpretation based on samples, drill action and interpolation. Variations between what is shown and actual conditions should be anticipated.

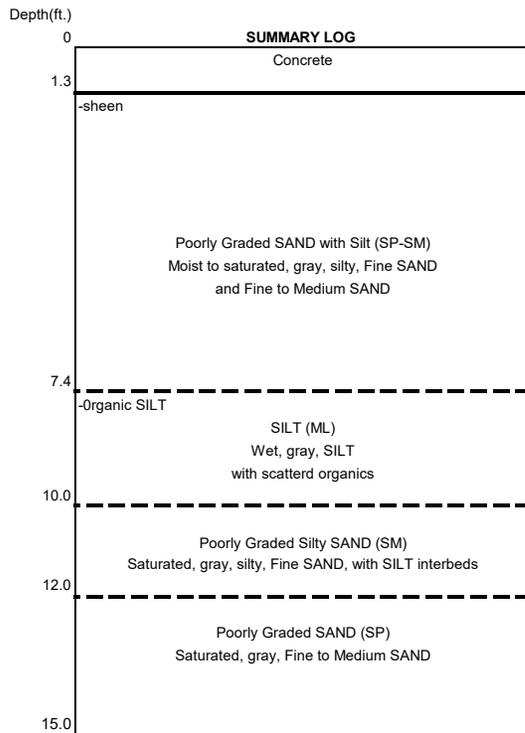
- Abbreviations:** F - fine
M - medium
Sat. - saturated
Mot. - mottled
NS - No sheen
LS - Light sheen
MS - Medium sheen
HS - Heavy sheen
NO - No odor
SLO - Slight odor
MO - Moderate odor
SO - Strong odor

BORING - DESCRIPTION OF SAMPLES & DATA

PP17

Field Rep: DG Cooper			Location: N200211 E1269878 (NAD83)					
Drilling Co.: Cascade			Elevation (Ft.):			Ground Surface: Concrete Slab		
Driller: Tim			Date Completed: 10/29/20					
Drill Type: Geoprobe 7822DT			Weather: Rain 55F					
Size/Type Casing: 1.5" Rod			Hammer Type: Direct push			Sampler Type: 1.5" dia. X 60" Macro-core w/ acrylic liner		
Soil Sample No.	Sample Interval	PID (ppm)	Depth (Ft.)	Odor/Sheen	Spl Depth (Ft.) From - To	Spl length inches	Time	Sample Description
		127.0	1	SLO/LS	0-5	42		0-1.3' Multiple Concrete slabs, oily directly beneath
PP17-2	1-2'	2.6	2	NO/NS			1025	1.3-3.3' Moist, brown silty, F SAND
		0.2	5	NO/NS		42		5.0-7.4' Sat, dark brown, F-M SAND
PP17-5	5-6'	2.6	6	NO/NS			1030	7.4-9.2' Wet, brown, organic, SILT
PP17-7.5	7.5-8.5'	0.2	7	NO/NS			1035	
					10-15	42		10.0-12.0' Sat, dark brown, F SAND w/scattered organics, silt interbeds
PP17-10	10-11'	0.2	10	NO/NS			1040	12-13.2' Sat, dk gray, F-M SAND
PP17-12.5	11.5-12.5'	0.2	12	NO/NS			1045	
PP17-14	13-14'							

NOTE: Saturated @ 5'
Completed boring backfilled with granular bentonite



(Bottom of Boring)
NOTE: The summary log is an interpretation based on samples, drill action and interpolation.
Variations between what is shown and actual conditions should be anticipated.

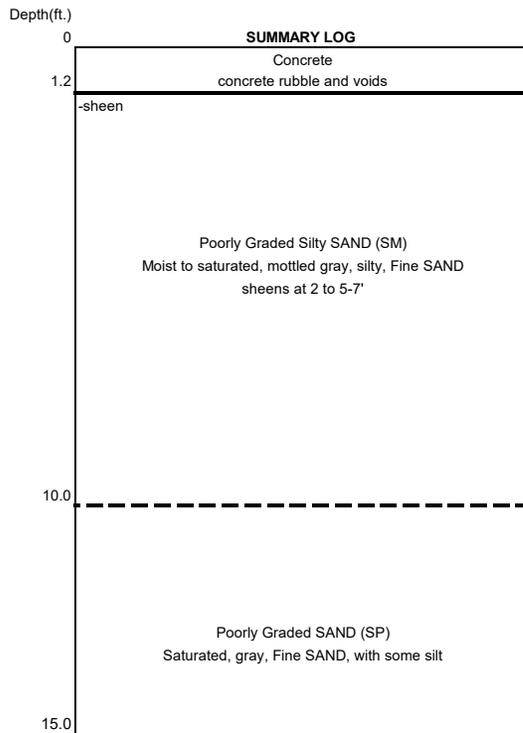
- Abbreviations:** F - fine
M - medium
Sat. - saturated
Mot. - mottled
NS - No sheen
LS - Light sheen
MS - Medium sheen
HS-Heavy sheen
NO - No odor
SLO - Slight odor
MO - Moderate odor
SO - Strong odor

PP18

BORING - DESCRIPTION OF SAMPLES & DATA

Field Rep: DG Cooper				Location: N200271 E1269920 (NAD83)				
Drilling Co.: Cascade				Elevation (Ft.):		Ground Surface: Concrete Slab		
Driller: Tim				Date Completed: 10/29/20				
Drill Type: Geoprobe 7822DT				Weather: Rain 55F				
Size/Type Casing: 1.5" Rod				Hammer Type: Direct push		Sampler Type: 1.5" dia. X 60" Macro-core w/ acrylic liner		
Soil Sample No.	Sample Interval	PID (ppm)	Depth (Ft.)	Odor/Sheen	Spl Depth (Ft.) From - To	Spl length inches	Time	Sample Description
		0.8	1	NO/NS	0-5	36		0-1.2' 6" concrete slab, concrete rubble, void beneath
						2 attempts		1.2-2.0' Moist, Gray-brown, gravelly, silty, SAND
PP18-2.5	2-3'	2.5	2	SLO/LS			1115	2.0-3.0' Wet, mot dark gray, silty, SAND, wood, sheen
		377	5	SO/MS		54		5.0-9.5' Wet, to sat, gray, silty, F SAND with silty interbeds
PP18-5	5-6'	253.0	6	SO/MS			1120	medium sheen from 5-7'
PP18-7.5	7-8'	75.0	7	MO/NS			1125	
					10-15	60		10-15' Sat, gray, F SAND with some silt, uniform
PP18-10	10-11'	2.0	10	NO/NS			1130	
PP18-12.5	12-13'	9.0	12	NO/NS			1135	
PP18-15	14-15'	2.3	14	NO/NS			1140	

NOTE: Saturated @ 6.5'
Completed boring backfilled with granular bentonite



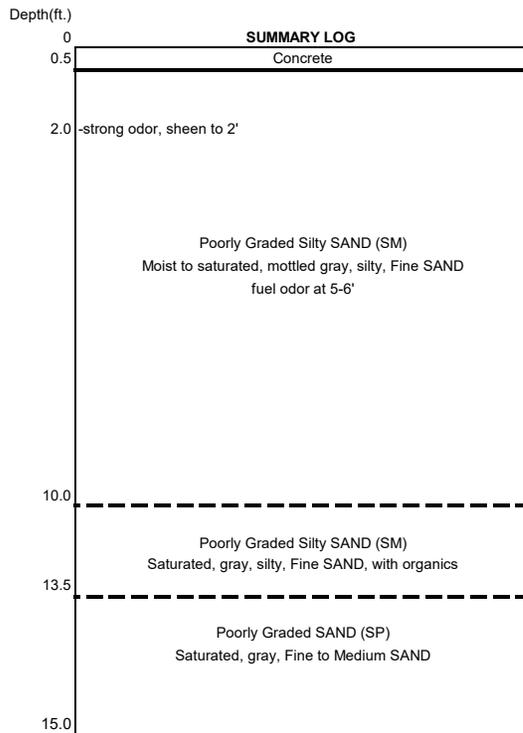
(Bottom of Boring)
NOTE: The summary log is an interpretation based on samples, drill action and interpolation.
Variations between what is shown and actual conditions should be anticipated.

- Abbreviations:** F - fine
M - medium
Sat. - saturated
Mot. - mottled
NS - No sheen
LS - Light sheen
MS - Medium sheen
HS-Heavy sheen
NO - No odor
SLO - Slight odor
MO - Moderate odor
SO - Strong odor

PP19

BORING - DESCRIPTION OF SAMPLES & DATA

Field Rep: DG Cooper				Location: N200253 E1269920 (NAD83)				
Drilling Co.: Cascade				Elevation (Ft.):		Ground Surface: Concrete Slab		
Driller: Tim				Date Completed: 10/29/20				
Drill Type: Geoprobe 7822DT				Weather: Cloudy 55F				
Size/Type Casing: 1.5" Rod				Hammer Type: Direct push		Sampler Type: 1.5" dia. X 60" Macro-core w/ acrylic liner		
Soil Sample No.	Sample Interval	PID (ppm)	Depth (Ft.)	Odor/Sheen	Spl Depth (Ft.) From - To	Spl length inches	Time	Sample Description
					0-5	42		0-0.5' Concrete with rebar
PP19-1	0.5-1'	1300	1	SO/LS			1325	0.5-2.1' Moist, mot dark gray, F-M SAND with gravel, wood
PP19-2.5	2-3'	4000	2	SO/LS			1330	strong fuel odor, wood at base of sample
								2.1-3.5' Wet, gray, silty, F SAND, strong fuel odor
		121	5	SLO/NS			48	5.0-9.0' Wet to sat, gray, silty, F SAND, grading sandy
PP19-5	5-6'	110.0	6	SLO/NS			1335	slight odor no sheens
PP19-7.5	7-8'	7.4	7	NO/NS			1340	
					10-15	60		10.0-13.5' Sat, gray, silty, F SAND, with scattered organics
PP19-10	10-11'	4.2	10	NO/NS			1345	13.5-15.0' Sat, gray, F SAND, grading coarser
PP19-12.5	12-13'	2.2	12	NO/NS			1350	
PP19-15	14-15'	1.3	14	NO/NS			1355	
								NOTE: Saturated @ 7.0'
								Completed boring backfilled with granular bentonite



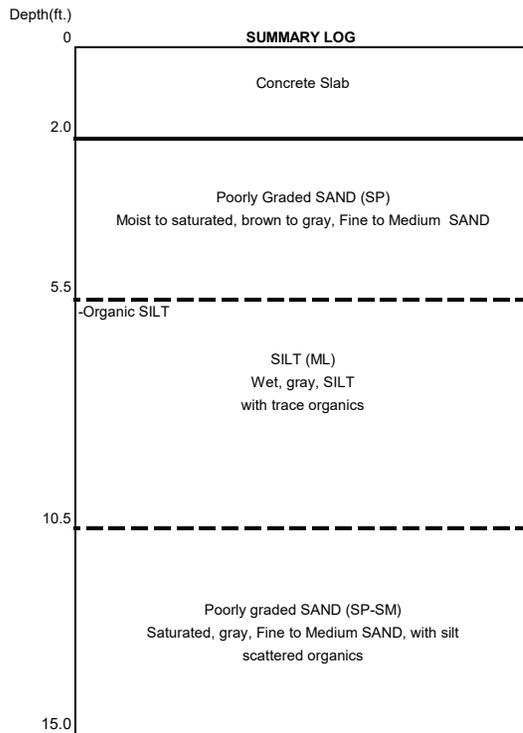
(Bottom of Boring)
NOTE: The summary log is an interpretation based on samples, drill action and interpolation.
Variations between what is shown and actual conditions should be anticipated.

- Abbreviations:** F - fine
M - medium
Sat. - saturated
Mot. - mottled
NS - No sheen
LS - Light sheen
MS - Medium sheen
HS - Heavy sheen
NO - No odor
SLO - Slight odor
MO - Moderate odor
SO - Strong odor

PP20

BORING - DESCRIPTION OF SAMPLES & DATA

Field Rep: DG Cooper				Location: N200230 E1269911 (NAD83)				
Drilling Co.: Cascade				Elevation (Ft.):		Ground Surface: Concrete Slab		
Driller: Tim				Date Completed: 10/29/20				
Drill Type: Geoprobe 7822DT				Weather: Cloudy 55F				
Size/Type Casing: 2" Rod				Hammer Type: Direct push		Sampler Type: 1.5" dia. X 60" Macro-core w/ acrylic liner		
Soil Sample No.	Sample Interval	PID (ppm)	Depth (Ft.)	Odor/Sheen	Spl Depth (Ft.) From - To	Spl length inches	Time	Sample Description
					0-5	12		0-2.0' Concrete slab
								Concrete rubble in sampler - poor recovery
					5-10	30		5-5.5' Sat, gray, F SAND
PP20-5	5-5.5'	0.9	5	NO/NS			1430	5.5-6.5' Wet, brown, organic, SILT, with grass, peat
PP20-7.5	6.5-7.5'	0.5	7	NO/NS			1435	6.5-7.5' Wet, gray, SILT, with root casts, roots
					10-15	60		10-10.5' Wet, gray, SILT, grading fine sandy, trace organics
PP20-10	10-11'	0.3	10	NO/NS			1440	10.5-12.0' Sat, gray, silty, F SAND, trace organics
PP20-12.5	12-13'	0.2	12	NO/NS			1445	12.0-15.0' Sat, dark gray, F SAND, with scattered organics
PP20-15	14-15	0.2	14	NO/NS			1450	
NOTE: Saturated @ 5'								
Completed boring backfilled with granular bentonite								



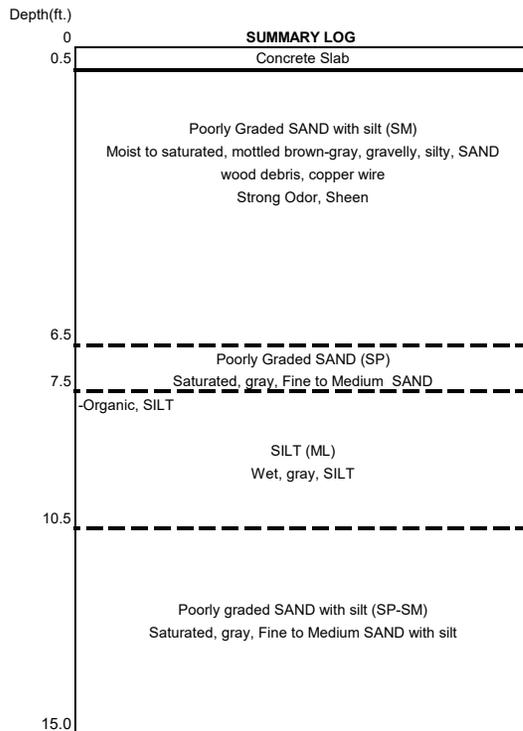
(Bottom of Boring)
NOTE: The summary log is an interpretation based on samples, drill action and interpolation.
Variations between what is shown and actual conditions should be anticipated.

- Abbreviations:** F - fine
M - medium
Sat. - saturated
Mot. - mottled
NS - No sheen
LS - Light sheen
MS - Medium sheen
HS-Heavy sheen
NO - No odor
SLO - Slight odor
MO - Moderate odor
SO - Strong odor

PP21

BORING - DESCRIPTION OF SAMPLES & DATA

Field Rep: DG Cooper				Location: N200212 E1269915 (NAD83)				
Drilling Co.: Cascade				Elevation (Ft.):		Ground Surface: Concrete Slab		
Driller: Tim				Date Completed: 10/28/20				
Drill Type: Geoprobe 7822DT				Weather: Cloudy 55F				
Size/Type Casing: 2" Rod				Hammer Type: Direct push		Sampler Type: 1.5" dia. X 60" Macro-core w/ acrylic liner		
Soil Sample No.	Sample Interval	PID (ppm)	Depth (Ft.)	Odor/Sheen	Spl Depth (Ft.) From - To	Spl length inches	Time	Sample Description
					0-5	36		0-0.5' Concrete slab
		112.0	1	SO/LS				0.5-2.5' Damp, mot gray-brown, gravelly, silty, SAND
PP21-2.5	2-3'	12.0	2.5	SO/MS			1415	with staining, strong odor, sheen
								2.5-3.0' Wet, dark gray, silty, SAND, with wood debris
								with strong odor, sheen
					5-10	54		5-6.5' Sat, gray, F SAND, with some silt, silt clasts
PP21-5	5-6'	0.8	5	NO/NS			1430	6.5-6.5' Sat, dark gray, F-M SAND
PP21-7.5	6.5-7.5'	2.0	7.5	NO/NS			1435	7.5-9.0' Wet, brown-gray, organic, SILT
								9.0-9.5' Wet, gray, SILT, with root casts, plastic
					10-15	60		10-10.5' Wet, gray, SILT, grading fine sandy
PP21-10	10-11'	1.1	10	NO/NS			1440	10.5-13.6' Sat, gray, silty, F SAND
PP21-12.5	12-13'	0.5	12	NO/NS			1445	13.6-15.0' Sat, dark gray, F-M SAND
PP21-15	14-15	0.3	14	NO/NS			1450	
NOTE: Saturated @ 5'								
Completed boring backfilled with granular bentonite								



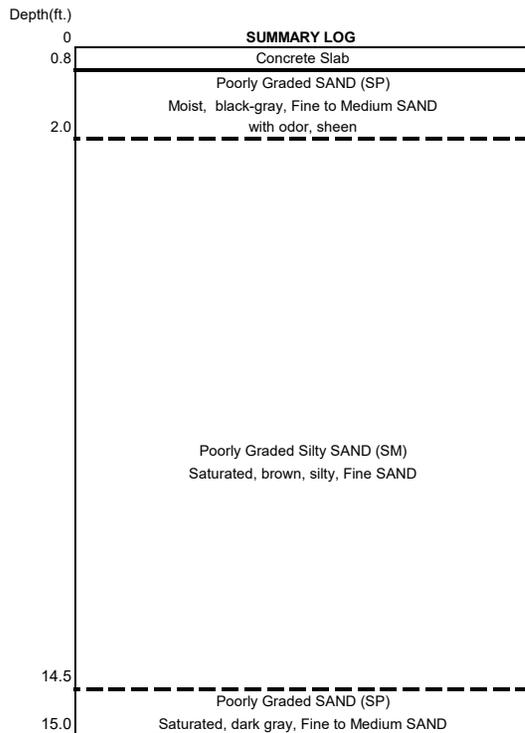
(Bottom of Boring)
NOTE: The summary log is an interpretation based on samples, drill action and interpolation.
Variations between what is shown and actual conditions should be anticipated.

- Abbreviations:** F - fine
M - medium
Sat. - saturated
Mot. - mottled
NS - No sheen
LS - Light sheen
MS - Medium sheen
HS - Heavy sheen
NO - No odor
SLO - Slight odor
MO - Moderate odor
SO - Strong odor

PP22

BORING - DESCRIPTION OF SAMPLES & DATA

Field Rep: DG Cooper				Location: N200230 E1269932 (NAD83)				
Drilling Co.: Cascade				Elevation (Ft.):		Ground Surface: Concrete Slab		
Driller: Tim				Date Completed: 10/29/20				
Drill Type: Geoprobe 7822DT				Weather: Cloudy 55F				
Size/Type Casing: 2" Rod				Hammer Type: Direct push		Sampler Type: 1.5" dia. X 60" Macro-core w/ acrylic liner		
Soil Sample No.	Sample Interval	PID (ppm)	Depth (Ft.)	Odor/Sheen	Spl Depth (Ft.) From - To	Spl length inches	Time	Sample Description
		239.0	1	MO/MS	0-5	36		0-0.8' Concrete slab
PP22-2.5	2-3'	38.0	2.5	NO/NS			1015	0.8-2.0' Moist, black-gray, F-M SAND upper 6" black with odor, sheen
								2.0-3.0' Wet, gray, silty, F SAND
					5-10	54		5-9.5' Wet to sat, dark brown, silty, F SAND, with thin silt lenses
PP22-5	5-6'	3.4	5	NO/NS			1020	
PP22-7.5	7-8'	1.1	7.5	NO/NS			1025	
					10-15	60		10-14.5' As Above
PP22-10	10-11'	1.6	10	NO/NS			1030	14.5-15.0' Sat, dark gray, F-M SAND
PP22-12.5	12-13'	0.3	12	NO/NS			1035	
PP22-15	14-15	0.1	14	NO/NS			1040	
NOTE: Saturated @ 6.5'								Completed boring backfilled with granular bentonite



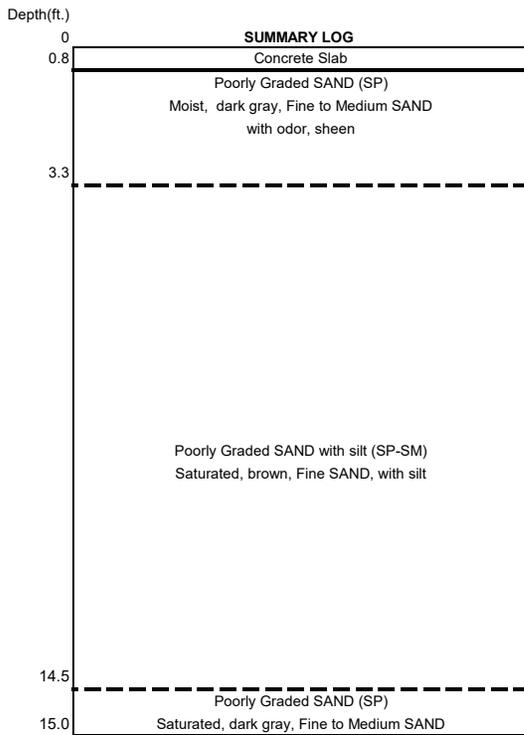
(Bottom of Boring)
NOTE: The summary log is an interpretation based on samples, drill action and interpolation.
Variations between what is shown and actual conditions should be anticipated.

- Abbreviations:** F - fine
M - medium
Sat. - saturated
Mot. - mottled
NS - No sheen
LS - Light sheen
MS - Medium sheen
HS-Heavy sheen
NO - No odor
SLO - Slight odor
MO - Moderate odor
SO - Strong odor

PP23

BORING - DESCRIPTION OF SAMPLES & DATA

Field Rep: DG Cooper				Location: N200232 E1269957 (NAD83)				
Drilling Co.: Cascade				Elevation (Ft.):		Ground Surface: Concrete Slab		
Driller: Tim				Date Completed: 10/28/20				
Drill Type: Geoprobe 7822DT				Weather: Cloudy 55F				
Size/Type Casing: 2" Rod				Hammer Type: Direct push		Sampler Type: 1.5" dia. X 60" Macro-core w/ acrylic liner		
Soil Sample No.	Sample Interval	PID (ppm)	Depth (Ft.)	Odor/Sheen	Spl Depth (Ft.) From - To	Spl length inches	Time	Sample Description
					0-5	39		0-0.5' Concrete slab
		1131	1.5	SO/LS				0.5-3.3' Moist, dk gray, F-M SAND
PP23-2	1-2'	312	2.5	SO/LS			1140	with odor, sheen
		20	5	NO/NS	5-10	48		5-9.0' Wet to sat, dark brown, silty, F SAND, with thin silt interbeds
PP23-5	5-6'	72.0	6	SLO/LS			1145	
PP23-7.5	7.5-8.5'	7.5	7.5	NO/NS			1150	
					10-15	60		10-14.5' Sat, dark brown, F SAND, with silt
PP23-10	10-11'	13.3	10	NO/NS			1155	14.5-15.0' Sat, dark gray, F-M SAND
PP23-12.5	12.5-13.5'	3.5	12	NO/NS			1200	
PP23-15	14-15	3.5	14	NO/NS			1205	
NOTE: Saturated @ 6.5'								
Completed boring backfilled with granular bentonite								



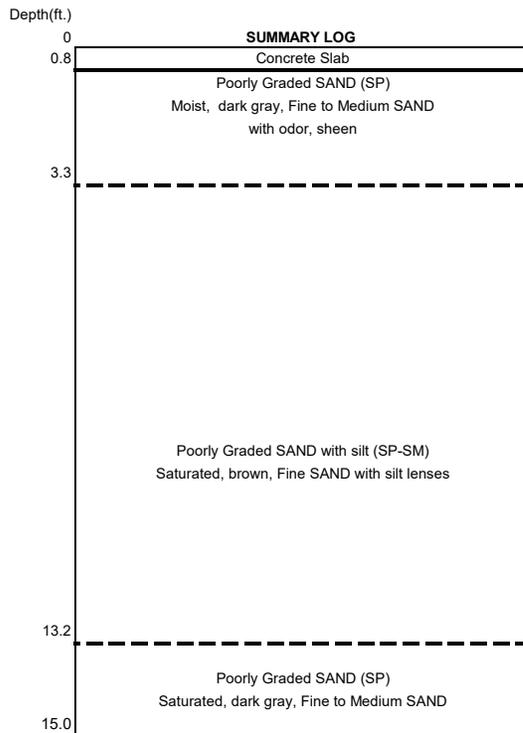
(Bottom of Boring)
NOTE: The summary log is an interpretation based on samples, drill action and interpolation.
Variations between what is shown and actual conditions should be anticipated.

- Abbreviations:** F - fine
M - medium
Sat. - saturated
Mot. - mottled
NS - No sheen
LS - Light sheen
MS - Medium sheen
HS - Heavy sheen
NO - No odor
SLO - Slight odor
MO - Moderate odor
SO - Strong odor

PP24

BORING - DESCRIPTION OF SAMPLES & DATA

Field Rep: DG Cooper				Location: N200205 E1269954 (NAD83)				
Drilling Co.: Cascade				Elevation (Ft.):		Ground Surface: Concrete Slab		
Driller: Tim				Date Completed: 10/28/20				
Drill Type: Geoprobe 7822DT				Weather: Cloudy 55F				
Size/Type Casing: 2" Rod				Hammer Type: Direct push		Sampler Type: 1.5" dia. X 60" Macro-core w/ acrylic liner		
Soil Sample No.	Sample Interval	PID (ppm)	Depth (Ft.)	Odor/Sheen	Spl Depth (Ft.) From - To	Spl length inches	Time	Sample Description
		130	1.5	SLO/LS	0-5	39		0-0.5' Concrete slab
PP24-2.5	1.5-2.5'	2300	2.5	SO/MS			1330	0.5-3.3' Moist, dk gray, F-M SAND with odor, sheen
		153	5	SLO/NS				
		105	5	NO/NS	5-10	54		5-9.0' Wet to sat, dark brown, F SAND
PP24-5	5-6'	5.0	6	SLO/LS			1335	with wood at 5.2 and 9.2', silt lenses at 8.6'
PP24-7.5	7.5-8.5'	4.0	7.5	NO/NS			1340	
					10-15	60		10-13.2' Sat, dark brown, F SAND, with wood/organics at 11.5'
PP24-10	10-11'	1.4	10	NO/NS			1345	13.2-15.0' Sat, dark gray, F-M SAND
PP24-12.5	12-13'	1.6	12	NO/NS			1350	
PP24-15	14-15	0.8	14	NO/NS			1355	
NOTE: Saturated @ 6.2'								Completed boring backfilled with granular bentonite



(Bottom of Boring)
NOTE: The summary log is an interpretation based on samples, drill action and interpolation.
Variations between what is shown and actual conditions should be anticipated.

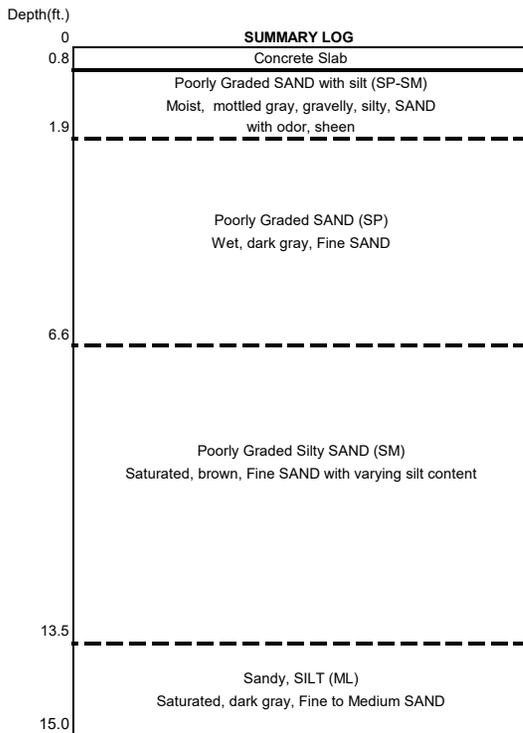
- Abbreviations:** F - fine
M - medium
Sat. - saturated
Mot. - mottled
NS - No sheen
LS - Light sheen
MS - Medium sheen
HS - Heavy sheen
NO - No odor
SLO - Slight odor
MO - Moderate odor
SO - Strong odor

BORING - DESCRIPTION OF SAMPLES & DATA

PP25

Field Rep: DG Cooper				Location: N200265 E1269956 (NAD83)				
Drilling Co.: Cascade				Elevation (Ft.):		Ground Surface: Concrete Slab		
Driller: Tim				Date Completed: 10/28/20				
Drill Type: Geoprobe 7822DT				Weather: Cloudy 55F				
Size/Type Casing: 2" Rod				Hammer Type: Direct push		Sampler Type: 1.5" dia. X 60" Macro-core w/ acrylic liner		
Soil Sample No.	Sample Interval	PID (ppm)	Depth (Ft.)	Odor/Sheen	Spl Depth (Ft.) From - To	Spl length inches	Time	Sample Description
					0-5	42		0-1.0' Multiple Concrete slabs
PP25-1	1-1.3'	22	1	MO/MS			1535	1.0-1.9' Moist, mot gray, gravelly, silty, SAND, w/odor, sheen
PP25-2.5	2-3'	58	2.5	SLO/LS			1545	1.9-3.5' Wet, dark gray, F SAND, w/odor, sheen
					5-10	54		5-6.6' Wet, dark gray, F SAND
PP25-5	5-6'	45.0	5	MO/LS			1550	6.6-9.5' Wet-sat, dark gray, silty, F SAND
PP25-7.5	7-8'	4.0	7.5	SLO/LS			1555	sheen inside liner, varying silt content
					10-15	60		10-13.2' Sat, dark gray, silty, very fine SAND
PP25-10	10-11'	8.1	10	NO/NS			1600	13.5-15.0' Sat, gray-brown, fine sandy, SILT
PP25-12.5	12-13'	5.7	12	NO/NS			1605	
PP25-15	14-15	9.5	14	NO/NS			1610	

NOTE: Saturated @ 7.5'
Completed boring backfilled with granular bentonite



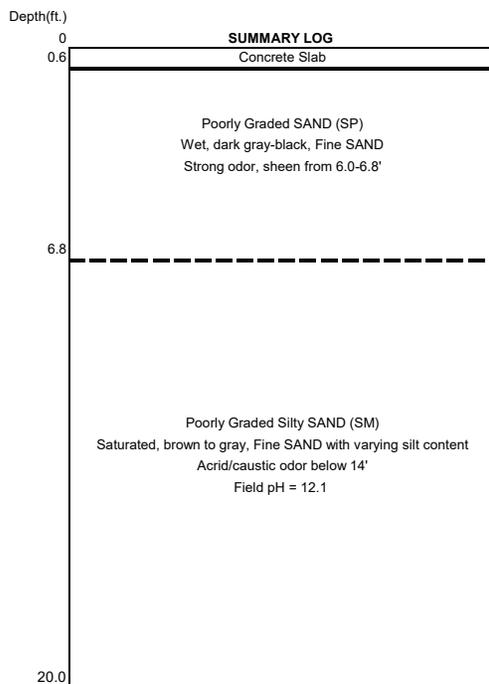
(Bottom of Boring)
NOTE: The summary log is an interpretation based on samples, drill action and interpolation.
Variations between what is shown and actual conditions should be anticipated.

- Abbreviations:** F - fine
M - medium
Sat. - saturated
Mot. - mottled
NS - No sheen
LS - Light sheen
MS - Medium sheen
HS-Heavy sheen
NO - No odor
SLO - Slight odor
MO - Moderate odor
SO - Strong odor

PP26

BORING - DESCRIPTION OF SAMPLES & DATA

Field Rep: DG Cooper				Location: N200245 E1269969 (NAD83)				
Drilling Co.: Cascade				Elevation (Ft.):				
Driller: Tim				Ground Surface: Concrete Slab				
Drill Type: Geoprobe 7822DT				Date Completed: 10/28/20				
Size/Type Casing: 2" Rod				Weather: Cloudy 55F				
				Hammer Type: Direct push				
				Sampler Type: 1.5" dia. X 60" Macro-core w/ acrylic liner				
Soil Sample No.	Sample Interval	PID (ppm)	Depth (Ft.)	Odor/Sheen	Spl Depth (Ft.) From - To	Spl length inches	Time	Sample Description
					0-5	36		0-0.6' Concrete
		1	1	NO/NS		2 attempts		0.6-3.0' Moist, dark gray, F SAND, becomes black @ 2.8'
PP26-2.5	2-3'	5	2.5	NO/NS			0935	
		1.5	5	NO/NS	5-10	50		5-6.8' Wet to sat, black, F SAND
PP26-5	5.5-6.5'	50.0	6	SO/MS		2 attempts	0940	sheen, strong odor @ 6.0-6.8'
PP26-7.5	7.5-8.5'	2.5	7.5	NO/NS			0945	6.8-9.2' Sat, brown, silty, F SAND
		2.5	9	NO/NS				sheen @ 8', possible carry-down
					10-15	55		10-14.5' Sat, brown-gray, silty, F SAND
PP26-10	10-11'	2.2	10	NO/NS			0950	Acrid odor, no sheen
PP26-12.5	12-13'	30.0	12.5	NO/NS			0955	
		20.0	14	SLO/NS				
					15-20	60		15-20' Sat, gray, F SAND, w/trace to some silt
PP26-15	15-16	11.0	15	SLO/NS			1000	Acrid/caustic-like odor, field pH=12.1
PP26-17.5	17-18	50.0	17	SLO/NS			1005	
PP26-20	19-20	35.0	19	SLO/NS			1010	
NOTE: Saturated @ 6.0'								
Completed boring backfilled with granular bentonite								



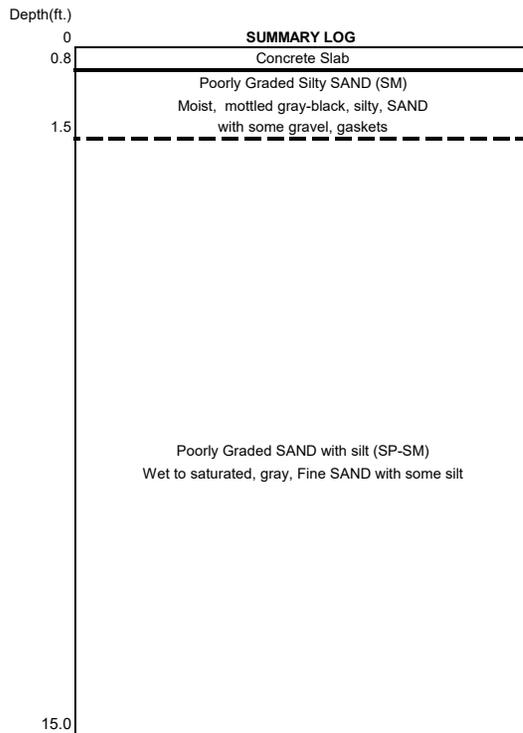
(Bottom of Boring)
NOTE: The summary log is an interpretation based on samples, drill action and interpolation.
Variations between what is shown and actual conditions should be anticipated.

- Abbreviations:** F - fine
M - medium
Sat. - saturated
Mot. - mottled
NS - No sheen
LS - Light sheen
MS - Medium sheen
HS - Heavy sheen
NO - No odor
SLO - Slight odor
MO - Moderate odor
SO - Strong odor

BORING - DESCRIPTION OF SAMPLES & DATA

PP27

Field Rep: DG Cooper				Location: N200206 E1269977 (NAD83)				
Drilling Co.: Cascade				Elevation (Ft.):		Ground Surface: Concrete Slab		
Driller: Tim				Date Completed: 10/27/20				
Drill Type: Geoprobe 7822DT				Weather: Cloudy 55F				
Size/Type Casing: 2" Rod				Hammer Type: Direct push		Sampler Type: 1.5" dia. X 60" Macro-core w/ acrylic liner		
Soil Sample No.	Sample Interval	PID (ppm)	Depth (Ft.)	Odor/Sheen	Spl Depth (Ft.) From - To	Spl length inches	Time	Sample Description
					0-5	42		0-0.5' Concrete
		109	1	SLO/NS				0.5-1.5' Moist, black- gray, silty, SAND, some gravel, rubber gaskets
PP27-2	1-2'	1	2.5	NO/NS			1415	1.5-3.5' Wet, dark gray, F SAND, w/organics @ 3'
					5-10	45		5-8.8' Wet to sat, gray, F SAND, with some silt
PP27-5	5-6'	10.0	5	NO/NS		2 attempts	1420	grading finer with depth, shells @ 5.5'
PP27-7.5	7-8'	1.0	7.5	NO/NS			1425	
					10-15	60		10-15' Sat, gray, F SAND with some silt
PP27-10	10-11'	0.0	10	NO/NS		2 attempts	1430	
PP27-12.5	12-13'	0.0	12	NO/NS			1435	
PP27-15	14-15	0.0	14	NO/NS			1440	
NOTE: Saturated @ 6.5'								
Completed boring backfilled with granular bentonite								



(Bottom of Boring)
NOTE: The summary log is an interpretation based on samples, drill action and interpolation.
Variations between what is shown and actual conditions should be anticipated.

- Abbreviations:** F - fine
M - medium
Sat. - saturated
Mot. - mottled
NS - No sheen
LS - Light sheen
MS - Medium sheen
HS - Heavy sheen
NO - No odor
SLO - Slight odor
MO - Moderate odor
SO - Strong odor

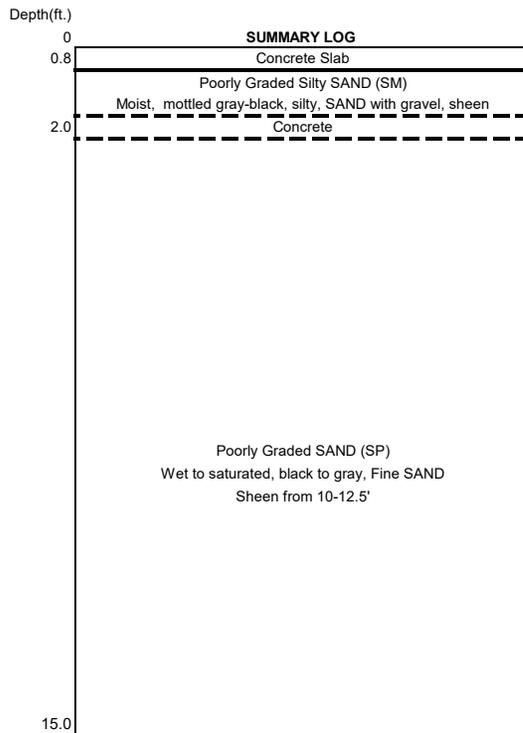
PP28

BORING - DESCRIPTION OF SAMPLES & DATA

Field Rep: DG Cooper				Location: N200257 E1269988 (NAD83)				
Drilling Co.: Cascade				Elevation (Ft.):		Ground Surface: Concrete Slab		
Driller: Tim				Date Completed: 10/28/20				
Drill Type: Geoprobe 7822DT				Weather: Cloudy 50F				
Size/Type Casing: 2" Rod				Hammer Type: Direct push		Sampler Type: 1.5" dia. X 60" Macro-core w/ acrylic liner		
Soil Sample No.	Sample Interval	PID (ppm)	Depth (Ft.)	Odor/Sheen	Spl Depth (Ft.) From - To	Spl length inches	Time	Sample Description
					0-5	36		0-0.9' Concrete
		161	1	MO/MS				0.9-1.6' Moist, black, silty, SAND, some gravel, sheen
PP28-2.5	2-3'	24	2.5	SO/NS			0840	1.6-2.0' Concrete
								2.0-3.0' Moist, gray, F SAND
					5-10	36		5-8.0' Wet to sat, mot gray-black, F SAND
PP28-5	5-6'	5.5	5	NO/NS			0845	Charred wood @ 7.6'
PP28-7.5	7-8'	9.0	7.5	SLO/NS			0850	Silt interbed @ 7.4'
					10-15	48		10-11.5' Sat, mot gray-black, F SAND with some silt
PP28-10	10-11'	62.0	10	MO/MS			0855	scattered gravel, charred wood, odor, sheen
PP28-12.5	12-13'	5.0	12	SLO/MS			0900	11.5-14.0' Sat, dark gray, F SAND
PP28-14	13-14	0.0	14	NO/NS			0905	sheen declines below 12.5'

NOTE: Saturated @ 7.5'

Completed boring backfilled with granular bentonite



(Bottom of Boring)

NOTE: The summary log is an interpretation based on samples, drill action and interpolation.

Variations between what is shown and actual conditions should be anticipated.

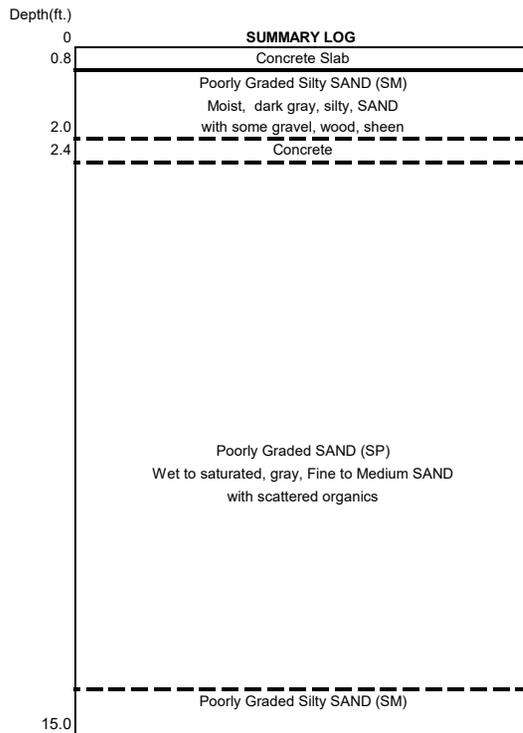
Abbreviations: F - fine

- M - medium
- Sat. - saturated
- Mot. - mottled
- NS - No sheen
- LS - Light sheen
- MS - Medium sheen
- HS - Heavy sheen
- NO - No odor
- SLO - Slight odor
- MO - Moderate odor
- SO - Strong odor

PP30

BORING - DESCRIPTION OF SAMPLES & DATA

Field Rep: DG Cooper				Location: N200267 E1270027 (NAD83)				
Drilling Co.: Cascade				Elevation (Ft.):		Ground Surface: Concrete Slab		
Driller: Tim				Date Completed: 10/27/20				
Drill Type: Geoprobe 7822DT				Weather: Cloudy 50F				
Size/Type Casing: 2" Rod				Hammer Type: Direct push		Sampler Type: 1.5" dia. X 60" Macro-core w/ acrylic liner		
Soil Sample No.	Sample Interval	PID (ppm)	Depth (Ft.)	Odor/Sheen	Spl Depth (Ft.) From - To	Spl length inches	Time	Sample Description
					0-5	42		0-0.5' Concrete
								0.5-2.0' Moist, dark gray, silty, SAND, some gravel, wood, sheen
PP30-2	1-2'	28	2	MO/MS			1015	2.0-2.4' Concrete
		1	3	NO/NS				2.4-3.5' Moist, gray, F SAND, with some silt
					5-10	42		5-8.5' Wet to sat, gray, F-M SAND
PP30-5	5-6'	10.0	5	NO/NS			1020	uniform, scattered organics
PP30-7.5	7-8'	1.0	7.5	NO/NS			1025	
					10-15	60		10-15' Sat, dark gray, F SAND
PP30-10	10-11'	0.0	10	NO/NS			1030	silt interbed @ 12', grades silty below 14'
PP30-12.5	12-13'	0.0	12	NO/NS			1035	
PP30-15	14-15	0.0	14	NO/NS			1040	
NOTE: Saturated @ 6.5'								
Completed boring backfilled with granular bentonite								



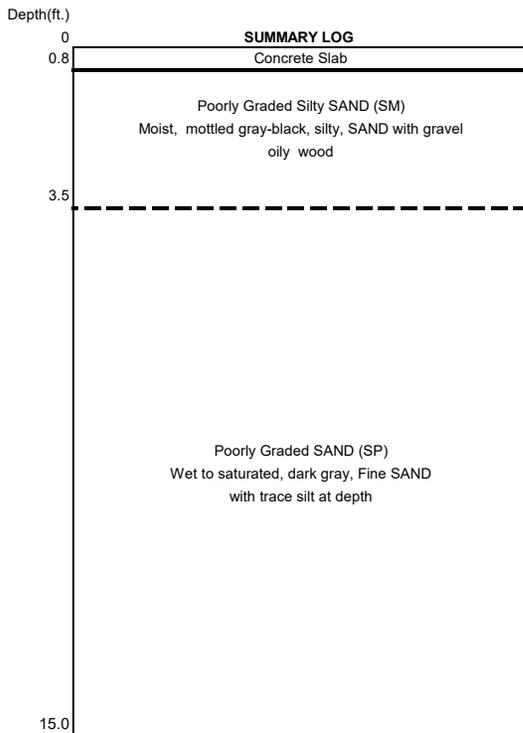
NOTE: The summary log is an interpretation based on samples, drill action and interpolation. Variations between what is shown and actual conditions should be anticipated.

- Abbreviations:** F - fine
M - medium
Sat. - saturated
Mot. - mottled
NS - No sheen
LS - Light sheen
MS - Medium sheen
HS-Heavy sheen
NO - No odor
SLO - Slight odor
MO - Moderate odor
SO - Strong odor

BORING - DESCRIPTION OF SAMPLES & DATA

PP31

Field Rep: DG Cooper				Location: N200233 E1270036 (NAD83)				
Drilling Co.: Cascade				Elevation (Ft.):		Ground Surface: Concrete Slab		
Driller: Tim				Date Completed: 10/29/20				
Drill Type: Geoprobe 7822DT				Weather: Cloudy 55F				
Size/Type Casing: 2" Rod				Hammer Type: Direct push		Sampler Type: 1.5" dia. X 60" Macro-core w/ acrylic liner		
Soil Sample No.	Sample Interval	PID (ppm)	Depth (Ft.)	Odor/Sheen	Spl Depth (Ft.) From - To	Spl length inches	Time	Sample Description
					0-5	42		0-0.5' Concrete
		83	1	SLO/NS				0.5-2.5' Moist, mot gray-black, silty, SAND with gravel, oily wood
PP31-2.5	1.5-2.5'	6	2	NO/NS			1525	2.5-3.5' Wet, gray, F SAND
					5-10	30		5-7.5' Wet to sat, dark gray, F SAND
PP31-5	5-6'	0.8	5	NO/NS			1530	uniform
PP31-7.5	6.5-7.5	0.3	7.5	NO/NS			1535	
					10-15	60		10-15' Sat, dark gray, F SAND with trace silt
PP31-10	10-11'	1.0	10	NO/NS			1540	fine organics, silty @ 13-13.5'
PP31-12.5	12-13'	0.4	12	NO/NS			1545	
PP31-15	14-15	0.3	14	NO/NS			1550	
								NOTE: Saturated @ 7.5'
								Completed boring backfilled with granular bentonite



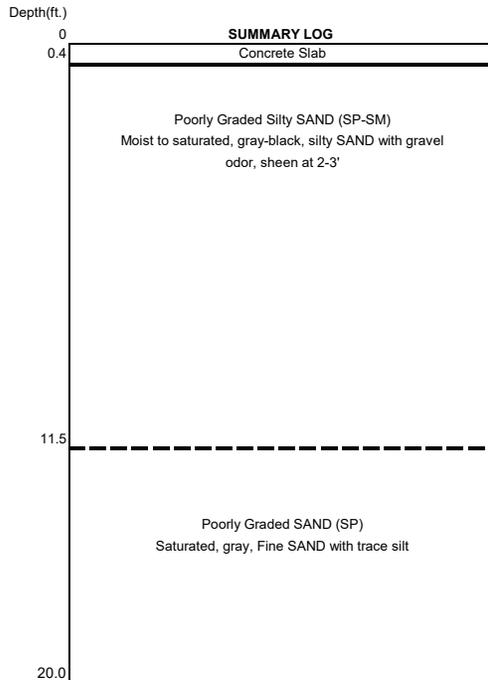
(Bottom of Boring)
NOTE: The summary log is an interpretation based on samples, drill action and interpolation.
Variations between what is shown and actual conditions should be anticipated.

- Abbreviations:** F - fine
M - medium
Sat. - saturated
Mot. - mottled
NS - No sheen
LS - Light sheen
MS - Medium sheen
HS - Heavy sheen
NO - No odor
SLO - Slight odor
MO - Moderate odor
SO - Strong odor

PP32

BORING - DESCRIPTION OF SAMPLES & DATA

Field Rep: DG Cooper					Location: N200296 E1270053 (NAD83)				
Drilling Co.: Cascade					Elevation (Ft.):				
Driller: Tim					Ground Surface: Concrete Slab				
Drill Type: Geoprobe 7822DT					Date Completed: 10/26/20				
Size/Type Casing: 2" Rod					Weather: Cloudy 50F				
					Hammer Type: Direct push				
					Sampler Type: 1.5" dia. X 60" Macro-core w/ acrylic liner				
Soil Sample No.	Sample Interval	PID (ppm)	Depth (Ft.)	Odor/Sheen	Spl Depth (Ft.) From - To	Spl length inches	Time	Sample Description	
					0-5	36		0-0.4' Concrete	
								0.4-1.4' Moist, gray-black, silty, SAND with gravel	
PP32-2.5	2-3'	1	2.5	SLO/LS			1415	1.4-3.0' Wet, dark gray, silty SAND with gravel, wood debris, brick	
					5-10	30		5-5.5' cored wood	
PP32-5	5.5-6.5'	11.0	5	SLO/NS			1420	5.5-7.5' Wet, mot gray, silty, SAND with some gravel, wood	
PP32-7.5	6.5-7.5'	1.0	7.5	SLO/NS			1425		
					10-15	30		10-11.5' Sat, gray-black, silty, SAND with gravel	
PP32-10	10-11'	2.4	10	SLO/NS			1430	11.5-12.5' Sat, gray, F SAND, uniform	
PP32-12.5	11.5-12.5'	0.3	12.5	NO/NS			1435		
					15-20	48		15-16.5' Sat, black, F sandy, SILT, grading F Sandy with depth	
PP32-15	15-16'	0.0	15	NO/NS			1440	16.5-19' Sat, gray, F SAND with trace silt, uniform	
PP32-17.5	17-18'	0.3	17	NO/NS			1445		
PP32-20	18-19'	0.3	19	NO/NS			1450		
NOTE: Completed boring backfilled with granular bentonite									



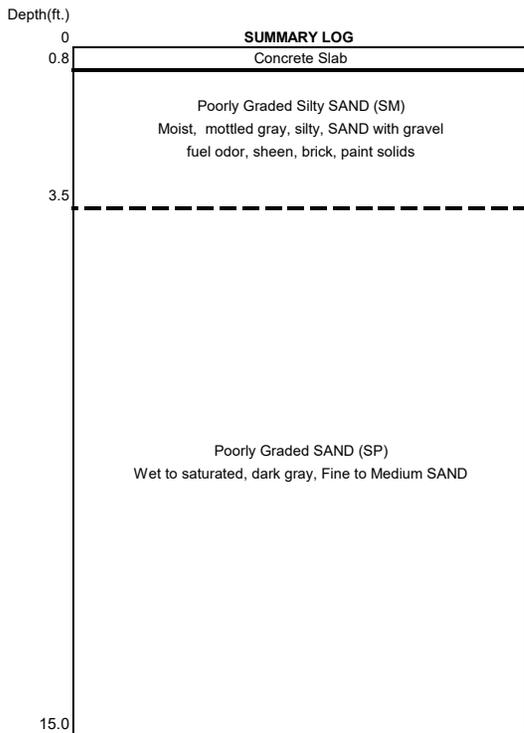
(Bottom of Boring)
NOTE: The summary log is an interpretation based on samples, drill action and interpolation.
Variations between what is shown and actual conditions should be anticipated.

- Abbreviations:** F - fine
M - medium
Sat. - saturated
Mot. - mottled
NS - No sheen
LS - Light sheen
MS - Medium sheen
HS - Heavy sheen
NO - No odor
SLO - Slight odor
MO - Moderate odor
SO - Strong odor

PP33

BORING - DESCRIPTION OF SAMPLES & DATA

Field Rep: DG Cooper				Location: N200261 E1270039 (NAD83)				
Drilling Co.: Cascade				Elevation (Ft.):		Ground Surface: Concrete Slab		
Driller: Tim				Date Completed: 10/27/20				
Drill Type: Geoprobe 7822DT				Weather: Cloudy 55F				
Size/Type Casing: 2" Rod				Hammer Type: Direct push		Sampler Type: 1.5" dia. X 60" Macro-core w/ acrylic liner		
Soil Sample No.	Sample Interval	PID (ppm)	Depth (Ft.)	Odor/Sheen	Spl Depth (Ft.) From - To	Spl length inches	Time	Sample Description
					0-5	42		0-0.4' Concrete
						2 attempts		0.4-2.5' Moist, mot gray, silty, SAND with gravel, fuel odor
PP33-2.5	2-3'	150	2	MO/MS			1210	2.5-2.7' Brick
								2.7-3.5' Moist, gray, silty, SAND, with brick, yellow paint solids
					5-10	30		5-7.5' Wet to sat, dark gray, F-M SAND
PP33-5	5-6'	52.0	5	SLO/NS			1215	uniform
PP33-7.5	6.5-7.5	0.0	7.5	NO/NS			1220	
					10-15	60		10-15' Sat, dark gray, F-M SAND
PP33-10	10-11'	1.8	10	NO/NS			1225	fine organics @ 12', grades finer @ 14.5'
PP33-12.5	12-13'	2.6	12	NO/NS			1230	
PP33-15	14-15	1.2	14	NO/NS			1235	
NOTE: Saturated @ 7.5'								
Completed boring backfilled with granular bentonite								



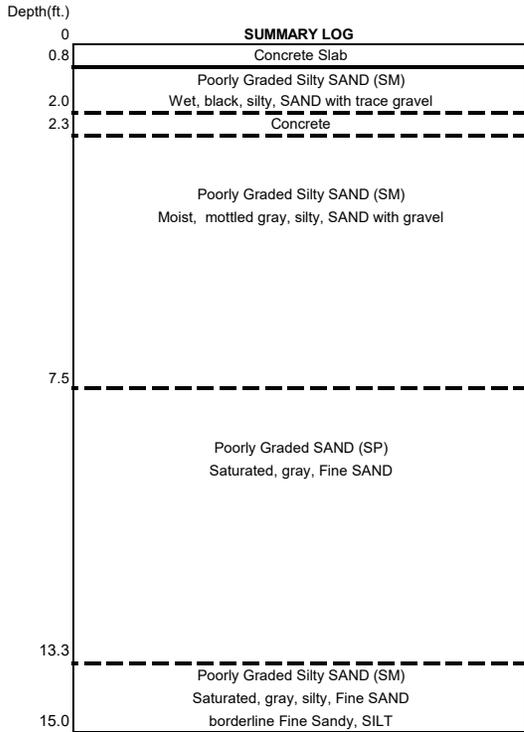
(Bottom of Boring)
NOTE: The summary log is an interpretation based on samples, drill action and interpolation.
Variations between what is shown and actual conditions should be anticipated.

- Abbreviations:** F - fine
M - medium
Sat. - saturated
Mot. - mottled
NS - No sheen
LS - Light sheen
MS - Medium sheen
HS - Heavy sheen
NO - No odor
SLO - Slight odor
MO - Moderate odor
SO - Strong odor

PP34

BORING - DESCRIPTION OF SAMPLES & DATA

Field Rep: DG Cooper				Location: N200282 E1270070 (NAD83)				
Drilling Co.: Cascade				Elevation (Ft.):		Ground Surface: Concrete Slab		
Driller: Tim				Date Completed: 10/27/20				
Drill Type: Geoprobe 7822DT				Weather: Cloudy 50F				
Size/Type Casing: 2" Rod				Hammer Type: Direct push		Sampler Type: 1.5" dia. X 60" Macro-core w/ acrylic liner		
Soil Sample No.	Sample Interval	PID (ppm)	Depth (Ft.)	Odor/Sheen	Spl Depth (Ft.) From - To	Spl length inches	Time	Sample Description
					0-5	42		0-0.5' Concrete
								0.5-2.0' Wet, black, silty, SAND with trace gravel
PP34-2	1-2'	15	1	SLO/NS			0830	2.0-2.3' Concrete
								2.3-3.5' Wet, mot gray, silty, SAND, with gravel, wood
					5-10	30		5-7.5' Wet to sat, mot gray, silty, SAND with some gravel
PP34-5	5-6'	1.1	5	NO/NS			0835	
PP34-7.5	6.5-7.5	3.4	7.5	NO/NS			0840	
					10-15	60		10-13.3' Sat, dark gray, F SAND
PP34-10	10-11'	0.4	10	NO/NS			0845	13.3-15.0' Sat, gray, silty, F SAND or fine sandy SILT
PP34-12.5	12-13'	51.0	12	NO/NS			0850	Sulfurous odor
PP34-15	14-15	9.9	14	NO/NS			0855	
NOTE: Saturated @ 7.5'								
Completed boring backfilled with granular bentonite								



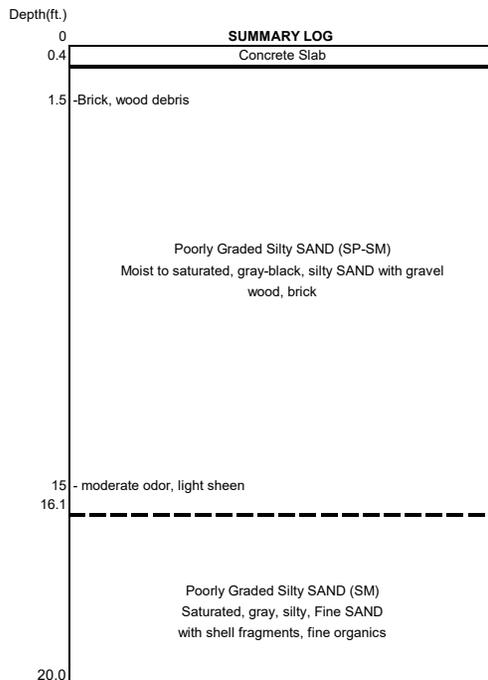
(Bottom of Boring)
NOTE: The summary log is an interpretation based on samples, drill action and interpolation.
Variations between what is shown and actual conditions should be anticipated.

- Abbreviations:** F - fine
M - medium
Sat. - saturated
Mot. - mottled
NS - No sheen
LS - Light sheen
MS - Medium sheen
HS-Heavy sheen
NO - No odor
SLO - Slight odor
MO - Moderate odor
SO - Strong odor

PP35

BORING - DESCRIPTION OF SAMPLES & DATA

Field Rep: DG Cooper				Location: N200311 E1270070 (NAD83)				
Drilling Co.: Cascade				Elevation (Ft.):				
Driller: Tim				Ground Surface: Concrete Slab				
Drill Type: Geoprobe 7822DT				Date Completed: 10/26/20				
Size/Type Casing: 2" Rod				Weather: Cloudy 50F				
				Hammer Type: Direct push				
				Sampler Type: 1.5" dia. X 60" Macro-core w/ acrylic liner				
Soil Sample No.	Sample Interval	PID (ppm)	Depth (Ft.)	Odor/Sheen	Spl Depth (Ft.) From - To	Spl length inches	Time	Sample Description
					0-5	24		0-0.7' Concrete
								0.7-0.9' gravel base
PP35-2	1.7-2.0'	1	2.5	NO/NS			1515	0.9'-1.3' Damp, orange, SAND - decomposed fire brick
								1.3-1.7' Wood
								1.7-2.0' Moist, black, silty, SAND with gravel
					5-10	42		5.0-7.0' Wet, mot gray, silty, SAND with gravel, wood debris
PP35-5	5-6'	0.3	5	NO/NS			1520	7.0-8.5' Solid Wood core
					10-15	36		10-13.0' Sat, gray, silty, SAND with trace gravel
PP35-10	10-11'	0.4	10	NO/NS			1525	
PP35-12.5	12-13'	2.5	12.5	NO/NS			1530	
					15-20	60		15-16.1' Sat, black, silty, SAND with trace wood, resin, odor, sheen
PP35-15	15-16'	12.0	15	MO/LS			1535	16.1-16.8' Sat, black, silty, F SAND with shell fragments
PP35-17.5	17-18'	0.3	17	NO/NS			1540	16.8-20.0' Sat, gray, silty, F SAND with fine organics
PP35-20	19-20'	0.3	19	NO/NS			1545	
NOTE: Completed boring backfilled with granular bentonite								



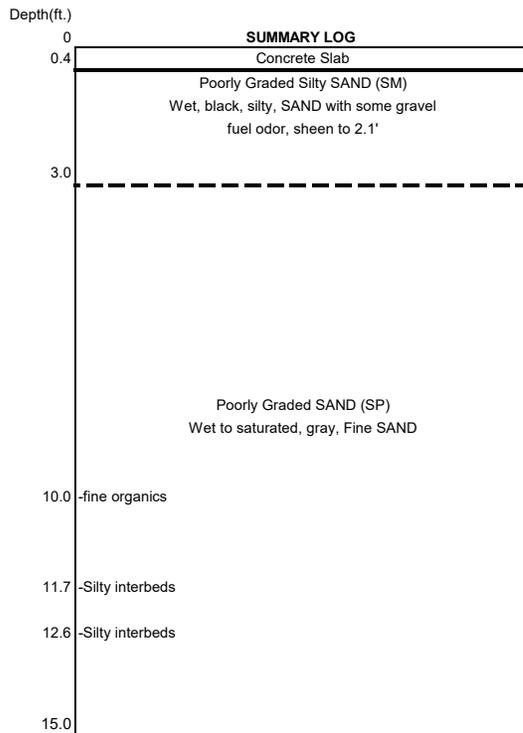
(Bottom of Boring)
NOTE: The summary log is an interpretation based on samples, drill action and interpolation.
Variations between what is shown and actual conditions should be anticipated.

- Abbreviations:** F - fine
M - medium
Sat. - saturated
Mot. - mottled
NS - No sheen
LS - Light sheen
MS - Medium sheen
HS - Heavy sheen
NO - No odor
SLO - Slight odor
MO - Moderate odor
SO - Strong odor

BORING - DESCRIPTION OF SAMPLES & DATA

PP36

Field Rep: DG Cooper				Location: N200249 E1270067 (NAD83)				
Drilling Co.: Cascade				Elevation (Ft.):		Ground Surface: Concrete Slab		
Driller: Tim				Date Completed: 10/27/20				
Drill Type: Geoprobe 7822DT				Weather: Cloudy 55F				
Size/Type Casing: 2" Rod				Hammer Type: Direct push		Sampler Type: 1.5" dia. X 60" Macro-core w/ acrylic liner		
Soil Sample No.	Sample Interval	PID (ppm)	Depth (Ft.)	Odor/Sheen	Spl Depth (Ft.) From - To	Spl length inches	Time	Sample Description
		94	1	MO/MS	0-5	36		0-0.4' Concrete
PP36-2	1-2'	7.2	2	MO/LS			1315	0.4-2.1' Wet, mot black, silty, SAND with some gravel fuel odor, sheen
		1.2	3	NO/NS				2.1-3.0' Moist, gray F SAND
					5-10	42		5-8 .5' Wet to sat, gray, F SAND
PP36-5	5-6'	1.0	5	NO/NS			1320	organics @ 5.5'
PP36-7.5	7-8'	1.1	7.5	NO/NS			1325	
					10-15	60		10-15' Sat, gray, F SAND
PP36-10	10-11'	0.8	10	NO/NS			1330	fine organics @ 10-11.5'
PP36-12.5	12-13'	0.6	12	NO/NS			1335	silty interbeds @ 11.7-11.9' and 12.6-13.0'
PP36-15	14-15	0.5	14	NO/NS			1340	
NOTE: Saturated @ 7.0'								Completed boring backfilled with granular bentonite



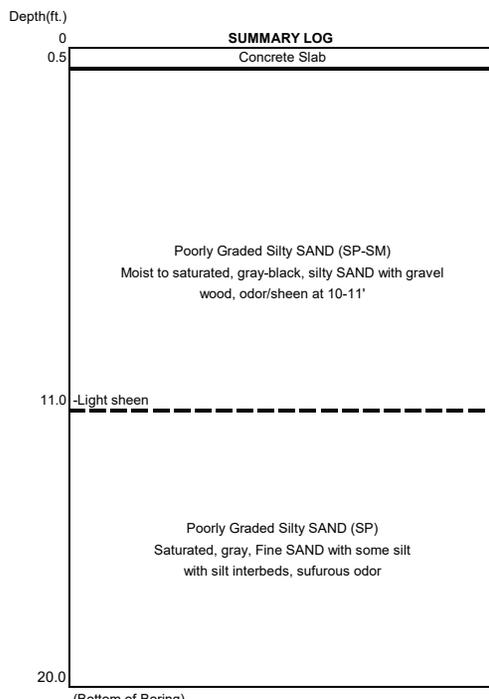
NOTE: The summary log is an interpretation based on samples, drill action and interpolation. Variations between what is shown and actual conditions should be anticipated.

- Abbreviations:** F - fine
M - medium
Sat. - saturated
Mot. - mottled
NS - No sheen
LS - Light sheen
MS - Medium sheen
HS - Heavy sheen
NO - No odor
SLO - Slight odor
MO - Moderate odor
SO - Strong odor

PP37

BORING - DESCRIPTION OF SAMPLES & DATA

Field Rep: DG Cooper				Location: N200288 E1270088 (NAD83)				
Drilling Co.: Cascade				Elevation (Ft.):				
Driller: Tim				Ground Surface: Concrete Slab				
Drill Type: Geoprobe 7822DT				Date Completed: 10/26/20				
Size/Type Casing: 2" Rod				Weather: Cloudy 50F				
				Hammer Type: Direct push				
				Sampler Type: 1.5" dia. X 60" Macro-core w/ acrylic liner				
Soil Sample No.	Sample Interval	PID (ppm)	Depth (Ft.)	Odor/Sheen	Spl Depth (Ft.) From - To	Spl length inches	Time	Sample Description
					0-5	30		0-0.5' Concrete
								0.5-2.5' Wet, mot gray-black, silty, SAND, with some gravel, wood
PP37-2.5	1.5-2.5'	1.1	1	NO/NS			1320	
					5-10	30		5.0-7.5' Wet, mot gray, silty, SAND with some gravel, wood debris
PP37-5	5-6'	0.7	5	SLO/NS			1325	
PP37-7.5	6.5-7.5'	3.6	7	NO/NS			1330	
					10-15	60		10-11.0' Sat, gray, silty, SAND with some gravel
PP37-10	10-11'	0.4	10.8	MO/LS			1335	light sheen, green silt @ 10.5'
PP37-12.5	12-13'	2.5	1.2	SLO/LS			1340	11.0-15.0' Wet, dark gray, F SAND, with silt interbeds
								sulfurous odor
					15-20	60		15-16.5' Sat, dark gray, F SAND, with some silt, scattered orgaincs
PP37-15	15-16'	4.4	15	SLO/NS			1345	16.5-20.0' Sat, gray, F SAND
PP37-17.5	17-18'	9.1	17	SLO/NS			1350	sulfurous odor
PP37-20	19-20'	0.6	19	NO/NS			1355	
NOTE: Completed boring backfilled with granular bentonite								



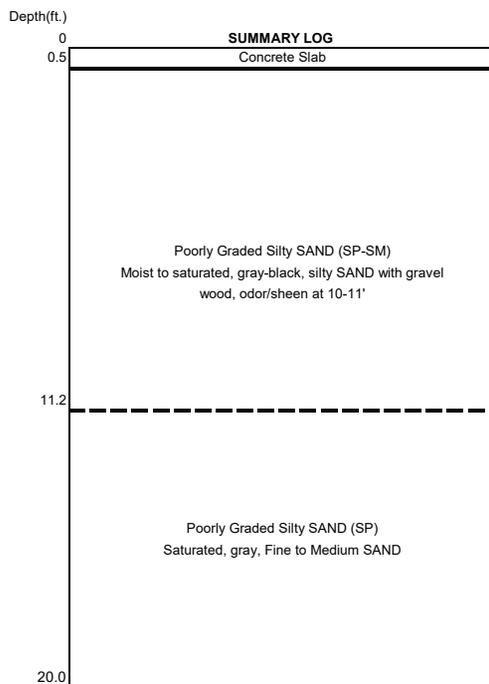
(Bottom of Boring)
NOTE: The summary log is an interpretation based on samples, drill action and interpolation.
Variations between what is shown and actual conditions should be anticipated.

- Abbreviations:** F - fine
M - medium
Sat. - saturated
Mot. - mottled
NS - No sheen
LS - Light sheen
MS - Medium sheen
HS - Heavy sheen
NO - No odor
SLO - Slight odor
MO - Moderate odor
SO - Strong odor

PP38

BORING - DESCRIPTION OF SAMPLES & DATA

Field Rep: DG Cooper				Location: N200306 E1270123 (NAD83)				
Drilling Co.: Cascade				Elevation (Ft.):				
Driller: Tim				Ground Surface: Concrete Slab				
Drill Type: Geoprobe 7822DT				Date Completed: 10/26/20				
Size/Type Casing: 2" Rod				Weather: Cloudy 50F				
				Hammer Type: Direct push				
				Sampler Type: 1.5" dia. X 60" Macro-core w/ acrylic liner				
Soil Sample No.	Sample Interval	PID (ppm)	Depth (Ft.)	Odor/Sheen	Spl Depth (Ft.) From - To	Spl length inches	Time	Sample Description
					0-5	42		0-0.5' Concrete
								0.5-1.0' Gravel base
PP38-2.5	1.5-2.5'	33	2	MO/LS			1000	1.0-2.8' Wet, mot brown, silty, SAND with gravel
								rubber gaskets, yellow paint chip, fuel odor, sheen
								2.8-3.5' cored through wood w/creosote
					5-10	36		5.0-6.0' Wet, mot brown, gravelly, SAND, with silt, wood
PP38-5	5-6'	6.6	5	SLO/NS			1005	6.0-8.0' Cored Wood ,Lumber
					10-15	45		10-11.2' Sat, gray, silty, F SAND with trace gravel, wood debris
PP38-10	10-11'	0.6	10	NO/NS			1010	11.2-13.8' Sat, brown, silty, F SAND with trace gravel
PP38-12.5	12.5-13.5'	0.2	12	NO/NS			1020	
							1030	
					15-20	24		15.0-16.0' Sat, brown, silty, F SAND with trace gravel
PP38-15	16-17'	0.5	15	NO/NS			1040	16.0-17.0' Sat, dark gray, F-M SAND
		0.7	16	NO/NS				sulfurous odor
NOTE: Completed boring backfilled with granular bentonite								



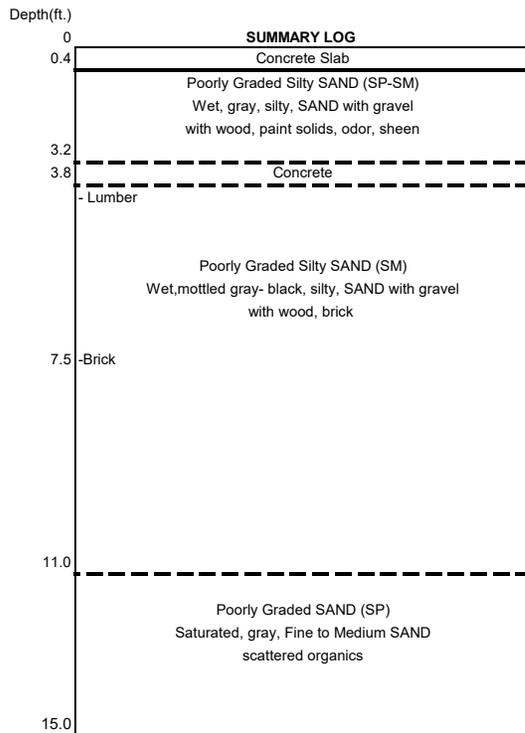
(Bottom of Boring)
NOTE: The summary log is an interpretation based on samples, drill action and interpolation.
Variations between what is shown and actual conditions should be anticipated.

- Abbreviations:** F - fine
M - medium
Sat. - saturated
Mot. - mottled
NS - No sheen
LS - Light sheen
MS - Medium sheen
HS - Heavy sheen
NO - No odor
SLO - Slight odor
MO - Moderate odor
SO - Strong odor

BORING - DESCRIPTION OF SAMPLES & DATA

PP39

Field Rep: DG Cooper				Location: N200277 E1270112 (NAD83)				
Drilling Co.: Cascade				Elevation (Ft.):		Ground Surface: Concrete Slab		
Driller: Tim				Date Completed: 10/26/20				
Drill Type: Geoprobe 7822DT				Weather: Cloudy 55F				
Size/Type Casing: 2" Rod				Hammer Type: Direct push		Sampler Type: 1.5" dia. X 60" Macro-core w/ acrylic liner		
Soil Sample No.	Sample Interval	PID (ppm)	Depth (Ft.)	Odor/Sheen	Spl Depth (Ft.) From - To	Spl length inches	Time	Sample Description
					0-5	48		0-0.5' Concrete
								0.5-1.0' Wet, gray, gravelly, SAND
PP39-2.5	2-3'	344.0	2	SO/LS			1220	1.0-3.2' Wet, dark gray, silty, SAND, with gravel, wood, paint solids
								3.2-3.8' Concrete
								3.8-4.0' Wood, Lumber
					5-10	42		5-8.5' Wet, mot gray-brown, silty, SAND, with gravelly sand interbeds
PP39-5	5-6'	3.5	5	NO/NS			1225	wood, brick, tar paper, grades finer below 7.5'
PP39-7.5	7-8'	0.6	7.5	SLO/NS			1230	
					10-15	48		10.0-11.0' Sat, black, gravelly, SAND with silt, wood
PP39-10	10-11'	1.9	10	SLO/NS			1235	11.0-14.0' Sat, gray, F-M SAND
PP39-12.5	12-13'	0.0	12	NO/NS			1240	with scattered organics
PP39-14	13-14'	0.0	14	NO/NS			1245	
NOTE: Saturated @ 7.0'								
Completed boring backfilled with granular bentonite								



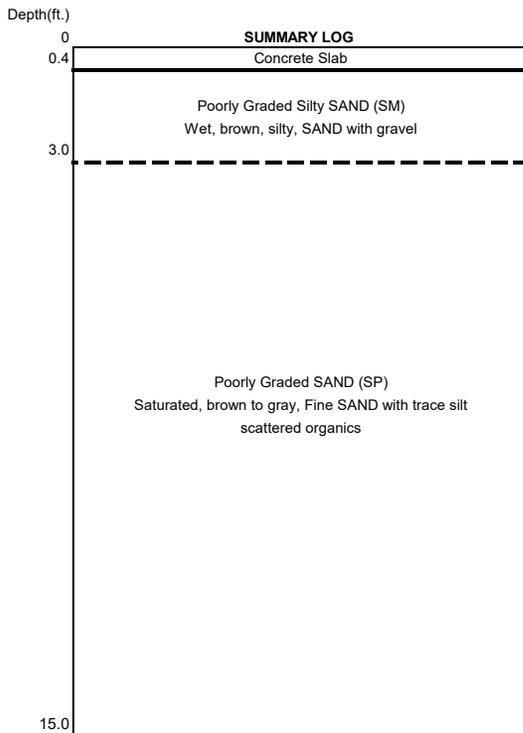
(Bottom of Boring)
NOTE: The summary log is an interpretation based on samples, drill action and interpolation.
Variations between what is shown and actual conditions should be anticipated.

- Abbreviations:** F - fine
M - medium
Sat. - saturated
Mot. - mottled
NS - No sheen
LS - Light sheen
MS - Medium sheen
HS - Heavy sheen
NO - No odor
SLO - Slight odor
MO - Moderate odor
SO - Strong odor

BORING - DESCRIPTION OF SAMPLES & DATA

PP40

Field Rep: DG Cooper			Location: N200259 E1270124 (NAD83)					
Drilling Co.: Cascade			Elevation (Ft.):		Ground Surface: Concrete Slab			
Driller: Tim			Date Completed: 10/27/20					
Drill Type: Geoprobe 7822DT			Weather: Cloudy 50F					
Size/Type Casing: 2" Rod			Hammer Type: Direct push		Sampler Type: 1.5" dia. X 60" Macro-core w/ acrylic liner			
Soil Sample No.	Sample Interval	PID (ppm)	Depth (Ft.)	Odor/Sheen	Spl Depth (Ft.) From - To	Spl length inches	Time	Sample Description
					0-5	48		0-0.5' Concrete
								0.5-1.5' Moist, mot brown, silty SAND with some gravel
PP40-2.5	2-3'	0.0	2	NO/NS			0920	1.5-3.0' Moist, dark brown, silty, SAND, with white flecs
								3.0-4.0' Moist, brown, F SAND with trace silt
					5-10	40		5-8.5' Wet to sat, brown, F SAND, with some silt
PP40-5	5-6'	0.0	5	NO/NS			0925	orange oxidation @ 7.5'
PP40-7.5	7-8'	0.0	7.5	NO/NS			0930	
					10-15	60		10.0-15.0' Sat, gray, F SAND with trace silt
PP40-10	10-11'	0.0	10	NO/NS			0935	uniform
PP40-12.5	12-13'	0.0	12	NO/NS			0940	
PP40-15	14-15'	0.0	14	NO/NS			0945	
NOTE: Saturated @ 7.0'								
Completed boring backfilled with granular bentonite								



(Bottom of Boring)

NOTE: The summary log is an interpretation based on samples, drill action and interpolation.

Variations between what is shown and actual conditions should be anticipated.

- Abbreviations:** F - fine
M - medium
Sat. - saturated
Mot. - mottled
NS - No sheen
LS - Light sheen
MS - Medium sheen
HS-Heavy sheen
NO - No odor
SLO - Slight odor
MO - Moderate odor
SO - Strong odor

Key to Exploration Logs

Sample Descriptions

Classification of soils in this report is based on visual field and laboratory observations which include density/consistency, moisture condition, grain size, and plasticity estimates and should not be construed to imply field nor laboratory testing unless presented herein. Visual-manual classification methods of ASTM D 2488 were used as an identification guide.

Soil descriptions consist of the following:

Density/consistency, moisture, color, minor constituents, MAJOR CONSTITUENT, additional remarks.

Density/Consistency

Soil density/consistency in borings is related primarily to the Standard Penetration Resistance. Soil density/consistency in test pits is estimated based on visual observation and is presented parenthetically on the test pit logs.

SAND or GRAVEL	Standard Penetration Resistance in Blows/Foot	SILT or CLAY	Standard Penetration Resistance in Blows/Foot	Approximate Shear Strength in TSF
Density		Consistency		
Very loose	0 - 4	Very soft	0 - 2	<0.125
Loose	4 - 10	Soft	2 - 4	0.125 - 0.25
Medium dense	10 - 30	Medium stiff	4 - 8	0.25 - 0.5
Dense	30 - 50	Stiff	8 - 15	0.5 - 1.0
Very dense	>50	Very stiff	15 - 30	1.0 - 2.0
		Hard	>30	>2.0

Moisture

Dry	Little perceptible moisture
Damp	Some perceptible moisture, probably below optimum
Moist	Probably near optimum moisture content
Wet	Much perceptible moisture, probably above optimum

Minor Constituents

Minor Constituents	Estimated Percentage
Not identified in description	0 - 5
Slightly (clayey, silty, etc.)	5 - 12
Clayey, silty, sandy, gravelly	12 - 30
Very (clayey, silty, etc.)	30 - 50

Legends

Sampling

BORING SAMPLES

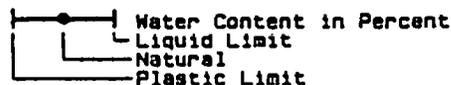
-  Split Spoon
-  Shelby Tube
-  Cuttings
-  Core Run
- * No Sample Recovery
- P Tube Pushed, Not Driven

TEST PIT SAMPLES

-  Grab (Jar)
-  Bag
-  Shelby Tube

Test Symbols

- GS Grain Size Classification
- CN Consolidation
- TUU Triaxial Unconsolidated Undrained
- TCU Triaxial Consolidated Undrained
- TCD Triaxial Consolidated Drained
- GU Unconfined Compression
- DS Direct Shear
- K Permeability
- PP Pocket Penetrometer
- TV Torvane
- CBR California Bearing Ratio
- MD Moisture Density Relationship
- AL Atterberg Limits

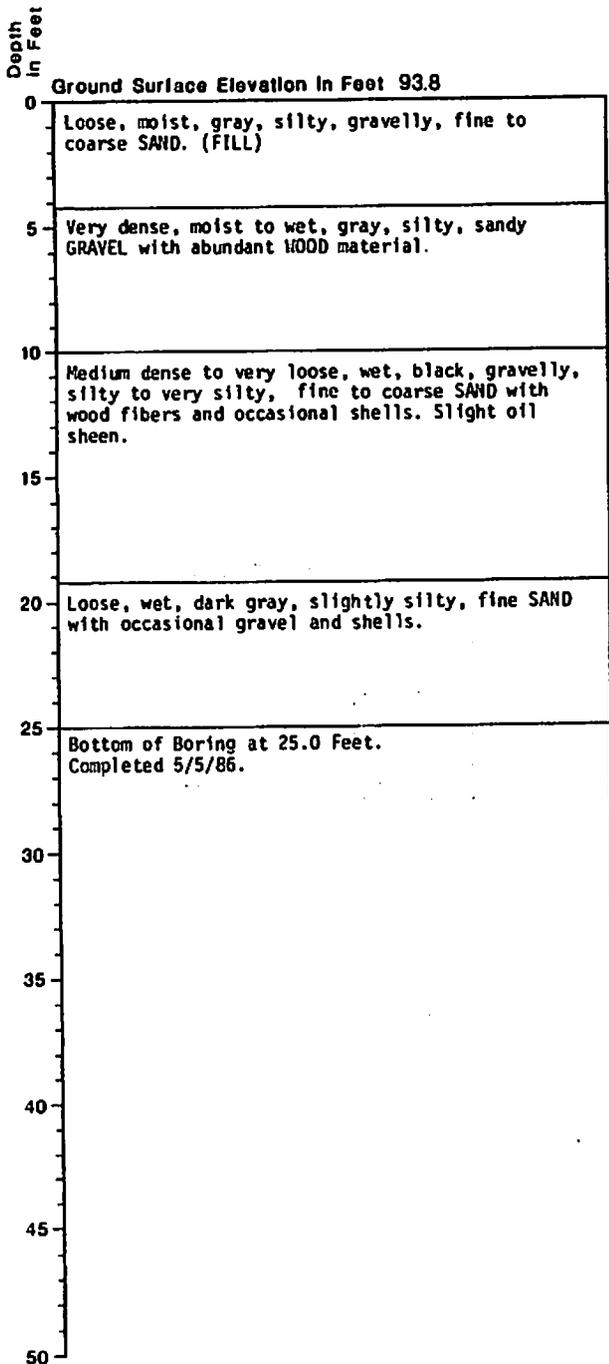


Ground Water Observations

-  Surface Seal
-  Ground Water Level on Date (ATD) At Time of Drilling
-  Observation Well Tip or Slotted Section
-  Ground Water Seepage (Test Pits)

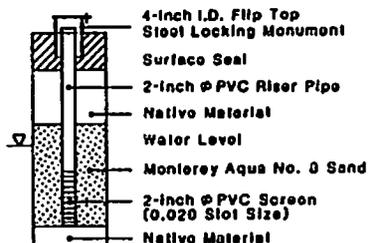
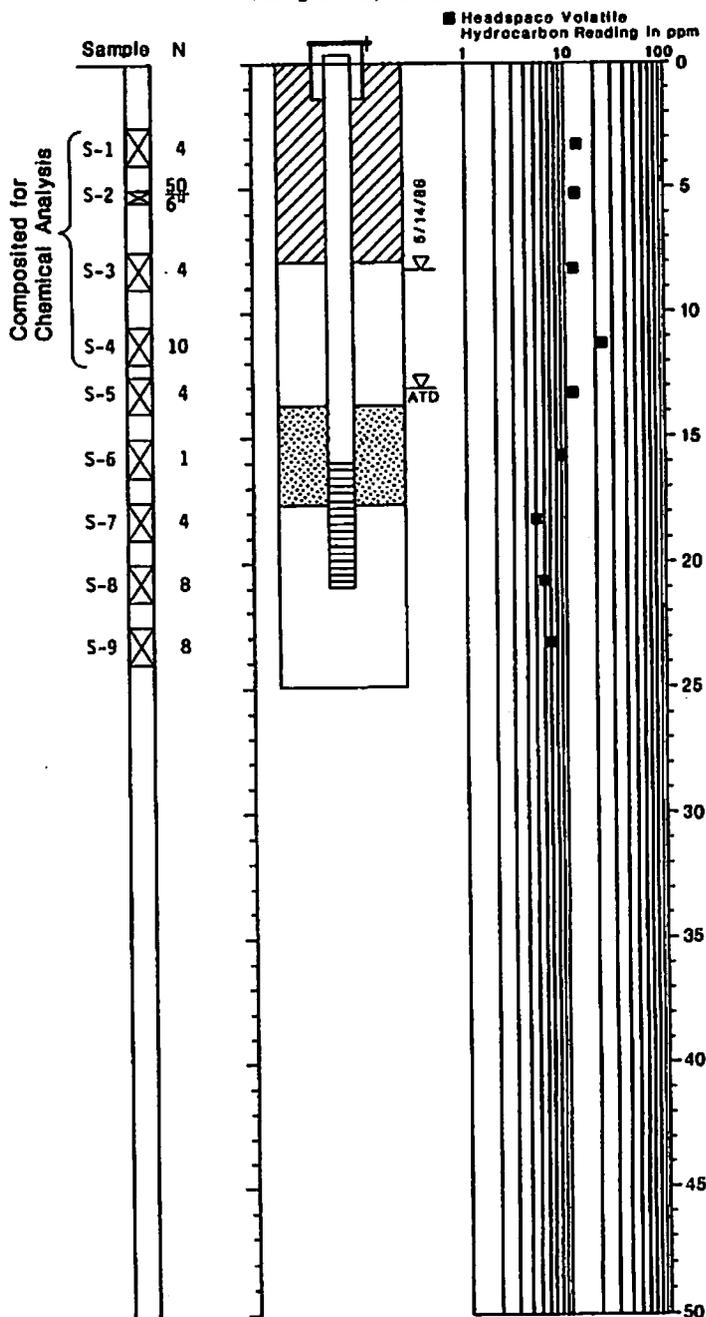
Boring Log and Construction Data for Well B-1

Geologic Log



Well Design

Top Casing Relative Elevation in Feet 95.3 (B-3=100.0)
Casing Stickup in Feet 1.5



NOTES:

- Soil descriptions are interpretive and actual changes may be gradual.
- Water Level is for date indicated and may vary with time of year.
ATD: At time of drilling
- Headspace Volatile Hydrocarbon Concentration is measured in jar samples using an H-Nu PI-101 Photoionization Meter with a 10.2 eV Lamp.

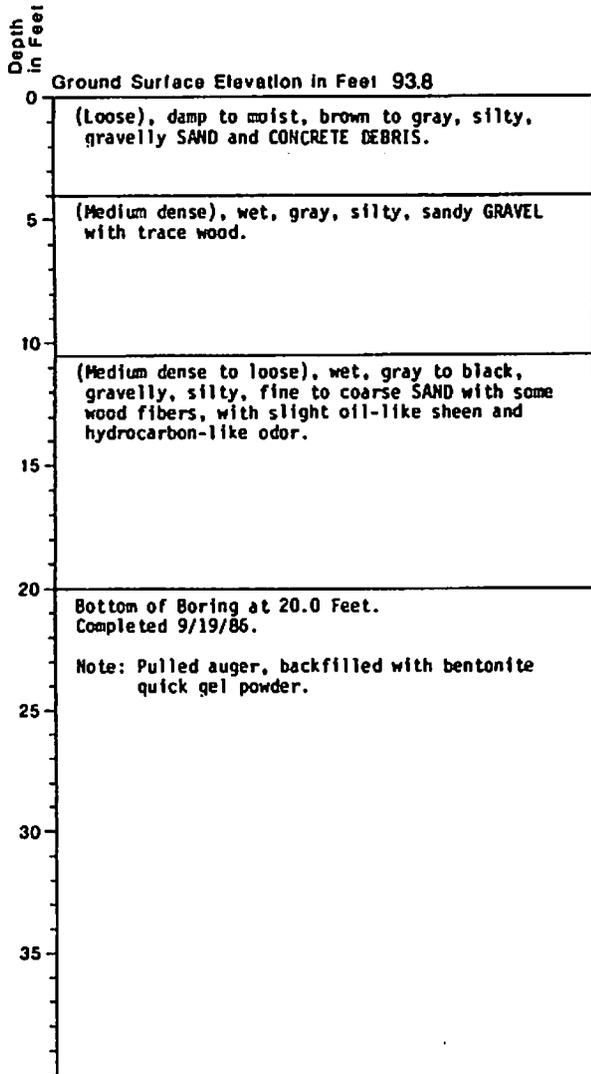
- ☒ 2-inch O.D. Split Spoon Sample Driven by 140-lb. Hammer 30-Inch Fall
- N Standard Penetration Resistance, Blows per Foot

J-1659 May 1986
HART-CROWSER & associates, Inc.
Figure A-2

Boring Log and Construction Data for Well B-1A

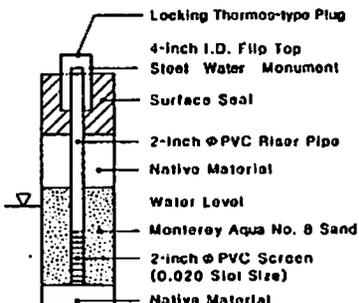
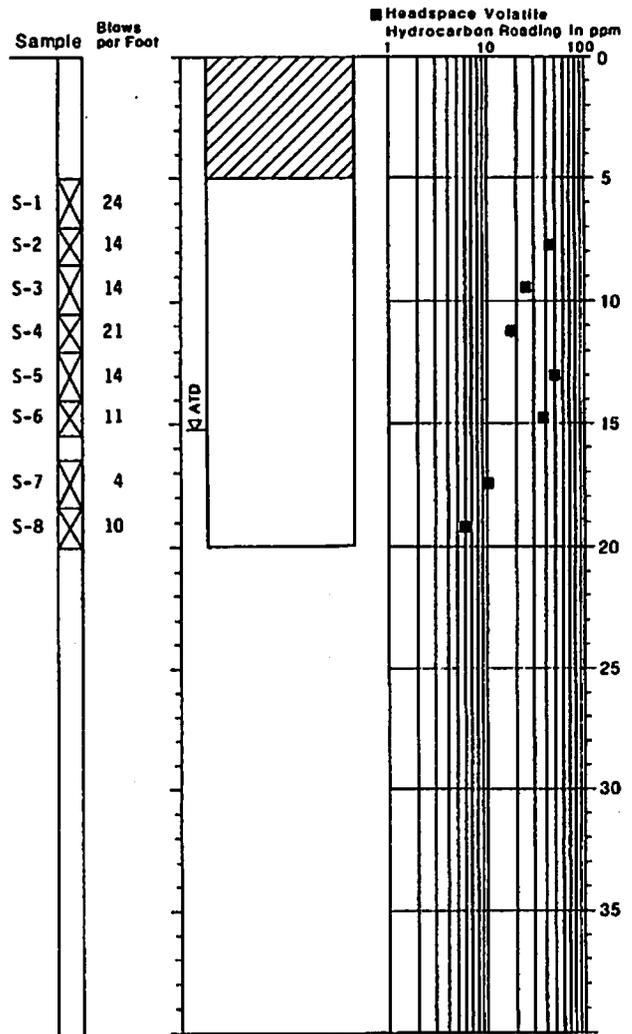
HC-31A

Geologic Log



Well Design

Top Casing Relative Elevation in Feet
Casing Stickup in Feet



NOTES:

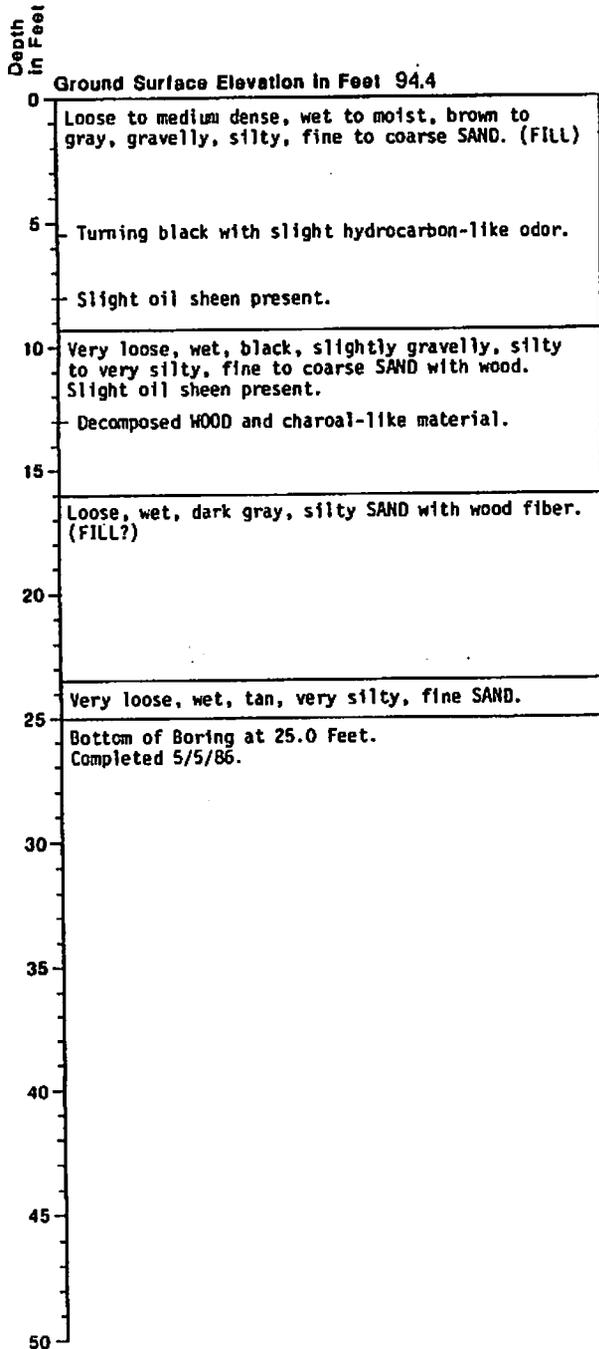
- Soil descriptions are interpretive and actual changes may be gradual.
- Water Level is for date indicated and may vary with time of year.
ATD: At time of drilling
- Headspace Volatile Hydrocarbon Concentration as measured in jar samples using an H-Nu PI-101 Photolization Meter with a 10.2 eV Lamp.

2-1/2 inch I.D. Split Spoon Sample Driven by 140-lb. Hammer, 30-inch Fall

Boring Log and Construction Data for Well B-2

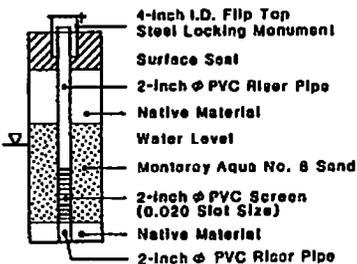
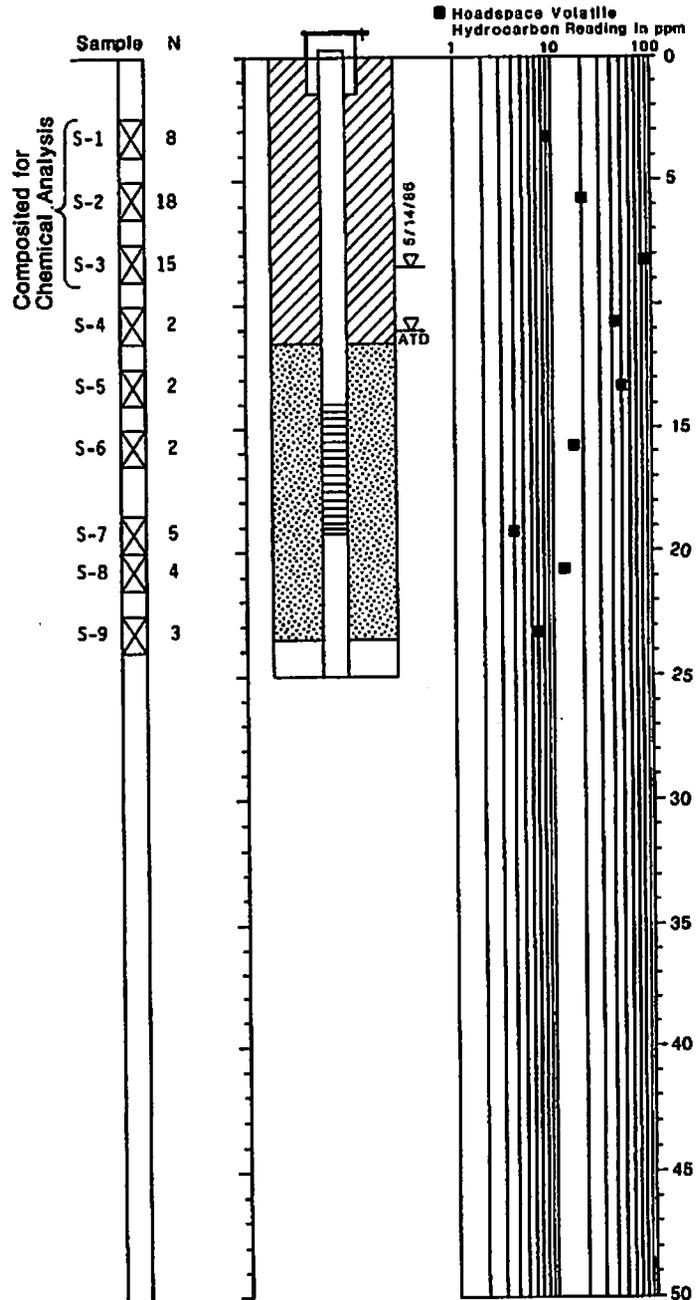
HC-32

Geologic Log



Well Design

Top Casing Relative Elevation in Feet 95.4 (B-3=100.0)
Casing Stickup in Feet 1.0



NOTES:

- Soil descriptions are interpretive and actual changes may be gradual.
- Water Level is for date indicated and may vary with time of year.
ATD: At time of drilling
- Headspace Volatile Hydrocarbon Concentration as measured in jar samples using an H-Nu PI-101 Photolization Meter with a 10.2 eV Lamp.

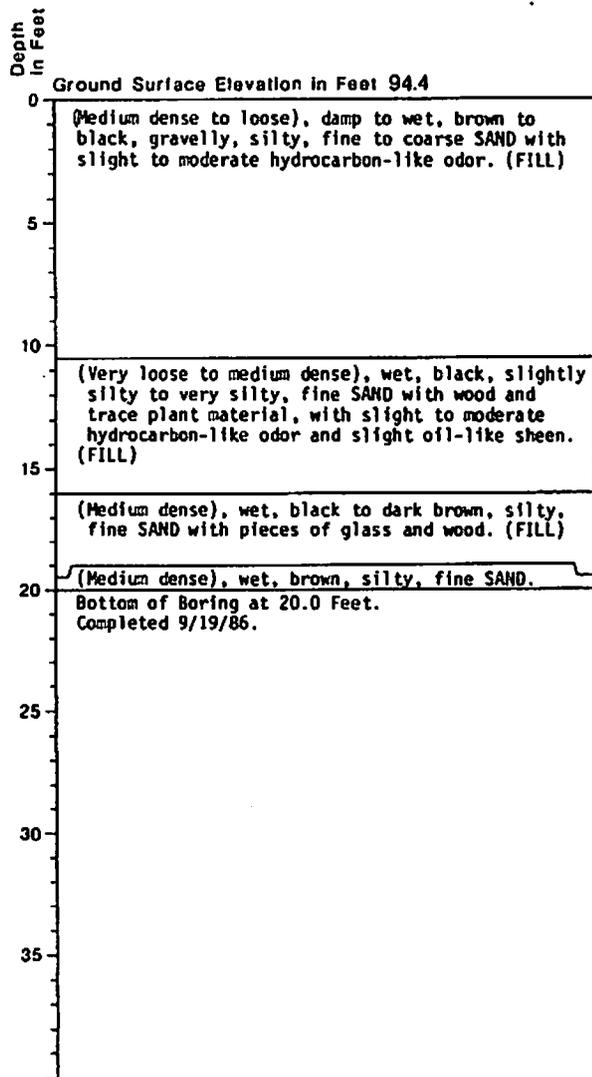
- ☒ 2-inch O.D. Split Spoon Sample Driven by 140-lb. Hammer 30-inch Fall
- N Standard Penetration Resistance, Blows per Foot

J-1659 May 1986
HART-CROWSER & associates, inc.
Figure A-4

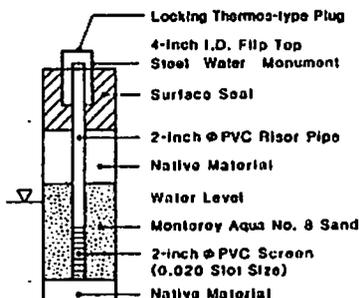
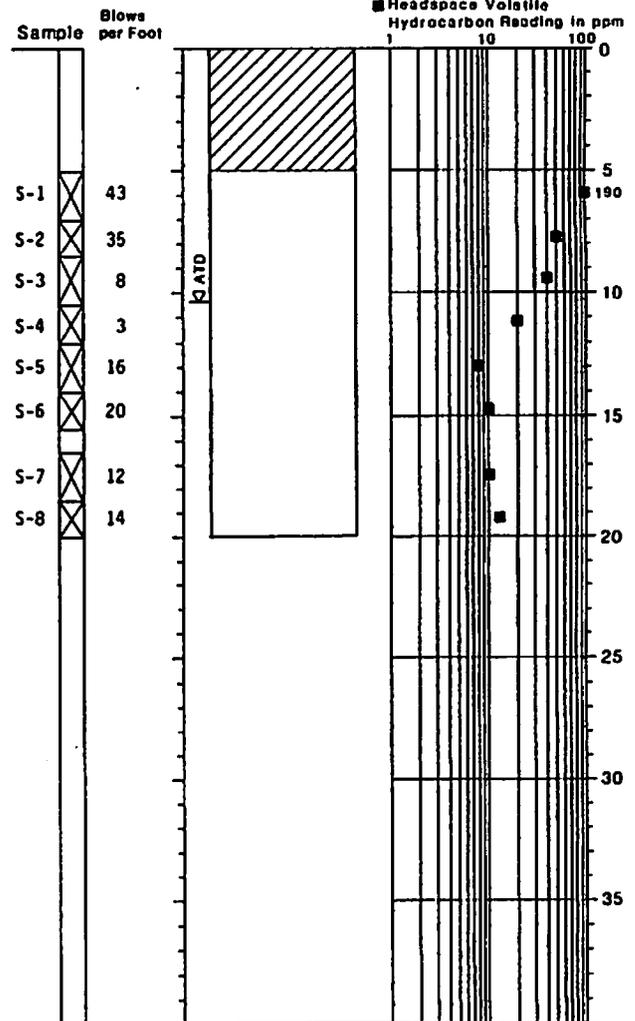
Boring Log and Construction Data for Well B-2A

HC-B2A

Geologic Log



Well Design
Top Casing Relative
Elevation in Feet
Casing Stickup In Feet



NOTES:

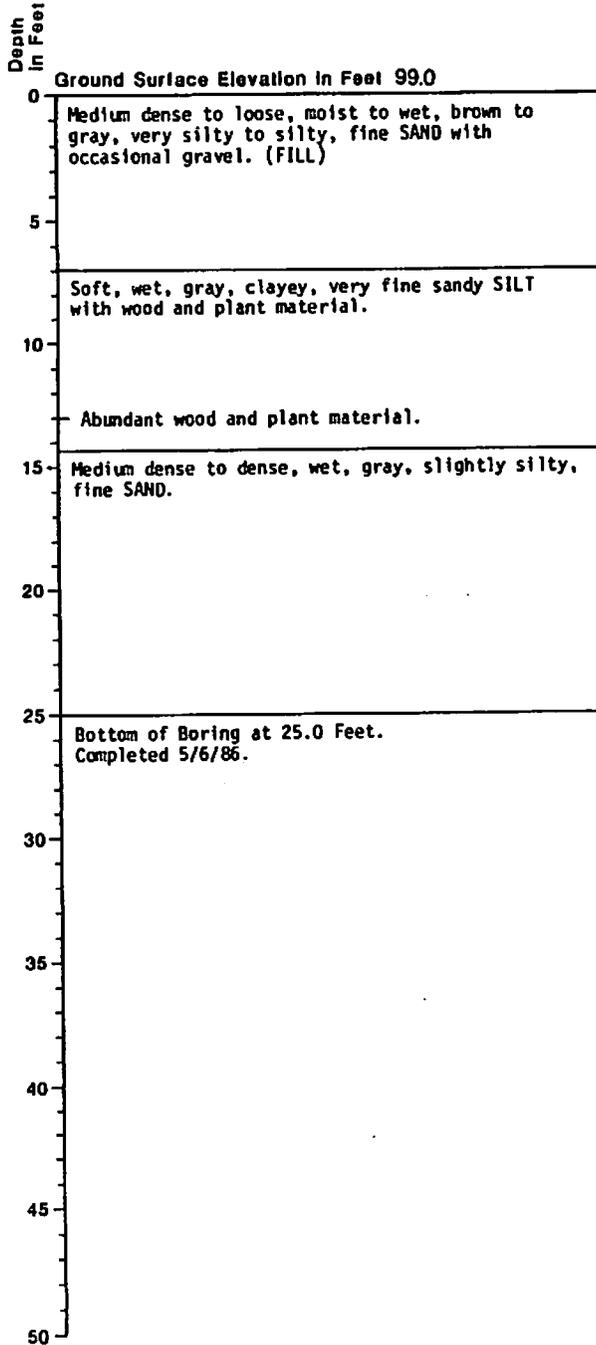
1. Soil descriptions are interpretive and actual changes may be gradual.
2. Water Level is for date indicated and may vary with time of year.
ATD: At time of drilling
3. Headspace Volatile Hydrocarbon Concentration as measured in jar samples using an H-Nu PI-101 Photoluminescence Meter with a 10.2 uV Lamp.

2-1/2 inch I.D. Split Spoon Sample
Driven by 140-lb. Hammer, 30-inch Fall

Boring Log and Construction Data for Well B-3

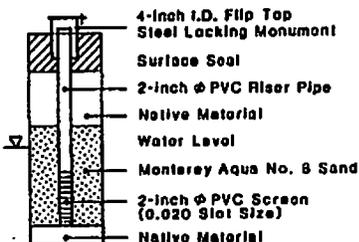
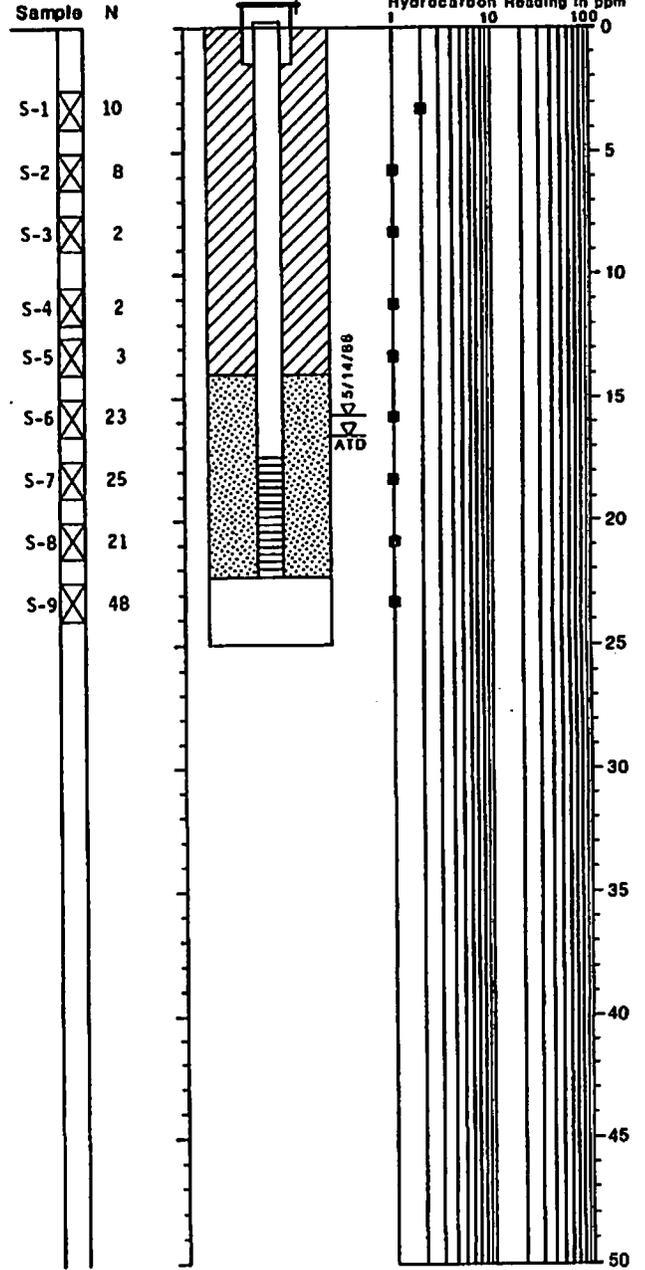
HC8-3

Geologic Log



Well Design

Top Casing Relative Elevation in Feet 100.0 (Arbitrary)
Casing Stickup in Feet 1.5



NOTES:

- Soil descriptions are interpretive and actual changes may be gradual.
- Water Level is for date indicated and may vary with time of year.
ATD: At time of drilling
- Headspace Volatile Hydrocarbon Concentration as measured in jar samples using an H-Nu PI-101 Photoionization Meter with a 10.2 eV Lamp.

\boxtimes 2-inch O.D. Split Spoon Sample Driven by 140-lb. Hammer 30-inch Fall

N Standard Penetration Resistance, Blows per Foot

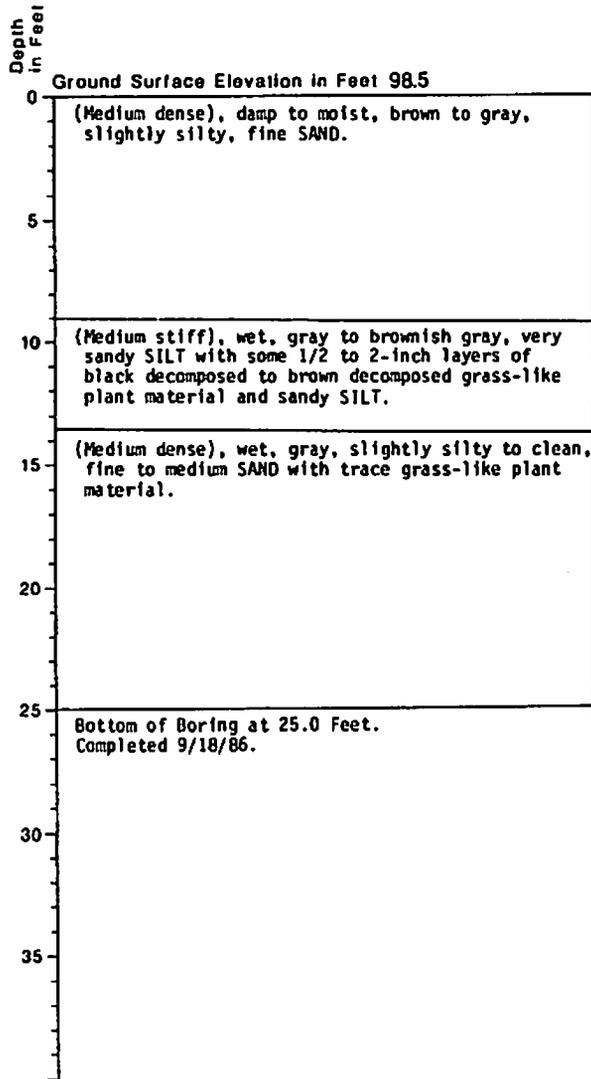
J-1659 May 1986
HART-CROWSER & associates, inc.

Figure A-6

Boring Log and Construction Data for Well B-4

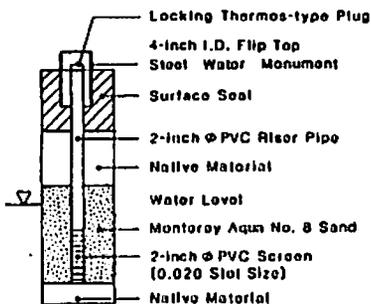
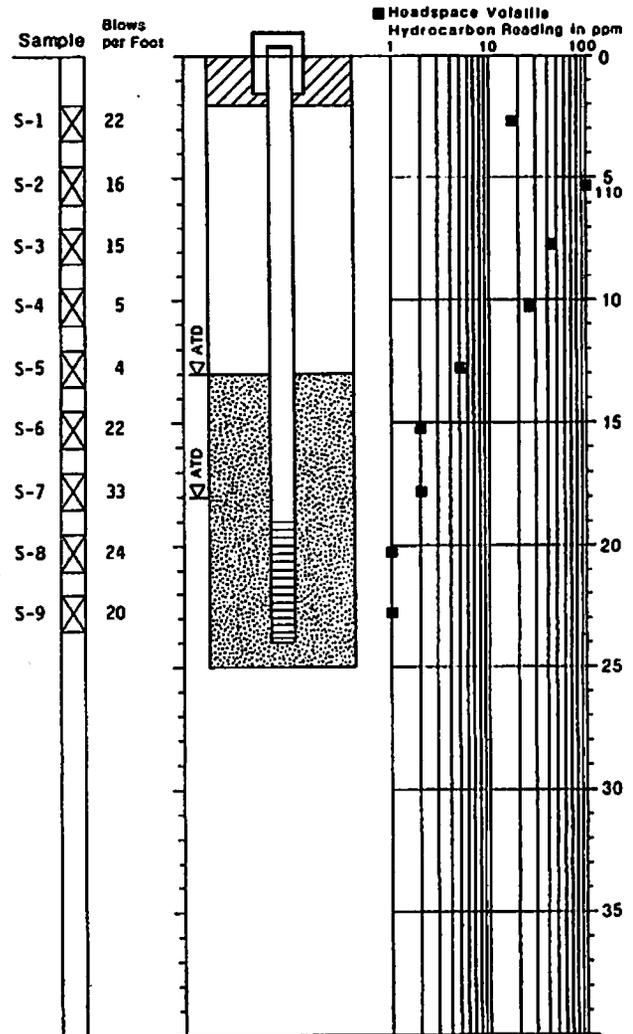
HC-34

Geologic Log



Well Design

Top Casing Relative Elevation in Feet 99.0
Casing Stickup in Feet 0.5



NOTES:

- Soil descriptions are interpretive and actual changes may be gradual.
- Water Level is for date indicated and may vary with time of year.
ATD: At time of drilling
- Headspace Volatile Hydrocarbon Concentration as measured in jar samples using an H-Nu PI-101 Photolization Meter with a 10.2 eV Lamp.

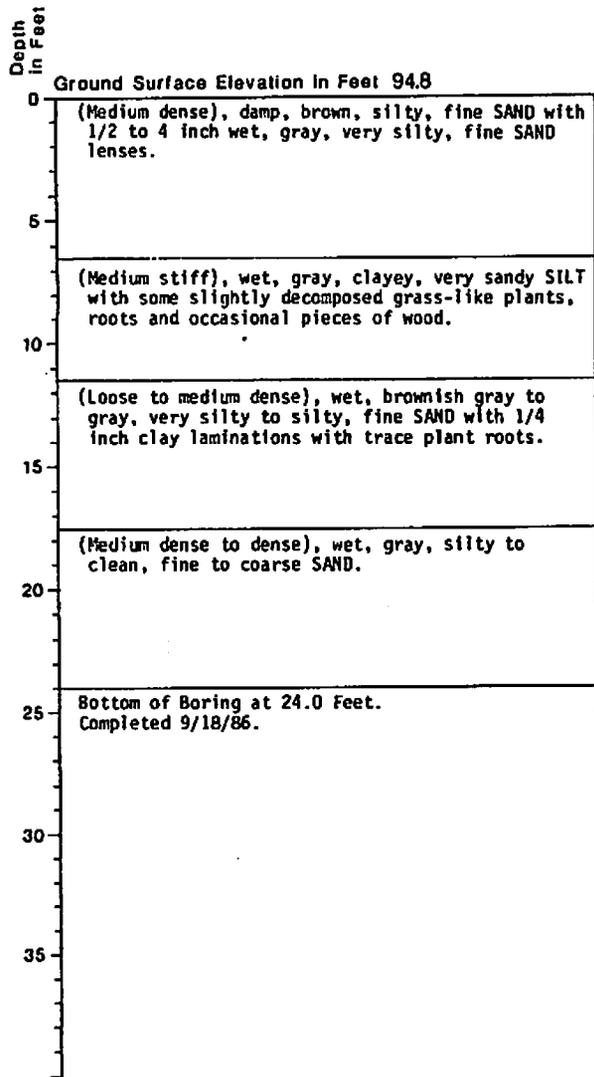


2-1/2 inch I.D. Split Spoon Sample Driven by 140-lb. Hammer, 30-inch Fall

Boring Log and Construction Data for Well B-5

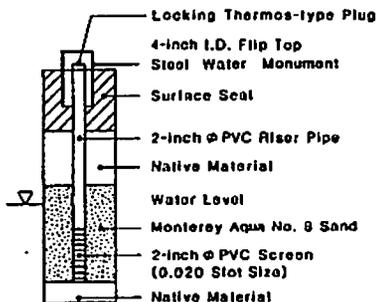
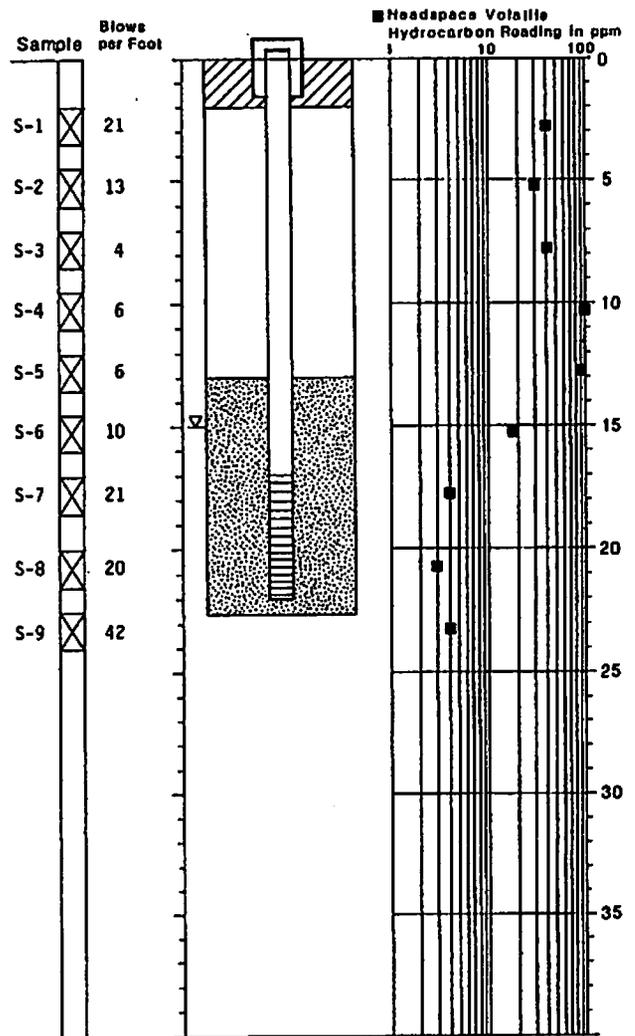
HCBS

Geologic Log



Well Design

Top Casing Relative Elevation in Feet 95.3
Casing Stickup in Feet 0.5



NOTES:

- Soil descriptions are interpretive and actual changes may be gradual.
- Water Level is for date indicated and may vary with time of year.
ATD: At time of drilling
- Headspace Volatile Hydrocarbon Concentration as measured in jar samples using an H-Nu PI-101 Photoionization Meter with a 10.2 eV Lamp.

2-1/2 inch I.D. Split Spoon Sample Driven by 140-lb. Hammer, 30-inch Fall



SOIL BORING LOG

BORING No: MW-1

SA-MW1

PAGE 1 of 3

PROJECT: EAA-2
 LOCATION: 7152 1st Ave S, Seattle, WA
 CLIENT: Department of Ecology
 DATE: 04/23/07
 LOGGED BY: Tina King

DRILLER: Cascade Drilling, Inc.
 DRILL METHOD: Concrete Core/Hollow-stem Auger
 SAMPLE METHOD: Split Spoon
 HOLE DIAMETER: 8.25 inches
 HOLE DEPTH: 25.5

WELL DIAMETER: 2-inch
 WELL DEPTH: 24 feet
 WELL CASING: 2-inch PVC, Schedule 40
 WELL SCREEN: 0.010-inch slot, 2-24 feet bgs
 FILTER PACK: 2-12 Colorado Silica Sand

CASING ELEVATION: 12.54' TOC 12.57' NGVD88

Analytical Sample Number	PID (ppm)	BLOWS/6"	Water Level	Sample Recovery Interval	DEPTH (ft.)	SOIL TYPE	LITHOLOGY / DESCRIPTION	Well Completion Details
					0-1.6	Concrete	16 inches of Concrete	<p>2-12 Colorado Silica Sand 2-inch, solid PVC casing 2-inch, 0.010 slot PVC screen Bentonite Steel Monument</p>
--	4.7	4			1.6-3.2	SM	Gray and brown silty fine to medium SAND with occasional coarse sand and fine gravel (dry, very loose), slight sheen, slight odor.	
		4			3.2-4.8			
		2			4.8-6.4			
MW-1-5	131	9			6.4-7.3	CL	Black silty CLAY with medium to coarse sand and fine gravel (moist, Stiff), heavy sheen, strong odor.	
		11			7.3-8.2			
		23			8.2-9.1			
--	202	14			9.1-10.5	ML	Grades to a moderate sheen.	
		20			10.5-11.9			
		29			11.9-13.3			
--	50.1	32			13.3-14.7	SM/ML	Gray silty fine SAND (moist, very dense), slight sheen, slight odor.	
		30			14.7-16.1			
		39			16.1-17.5			



SOIL BORING LOG

BORING No: MW-1

SA-MW1

PAGE 2 of 3

PROJECT: EAA-2
 LOCATION: 7152 1st Ave S, Seattle, WA
 CLIENT: Department of Ecology
 DATE: 04/23/07
 LOGGED BY: Tina King

DRILLER: Cascade Drilling, Inc.
 DRILL METHOD: Concrete Core/Hollow-stem Auger
 SAMPLE METHOD: Split Spoon
 HOLE DIAMETER: 8.25 inches
 HOLE DEPTH: 25.5

WELL DIAMETER: 2-inch
 WELL DEPTH: 24 feet
 WELL CASING: 2-inch PVC, Schedule 40
 WELL SCREEN: 0.010-inch slot, 2-24 feet bgs
 FILTER PACK: 2-12 Colorado Silica Sand

CASING ELEVATION: 12.54' TOC 12.57' NGVD88

Analytical Sample Number	PID (ppm)	BLOWS/6"	Water Level	Sample		DEPTH (ft.)	SOIL TYPE	LITHOLOGY / DESCRIPTION	Well Completion Details	
				Recovery	Interval					
MW-1-12.5	52.4	39	▽			12	SM/ML	Gray silty fine SAND (moist, very dense), slight sheen, slight odor.		
		50/ 5"				13		Gray fine sandy SILT, trace clay (wet, hard), slight sheen, slight odor.		
						14	ML			
--	50.8	22				15		As above, grading to no clay and increasing sand, no odor.		
		29				16				
		26				17				
--	2.6	30				18	SM	Dark gray silty fine SAND (moist, medium dense), no sheen, no odor.	2-12 Colorado Silica Sand	
						19				
--	6.5	27				20		Gray fine SAND with trace silt (wet, very dense), no sheen, no odor.		
		50/4"				21	SP			
						22				

2-inch, 0.010 slot PVC screen



SOIL BORING LOG

BORING No: MW-1

SA-MW1

PAGE 3 of 3

PROJECT: EAA-2
 LOCATION: 7152 1st Ave S, Seattle, WA
 CLIENT: Department of Ecology
 DATE: 04/23/07
 LOGGED BY: Tina King

DRILLER: Cascade Drilling, Inc.
 DRILL METHOD: Concrete Core/Hollow-stem Auger
 SAMPLE METHOD: Split Spoon
 HOLE DIAMETER: 8.25 inches
 HOLE DEPTH: 25.5

WELL DIAMETER: 2-inch
 WELL DEPTH: 24 feet
 WELL CASING: 2-inch PVC, Schedule 40
 WELL SCREEN: 0.010-inch slot, 2-24 feet bgs
 FILTER PACK: 2-12 Colorado Silica Sand

CASING ELEVATION: 12.54' TOC 12.57' NGVD88

Analytical Sample Number	PID (ppm)	BLOWS/6"	Water Level	Sample		DEPTH (ft.)	SOIL TYPE	LITHOLOGY / DESCRIPTION	Well Completion Details
				Recovery	Interval				
--	55.6	50/5"				23	SP	Gray fine SAND with trace silt (wet, very dense), no sheen, no odor.	
--	0	50/6"				25			
						26			
						27			
						28			
						29			
						30			
						31			
						32			
						33			



SOIL BORING LOG

BORING No: MW-2

SA-MW2

PAGE 1 of 3

PROJECT: EAA-2
 LOCATION: 7152 1st Ave S, Seattle, WA
 CLIENT: Department of Ecology
 DATE: 04/23/07
 LOGGED BY: Tina King

DRILLER: Cascade Drilling, Inc.
 DRILL METHOD: Concrete Core/Hollow-stem Auger
 SAMPLE METHOD: Split Spoon
 HOLE DIAMETER: 8.25 inches
 HOLE DEPTH: 26.5

WELL DIAMETER: 2-inch
 WELL DEPTH: 24 feet
 WELL CASING: 2-inch PVC, Schedule 40
 WELL SCREEN: 0.010-inch slot, 2-24 feet bgs
 FILTER PACK: 2-12 Colorado Silica Sand

CASING ELEVATION: 12.01' TOC 11.97' NGVD88

Analytical Sample Number	PID (ppm)	BLOWS/6"	Water Level	Sample Recovery Interval	DEPTH (ft.)	SOIL TYPE	LITHOLOGY / DESCRIPTION	Well Completion Details
						Con	5 inches of Concrete	
--	37.2	47			1			
		50/6"			2		Slight petroleum odor at 2 feet.	
					3		Black silty GRAVEL with sand (moist, very dense), slight sheen, slight odor.	
--	71.1	50/2"			4			
					5	GM	Same as above, grades to with wood debris, little sand and occasional cobbles (moist, very dense), heavy sheen, strong odor.	
					6			
MW-2-7.5	101	50/6"	▽		7			
					8		Dark brown and black silty GRAVEL: with shredded wood pieces and organics (wet, very dense), heavy sheen, strong odor.	
					9			
MW-2-10	45.1	11			10	SM	Dark Brown silty fine to coarse SAND with occasional fine gravel. Top 6 inches is a chunk of wood (wet, loose), heavy sheen, strong odor.	
		11			11			
		12			12			



SOIL BORING LOG

BORING No: MW-2

SA-MW2

PAGE 2 of 3

PROJECT: EAA-2
 LOCATION: 7152 1st Ave S, Seattle, WA
 CLIENT: Department of Ecology
 DATE: 04/23/07
 LOGGED BY: Tina King

DRILLER: Cascade Drilling, Inc.
 DRILL METHOD: Concrete Core/Hollow-stem Auger
 SAMPLE METHOD: Split Spoon
 HOLE DIAMETER: 8.25 inches
 HOLE DEPTH: 26.5

WELL DIAMETER: 2-inch
 WELL DEPTH: 24 feet
 WELL CASING: 2-inch PVC, Schedule 40
 WELL SCREEN: 0.010-inch slot, 2-24 feet bgs
 FILTER PACK: 2-12 Colorado Silica Sand

CASING ELEVATION: 12.01' TOC 11.97' NGVD88

Analytical Sample Number	PID (ppm)	BLOWS/6"	Water Level	Sample Recovery Interval	DEPTH (ft.)	SOIL TYPE	LITHOLOGY / DESCRIPTION	Well Completion Details	
--	102	12			12	SM	Black silty fine to coarse SAND with gravel and organics (wet, medium dense), slight sheen, slight odor.		
		12			13				
		17			14				
MW-2-15 FD-1-042407	50.8	8			15				As above, grading to (wet, loose), heavy sheen, strong odor.
		8			16				
		10			17				
--	212	8			18	CL	Black silty CLAY (wet/moist, stiff), no sheen, no odor.		
		9			19				
		14			20				
--	--	17			21	SM	Black silty fine SAND (wet, dense), no sheen, no odor.		
		20			22				
		22			22				



SOIL BORING LOG

BORING No: MW-2

SA-MW2

PAGE 3 of 3

PROJECT: EAA-2
 LOCATION: 7152 1st Ave S, Seattle, WA
 CLIENT: Department of Ecology
 DATE: 04/23/07
 LOGGED BY: Tina King

DRILLER: Cascade Drilling, Inc.
 DRILL METHOD: Concrete Core/Hollow-stem Auger
 SAMPLE METHOD: Split Spoon
 HOLE DIAMETER: 8.25 inches
 HOLE DEPTH: 26.5

WELL DIAMETER: 2-inch
 WELL DEPTH: 24 feet
 WELL CASING: 2-inch PVC, Schedule 40
 WELL SCREEN: 0.010-inch slot, 2-24 feet bgs
 FILTER PACK: 2-12 Colorado Silica Sand

CASING ELEVATION: 12.01' TOC 11.97' NGVD88

Analytical Sample Number	PID (ppm)	BLOWS/6"	Water Level	Sample		DEPTH (ft.)	SOIL TYPE	LITHOLOGY / DESCRIPTION	Well Completion Details
				Recovery	Interval				
--	1.7	7		23	24	23	SP/S M	Black silty fine sand with shredded wood pieces (wet, medium dense), slight sheen, slight odor.	
--	2.9	15		25	26	25			
						27			
						28			
						29			
						30			
						31			
						32			
						33			



SOIL BORING LOG

BORING No: MW-3

SA-MW3

PAGE 1 of 3

PROJECT: EAA-2
 LOCATION: 7152 1st Ave S, Seattle, WA
 CLIENT: Department of Ecology
 DATE: 04/23/07
 LOGGED BY: Tina King

DRILLER: Cascade Drilling, Inc.
 DRILL METHOD: Concrete Core/Hollow-stem Auger
 SAMPLE METHOD: Split Spoon
 HOLE DIAMETER: 8.25 inches
 HOLE DEPTH: 26

WELL DIAMETER: 2-inch
 WELL DEPTH: 24 feet
 WELL CASING: 2-inch PVC, Schedule 40
 WELL SCREEN: 0.010-inch slot, 2-24 feet bgs
 FILTER PACK: 2-12 Colorado Silica Sand

CASING ELEVATION: 12.61' TOC 12.57' NGVD88

Analytical Sample Number	PID (ppm)	BLOWS/6"	Water Level	Sample Recovery Interval	DEPTH (ft.)	SOIL TYPE	LITHOLOGY / DESCRIPTION	Well Completion Details
					0	Con	5 inches of Concrete	
--	0.6	6			1			
		7			2			
		7			3		Brown silty fine to medium SAND with occasional fine gravel grading to silty fine sand (moist, loose), no sheen, no odor.	
					4	SM		
--	0.3	11			5		Same as above, grading to trace of clay and increasing silt.	
		7			6			
		10			7			
					8		Brown silty fine SAND/fine sandy SILT (moist, loose/stiff), no sheen, no odor.	
					9	SM/ML		
MW-3-10	0.4	3	▽		10		Same as above, grading to orange mottling (wet, very loose/soft).	
		5			11			



SOIL BORING LOG

BORING No: MW-3

SA-MW3

PAGE 2 of 3

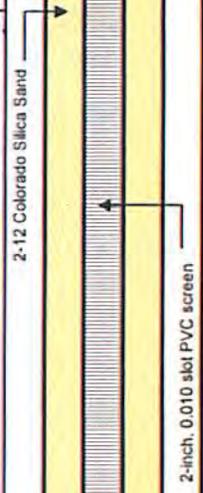
PROJECT: EAA-2
 LOCATION: 7152 1st Ave S, Seattle, WA
 CLIENT: Department of Ecology
 DATE: 04/23/07
 LOGGED BY: Tina King

DRILLER: Cascade Drilling, Inc.
 DRILL METHOD: Concrete Core/Hollow-stem Auger
 SAMPLE METHOD: Split Spoon
 HOLE DIAMETER: 8.25 inches
 HOLE DEPTH: 26

WELL DIAMETER: 2-inch
 WELL DEPTH: 24 feet
 WELL CASING: 2-inch PVC, Schedule 40
 WELL SCREEN: 0.010-inch slot, 2-24 feet bgs
 FILTER PACK: 2-12 Colorado Silica Sand

CASING ELEVATION: 12.61' TOC 12.57' NGVD88

Analytical Sample Number	PID (ppm)	BLOWS/6"	Water Level	Sample		DEPTH (ft.)	SOIL TYPE	LITHOLOGY / DESCRIPTION	Well Completion Details	
				Recovery	Interval					
--	0.4	4				12	SM/ML	Same as above.		
		7				13	SM	Brown silty fine SAND (wet, dense), no sheen, no odor.		
		9				14				
		10				15				
--	0.9	10				15		Same as above.		
		10				16	SP/S M	Brown silty fine SAND with increasing fine sand (wet dense), no sheen, no odor.		
		15				17				
		15				18				
--	0.01	15				18		Same as above, grading to dark brown at 18.5 and medium dense.		
		20				19				
		27				20				
--	7.1	50/6"				20		Grades to dark brown to black silty fine to medium sand (moist, very dense), no sheen, musty odor.		
						21				
						22				





SOIL BORING LOG

BORING No: MW-3

SA-MW3

PAGE 3 of 3

PROJECT: EAA-2
 LOCATION: 7152 1st Ave S, Seattle, WA
 CLIENT: Department of Ecology
 DATE: 04/23/07
 LOGGED BY: Tina King

DRILLER: Cascade Drilling, Inc.
 DRILL METHOD: Concrete Core/Hollow-stem Auger
 SAMPLE METHOD: Split Spoon
 HOLE DIAMETER: 8.25 inches
 HOLE DEPTH: 26

WELL DIAMETER: 2-inch
 WELL DEPTH: 24 feet
 WELL CASING: 2-inch PVC, Schedule 40
 WELL SCREEN: 0.010-inch slot, 2-24 feet bgs
 FILTER PACK: 2-12 Colorado Silica Sand

CASING ELEVATION: 12.61' TOC 12.57' NGVD88

Analytical Sample Number	PID (ppm)	BLOWS/6"	Water Level	Sample		DEPTH (ft.)	SOIL TYPE	LITHOLOGY / DESCRIPTION	Well Completion Details
				Recovery	Interval				
--	1.7	7				23	SP/S M	Same as above.	<p>2-12 Colorado Silica Sand</p> <p>2-inch, 0.010 slot PVC screen</p>
		10				24	SM	Dark Brown Silty fin SAND, occasional medium sand (wet, Medium dense), no sheen, no odor.	
--	0.4	32				25	SP	Same as above grading to no sheen and some organics.	
		50/6"				26			
						27			
						28			
						29			
						30			
						31			
						32			
						33			

DESCRIPTION OF SAMPLES, TESTS, AND INSTALLATION - MONITORING WELL NO.

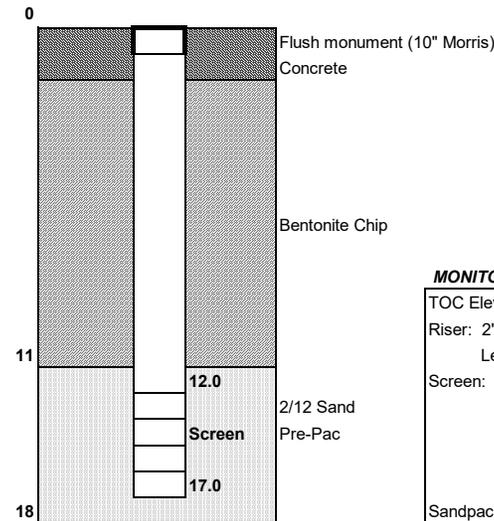
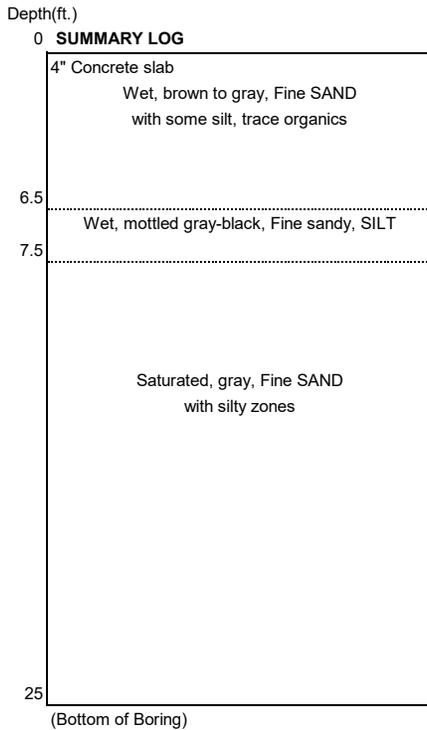
DOF-MW1

Field Rep: D. Cooper		Location: N199991 E1270150 NAD83		Ecology ID# BHSS17	
Drilling Co.: Cascade		Ground surface elevation: 14.05' NAVD88			
Driller: Kasey Goble		Date Completed: 10/16/2012			
Drill Type: Power Probe 9600		Weather: Rain 60F			
Size/Type Casing: 2.5"		Sampler: 2" macro w/acrylic liner, 5' continuous push			

Spl. No.	Type Sample Saved	PID (ppm)	Spl Depth (Ft.) From - To	Spl length (inches)	Blows/ 6 inches	Time	Sample Description
A	grab @ 4-5'	1.6	0-5	48	-	1315	0.4-4.5' Moist, bwn, F SAND, w/some silt, ns, no 4.5-5' Wet, gry, F SAND, w/trace organics, ns, no
B	grab @ 6.5-7.5'	1.2	5-10	60	-	1325	5-6.5' As above 6.5-7.5' Wet, mot gry-blk, F Sandy, SILT, ns, no 7.5-10' Sat, gry, F SAND, w/some silt, ns, no
C	grab @ 11-12'	0.2	10-15	40	-	1335	10-15' Sat, gry, F SAND, ns, no
			15-20	40	-		15-20' Sat, gry, silty, F SAND, ns, no
			20-25	60	-		20-25' As above

Bottom of boring @ 25.0'

MONITORING WELL DIAGRAM



MONITORING WELL INFORMATION

TOC Elevation: 13.74 NAVD88
Riser: 2" dia. SCH 40 PVC
Length: 12.0'
Screen: 2" dia. SCH 40 PVC
Slot size: 0.010"
Length: 5'
(top/bot) 12.0/17.0
0.3' end cap
Sandpack: Pre-Pac 2/12 colorado sand
10-20 backfill (top/bot) 11/18
Seal: Bentonite chip
(top/bot) 2/11
Monument: 10" dia. Flush Mount (Morris)
-0.3' to top of PVC/TOC

NOTE: The summary log is an interpretation based on samples, drill action, and interpolation. Variations between what is shown and actual conditions should be anticipated.

Abbreviations: PID - photoionization detector - MiniRAE 3000
 F - fine
 M - medium
 Sat. - saturated
 mot - mottled
 ns - no sheen
 no - no odor

DESCRIPTION OF SAMPLES, TESTS, AND INSTALLATION - MONITORING WELL NO.

DOF-MW2

Field Rep: D. Cooper		Location: N199928 E1269979 NAD83		Ecology ID# BHS520	
Drilling Co.: Cascade		Ground surface elevation: 17.12' NAVD88			
Driller: Kasey Goble		Date Completed: 10/16/2012			
Drill Type: Power Probe 9600		Weather: Clear 60F			
Size/Type Casing: 2.5"		Sampler: 2" macro w/acrylic liner, 5' continuous push			

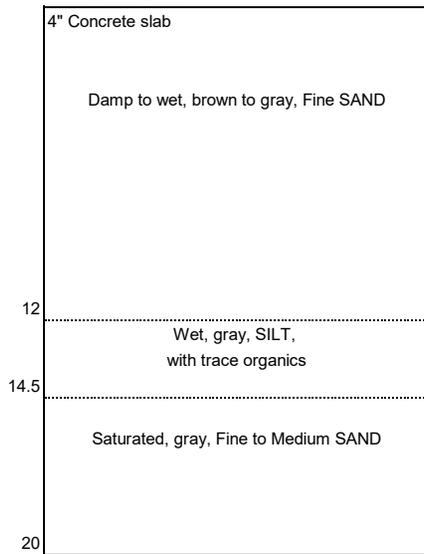
Spl. No.	Type Sample Saved	PID (ppm)	Spl Depth (Ft.) From - To	Spl length (inches)	Blows/ 6 inches	Time	Sample Description
A	grab @ 2-3'	1.3	0-5	40	-	1120	0.4-5' Damp, bwn, F SAND, ns, no
B	grab @ 8-9'	1.2	5-10	60	-	1130	5-9' As above 9-10' Wet, bwn-gry, F SAND, w/oxidation banding, ns, no
C	grab @ 12-13'	1	10-15	60	-	1140	10-12' As above 12-14.5' Wet, gry, SILT, w/trace organics 13-14', ns, no 14.5-15' Sat, gry, F-M SAND, ns, no
D	grab @ 16-17'	0.3	15-20	60	-	1150	15-20' As above

Bottom of boring @ 20.0'

MONITORING WELL DIAGRAM

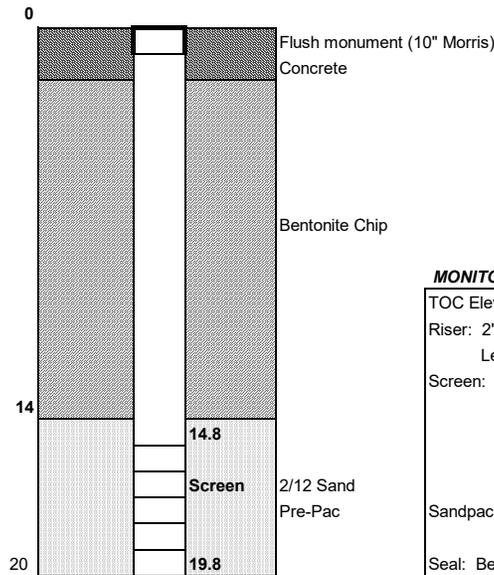
Depth(ft.)

SUMMARY LOG



(Bottom of Boring)

NOTE: The summary log is an interpretation based on samples, drill action, and interpolation. Variations between what is shown and actual conditions should be anticipated.



MONITORING WELL INFORMATION

TOC Elevation: 16.80 NAVD88
Riser: 2" dia. SCH 40 PVC
Length: 14.8'
Screen: 2" dia. SCH 40 PVC
Slot size: 0.010"
Length: 5'
(top/bot) 14.8/19.8
0.3' end cap
Sandpack: Pre-Pac 2/12 colorado sand
10-20 backfill (top/bot) 14/20
Seal: Bentonite chip
(top/bot) 2/14
Monument: 10" dia. Flush Mount (Morris)
-0.3' to top of PVC/TOC

Abbreviations: PID - photoionization detector - MiniRAE 3000

- F - fine
- M - medium
- Sat. - saturated
- mot - mottled
- ns - no sheen
- no - no odor

DESCRIPTION OF SAMPLES, TESTS, AND INSTALLATION - MONITORING WELL NO.

DOF-MW3

Field Rep: D. Cooper		Location: N199878 E1269775 NAD83		Ecology ID# BHS521	
Drilling Co.: Cascade		Ground surface elevation: 17.15' NAVD88			
Driller: Kasey Goble		Date Completed: 10/16/2012			
Drill Type: Power Probe 9600		Weather: Clear 60F			
Size/Type Casing: 2.5"		Sampler: 2" macro w/acrylic liner, 5' continuous push			

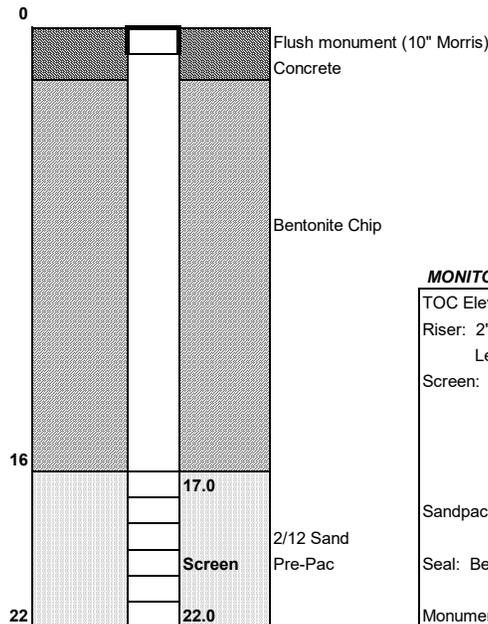
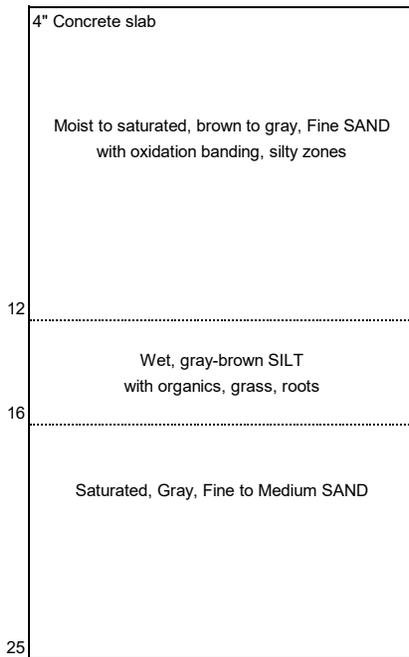
Spl. No.	Type Sample Saved	PID (ppm)	Spl Depth (Ft.) From - To	Spl length (inches)	Blows/ 6 inches	Time	Sample Description
A	grab @ 2-4'	0.8	0-5	48	-	1310	0.4-5' Moist, bwn, F SAND, ns, no
B	grab @ 7-8'	0.4	5-10	55	-	1320	5-8' Moist to wet, bwn, F SAND, oxidation band @ 8', ns, no 8-10' Wet to sat, gry, F SAND, sat @ 8.5', ns, no
C	grab @ 12-13'	0.9	10-15	55	-	1330	10-12' Sat, gry, silty F SAND, ns, no 12-13.5' Wet, gry, SILT, ns, no 13.5-15' Wet, bwn, SILT, w/organics, grass, roots
D	grab @ 17-18'	0.9	15-20	36	-	1340	15-16' As above 16-20' Sat, gry, F-M SAND, ns, no
			20-25	60	-		20-25' As above

Bottom of boring @ 25.0'

MONITORING WELL DIAGRAM

Depth(ft.)

SUMMARY LOG



MONITORING WELL INFORMATION

TOC Elevation: 16.79 NAVD88
 Riser: 2" dia. SCH 40 PVC
 Length: 17.0'
 Screen: 2" dia. SCH 40 PVC
 Slot size: 0.010"
 Length: 5'
 (top/bot) 17.0/22.0
 0.3' end cap
 Sandpack: Pre-Pac 2/12 colorado sand
 10-20 backfill (top/bot) 16/22
 Seal: Bentonite chip
 (top/bot) 2/16
 Monument: 10" dia. Flush Mount (Morris)
 -0.3' to top of PVC/TOC

NOTE: The summary log is an interpretation based on samples, drill action, and interpolation. Variations between what is shown and actual conditions should be anticipated.

Abbreviations: PID - photoionization detector - MiniRAE 3000
 F - fine
 M - medium
 Sat. - saturated
 mot - mottled
 ns - no sheen
 no - no odor

DESCRIPTION OF SAMPLES, TESTS, AND INSTALLATION - MONITORING WELL NO.

DOF-MW4

Field Rep: D. Cooper		Location: N199986 E1269797 NAD83		Ecology ID# BHS522	
Drilling Co.: Cascade		Ground surface elevation: 15.86' NAVD88			
Driller: Kasey Goble		Date Completed: 10/17/2012			
Drill Type: Power Probe 9600		Weather: Clear 50F			
Size/Type Casing: 2.5"		Sampler: 2" macro w/acrylic liner, 5' continuous push			

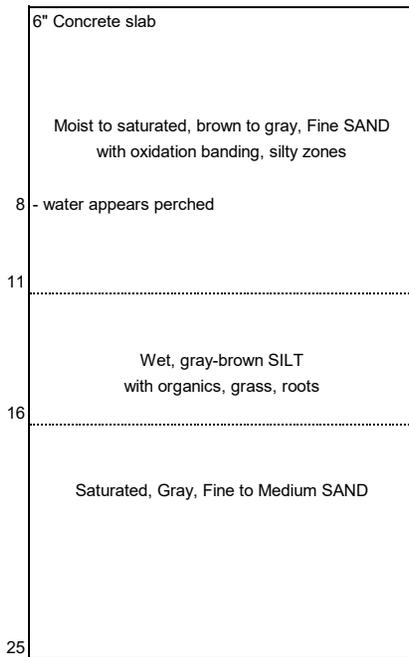
Spl. No.	Type Sample Saved	PID (ppm)	Spl Depth (Ft.) From - To	Spl length (inches)	Blows/ 6 inches	Time	Sample Description
A	grab @ 3-4'	24	0-5	36	-	0810	0.5-5' Moist, bwn-gry, F SAND, ns, no
B	grab @ 7-8'	2.3	5-10	48	-	0820	5-10' Wet, gry, F SAND, sat@ 8', ns, no (perched zone)
C	grab @ 10-11'	3.1	10-15	55	-	0830	10-11' Sat, gry, F SAND w/ some silt, ns, no 11-12' Wet, gry, SILT, ns, no 12-15' Wet, bwn, organic SILT, w/scattered fibrous organics
D	grab @ 16-17'	3.2	15-20	55	-	0840	15-16' As above 16-17' Sat, gry, fine SAND, ns, no 17-20' Sat, gry, F-M SAND, ns, no
			20-25	60	-		20-25' As above

Bottom of boring @ 25.0'

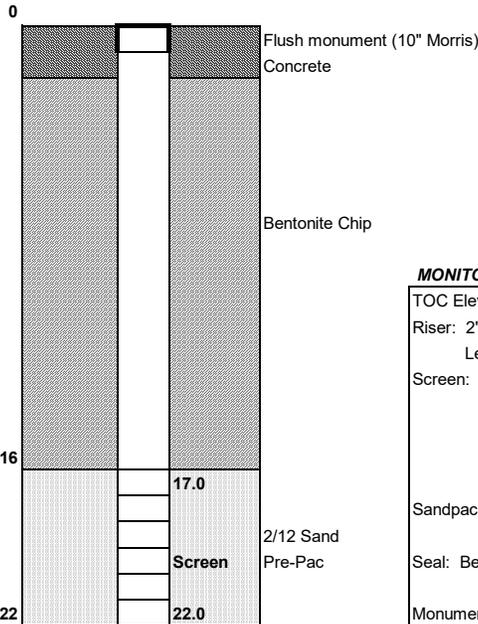
MONITORING WELL DIAGRAM

Depth(ft.)

SUMMARY LOG



(Bottom of Boring)



MONITORING WELL INFORMATION

TOC Elevation: 15.54 NAVD88
Riser: 2" dia. SCH 40 PVC
Length: 17.0'
Screen: 2" dia. SCH 40 PVC
Slot size: 0.010"
Length: 5'
(top/bot) 17.0/22.0
0.3' end cap
Sandpack: Pre-Pac 2/12 colorado sand
10-20 backfill (top/bot) 16/22
Seal: Bentonite chip
(top/bot) 2/16
Monument: 10" dia. Flush Mount (Morris)
-0.3' to top of PVC/TOC

NOTE: The summary log is an interpretation based on samples, drill action, and interpolation. Variations between what is shown and actual conditions should be anticipated.

Abbreviations: PID - photoionization detector - MiniRAE 3000
 F - fine
 M - medium
 Sat. - saturated
 mot - mottled
 ns - no sheen
 no - no odor

DESCRIPTION OF SAMPLES, TESTS, AND INSTALLATION - MONITORING WELL NO.

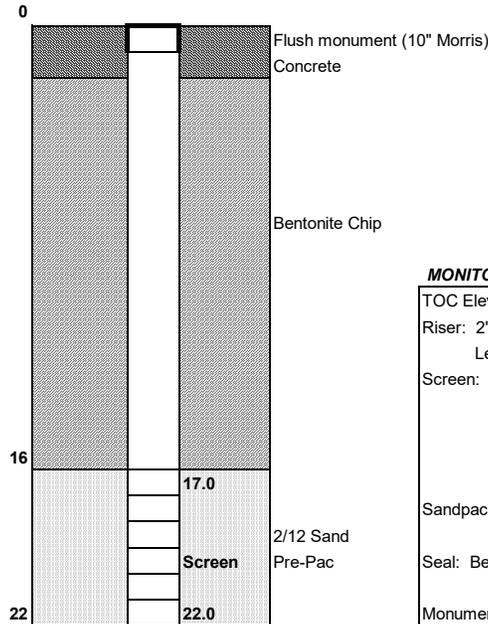
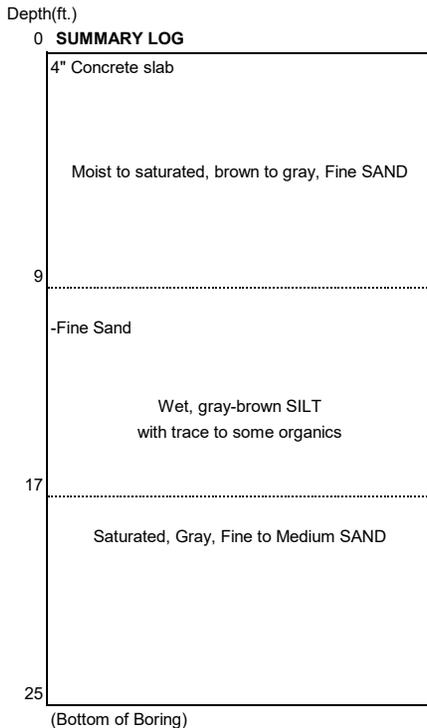
DOF-MW5

Field Rep: D. Cooper		Location: N200065 E1269721 NAD83		Ecology ID# BHS523	
Drilling Co.: Cascade		Ground surface elevation: 15.51' NAVD88			
Driller: Kasey Goble		Date Completed: 10/17/2012			
Drill Type: Power Probe 9600		Weather: Clear 55F			
Size/Type Casing: 2.5"		Sampler: 2" macro w/acrylic liner, 5' continuous push			

Spl. No.	Type Sample Saved	PID (ppm)	Spl Depth (Ft.) From - To	Spl length (inches)	Blows/ 6 inches	Time	Sample Description
A	grab @ 3-4'	3.6	0-5	40	-	1010	0.4-5' Moist, bwn, F SAND, ns, no
B	grab @ 7-8'	0.5	5-10	55	-	1020	5-6' As above 6-9' Wet-sat, gry, F SAND, saturated @ 7.5' ns, no 9-10' Wet, gry, SILT, w/trace organics, ns, no
C	grab @ 12-13'	0.8	10-15	55	-	1030	10-10.5' Sat, gry, F SAND, ns, no 10.5-11.5' Wet, gry, F sandy, SILT, ns, no 11.5-15' Wet, bwn, SILT, w/trace to some organics, ns, no
D	grab @ 17-18'	1.1	15-20	55	-	1040	15-17' Wet, bwn, organic, SILT, soft, ns, no 17-20' Sat, gry, F-M SAND, ns, no
			20-25	60	-		20-25' As above

Bottom of boring @ 25.0'

MONITORING WELL DIAGRAM



MONITORING WELL INFORMATION

TOC Elevation: 15.14 NAVD88
Riser: 2" dia. SCH 40 PVC
Length: 17.0'
Screen: 2" dia. SCH 40 PVC
Slot size: 0.010"
Length: 5'
(top/bot) 17.0/22.0
0.3' end cap
Sandpack: Pre-Pac 2/12 colorado sand
10-20 backfill (top/bot) 16/22
Seal: Bentonite chip
(top/bot) 2/16
Monument: 10" dia. Flush Mount (Morris)
-0.3' to top of PVC/TOC

NOTE: The summary log is an interpretation based on samples, drill action, and interpolation. Variations between what is shown and actual conditions should be anticipated.

Abbreviations: PID - photoionization detector - MiniRAE 3000
 F - fine
 M - medium
 Sat. - saturated
 mot - mottled
 ns - no sheen
 no - no odor

DESCRIPTION OF SAMPLES, TESTS, AND INSTALLATION - MONITORING WELL NO.

DOF-MW6

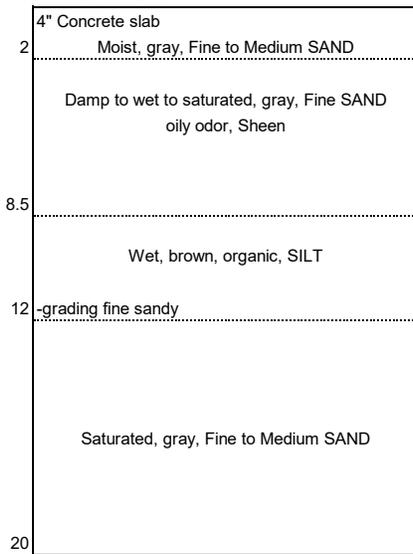
Field Rep: D. Cooper		Location: N200249 E1269827 NAD83		Ecology ID# BHS524			
Drilling Co.: Cascade		Ground surface elevation: 11.88' NAVD88					
Driller: Kasey Goble		Date Completed: 10/17/2012					
Drill Type: Power Probe 9600		Weather: Clear 55F					
Size/Type Casing: 2.5"		Sampler: 2" macro w/acrylic liner, 5' continuous push					
Spl. No.	Type Sample Saved	PID (ppm)	Spl Depth (Ft.) From - To	Spl length (inches)	Blows/ 6 inches	Time	Sample Description
A	grab @ 3-5'	98	0-5	40	-	1150	0.4-2' Moist, gry, F-M SAND, w/brick fragments 2-5' Wet, gry, F SAND, strong oily odor, light sheen 4-5'
B	grab @ 6-8'	130	5-10	60	-	1200	5-8' As above, becomes saturated @ 6.5' slight sheen
C	grab @ 9-10	2.2				1210	8-8.5' Wet, gry, F SAND, ns, slight odor 8.5-10' Wet, bwn, organic, SILT, ns, no
D	grab @ 12-13	0.9	10-15	60	-	1220	10-12' As above, soft, grading F sandy, ns, no 12-15' Sat, gry, F SAND, grading coarser, ns, no
			15-20	60	-		15-20' Sat, gry, F-M SAND, ns, no

Bottom of boring @ 20.0'

MONITORING WELL DIAGRAM

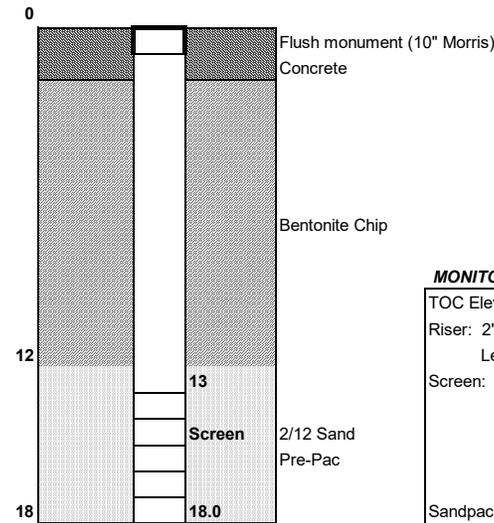
Depth(ft.)

SUMMARY LOG



(Bottom of Boring)

NOTE: The summary log is an interpretation based on samples, drill action, and interpolation. Variations between what is shown and actual conditions should be anticipated.



MONITORING WELL INFORMATION

TOC Elevation: 11.53 NAVD88
Riser: 2" dia. SCH 40 PVC
Length: 13.0'
Screen: 2" dia. SCH 40 PVC
Slot size: 0.010"
Length: 5'
(top/bot) 13.0/18.0
0.3' end cap
Sandpack: Pre-Pac 2/12 colorado sand
10-20 backfill (top/bot) 12/18
Seal: Bentonite chip
(top/bot) 2/12
Monument: 10" dia. Flush Mount (Morris)
-0.3' to top of PVC/TOC

Abbreviations: PID - photoionization detector - MiniRAE 3000

- F - fine
- M - medium
- Sat. - saturated
- mot - mottled
- ns - no sheen
- no - no odor

DESCRIPTION OF SAMPLES, TESTS, AND INSTALLATION - MONITORING WELL NO.

DOF-MW7

Field Rep: D. Cooper		Location: N200185 E1269970 NAD83		Ecology ID# BHS519	
Drilling Co.: Cascade		Ground surface elevation: 13.02' NAVD88			
Driller: Kasey Goble		Date Completed: 10/16/2012			
Drill Type: Power Probe 9600		Weather: Clear 55F			
Size/Type Casing: 2.5"		Sampler: 2" macro w/acrylic liner, 5' continuous push			

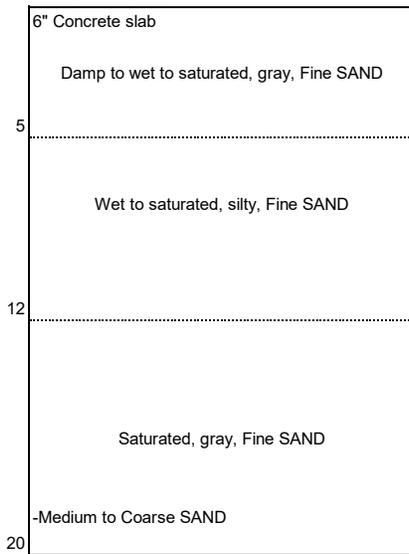
Spl. No.	Type Sample Saved	PID (ppm)	Spl Depth (Ft.) From - To	Spl length (inches)	Blows/ 6 inches	Time	Sample Description
A	grab @ 3-4'	7.5	0-5	36	-	0940	0.5-5' Moist, gry, F SAND, ns, no
B	grab @ 7-8'	4.5	5-10	50	-	0950	5-10' Wet-sat, gry, silty, F SAND, w/F Sand interbeds, ns, no saturated @ 7'
C	grab @ 11-12'	2.5	10-15	55	-	1000	10-12' As above 12-15' Sat, gry, F SAND, w/trace silt, ns, no
D	grab @ 16-17'	0.8	15-20	50	-	1010	15-20' As above grading coarser @ 19' to medium to coarse SAND

Bottom of boring @ 20.0'

MONITORING WELL DIAGRAM

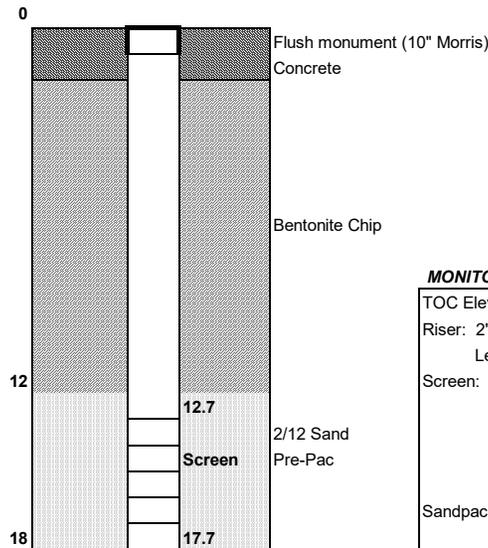
Depth(ft.)

SUMMARY LOG



(Bottom of Boring)

NOTE: The summary log is an interpretation based on samples, drill action, and interpolation. Variations between what is shown and actual conditions should be anticipated.



MONITORING WELL INFORMATION

TOC Elevation: 12.67 NAVD88
Riser: 2" dia. SCH 40 PVC
Length: 12.7'
Screen: 2" dia. SCH 40 PVC
Slot size: 0.010"
Length: 5'
(top/bot) 12.7/17.7
0.3' end cap
Sandpack: Pre-Pac 2/12 colorado sand
10-20 backfill (top/bot) 12/18
Seal: Bentonite chip
(top/bot) 2/12
Monument: 10" dia. Flush Mount (Morris)
-0.3' to top of PVC/TOC

Abbreviations: PID - photoionization detector - MiniRAE 3000

- F - fine
- M - medium
- Sat. - saturated
- mot - mottled
- ns - no sheen
- no - no odor

DESCRIPTION OF SAMPLES, TESTS, AND INSTALLATION - MONITORING WELL NO.

DOF-MW8

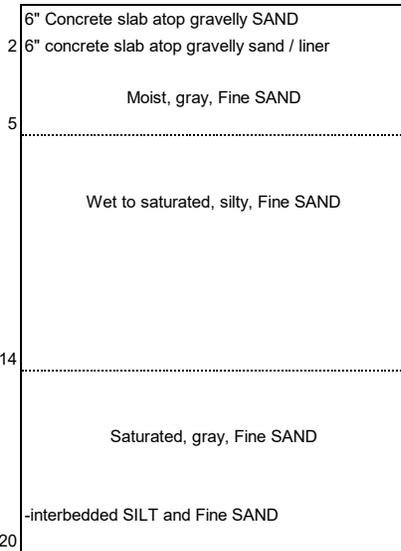
Field Rep: D. Cooper		Location: N200097 E1270036 NAD83		Ecology ID# BHSS18			
Drilling Co.: Cascade		Ground surface elevation: 13.84' NAVD88					
Driller: Kasey Goble		Date Completed: 10/16/2012					
Drill Type: Power Probe 9600		Weather: Clear 55F					
Size/Type Casing: 2.5"		Sampler: 2" macro w/acrylic liner, 5' continuous push					
Spl. No.	Type Sample Saved	PID (ppm)	Spl Depth (Ft.) From - To	Spl length (inches)	Blows/ 6 inches	Time	Sample Description
A	grab @ 3-4'	1.5	0-5	56	-	0810	0.5-1' Wet, bwn, gravelly, SAND 1-1.5' concrete slab 1.5-2' Wet, gray, gravelly, SAND, w/some silt poured rubber liner at 2' (Gaco deck like) 2-5' Moist, gry, F SAND, ns, no
B	grab @ 7-8'	1.8	5-10	50	-	0820	5-10' Wet-sat, gry, silty, F SAND, ns, no saturated @ 8'
C	grab @ 11-12'	1.0	10-15	50	-	0830	10-14' As above 14-15' Sat, gry, F SAND, w/trace silt, ns, no
D	grab @ 15-16'	0.8	15-20	55	-	0840	15-18.5' As above 18.5-20' interbedded silt and F SAND, 4" layers

Bottom of boring @ 20.0'

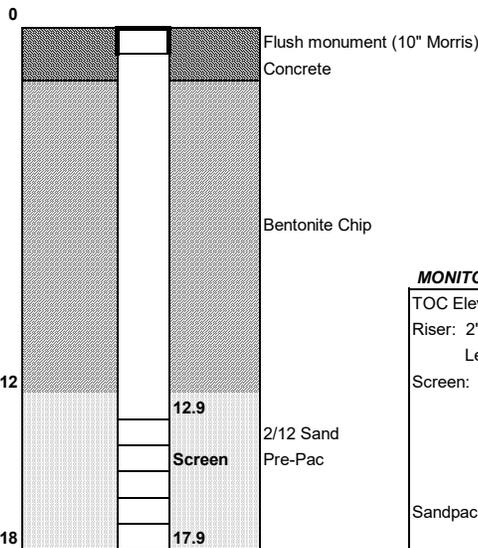
MONITORING WELL DIAGRAM

Depth(ft.)

SUMMARY LOG



NOTE: The summary log is an interpretation based on samples, drill action, and interpolation. Variations between what is shown and actual conditions should be anticipated.



MONITORING WELL INFORMATION

TOC Elevation: 13.51 NAVD88
Riser: 2" dia. SCH 40 PVC
Length: 12.9'
Screen: 2" dia. SCH 40 PVC
Slot size: 0.010"
Length: 5'
(top/bot) 12.9/17.9
0.3' end cap
Sandpack: Pre-Pac 2/12 colorado sand
10-20 backfill (top/bot) 12/18
Seal: Bentonite chip
(top/bot) 2/12
Monument: 10" dia. Flush Mount (Morris)
-0.3' to top of PVC/TOC

Abbreviations: PID - photoionization detector - MiniRAE 3000
 F - fine
 M - medium
 Sat. - saturated
 mot - mottled
 ns - no sheen
 no - no odor

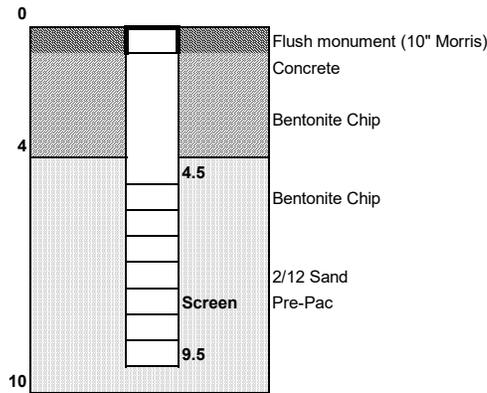
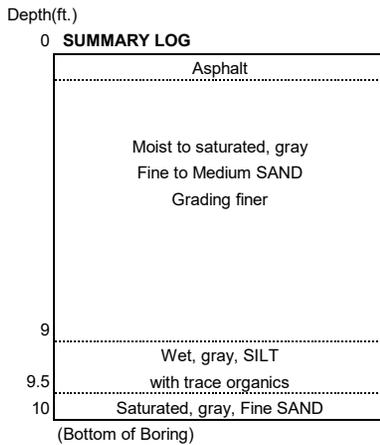
MW-Ap

DESCRIPTION OF SAMPLES, TESTS, AND INSTALLATION - MONITORING WELL NO.

Field Rep: D. Cooper		Location: N200173 E1269797 NAD83					
Drilling Co.: Holt		Ground surface elevation: 13.5 Ft. NAVD 88					
Driller: Louie		Date Completed: 10/5/2015					
Drill Type: GeoProbe 7822DT		Weather: Clear 70F					
Size/Type Casing: 2"		Sampler: 2" macro w/acrylic liner, 5' continuous push					
Spl. No.	Sample Interval (ft. bgs.)	PID (ppm)	Odor/Sheen	Spl Depth (Ft.) From - To	Spl length (inches)	Time	Sample Description
Ap-4	3.5-4.5	0.8	NO/NS	0-5	40	1045	0-0.4 Asphalt 0.4-5' Moist, bwn-gry, F-M SAND
Ap-7	6.5-7.5	0.7	NO/NS	5-10	60	1050	5-9' Moist-sat, bwn-gry, F SAND
Ap-10	9.5-10	1.4	NO/NS			1055	9-9.5' Wet, gry, SILT, w/trace organics 9.5-10' Sat. gry. F SAND

Bottom of boring @ 10.0'

MONITORING WELL DIAGRAM



MONITORING WELL INFORMATION

Ecology ID# BJE902
TOC Elevation: 13.08 Ft. NAVD 88
Riser: 2" dia. SCH 40 PVC
Length: 4.5'
Screen: 2" dia. SCH 40 PVC
Slot size: 0.010"
Length: 5'
(top/bot) 4.5/9.5
0.3' end cap
Sandpack: Pre-Pac 2/12 colorado sand
10-20 backfill (top/bot) 4/9.5
Seal: Bentonite chip
(top/bot) 1/4
Monument: 10" dia. Flush Mount (Morris)
-0.4' to top of PVC/TOC

NOTE: The summary log is an interpretation based on samples, drill action, and interpolation. Variations between what is shown and actual conditions should be anticipated.

Abbreviations: PID - photoionization detector - MiniRAE 3000
 F - fine
 M - medium
 Sat. - saturated
 mot - mottled
 ns - no sheen
 no - no odor

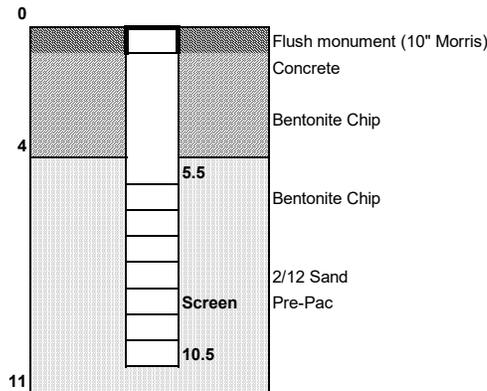
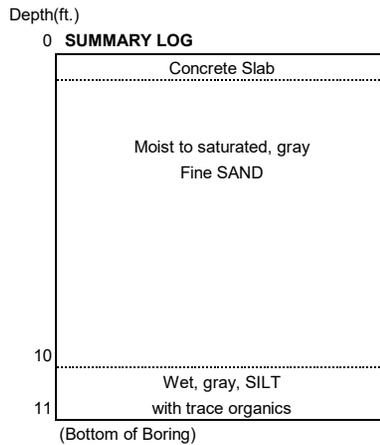
MW-Bp

DESCRIPTION OF SAMPLES, TESTS, AND INSTALLATION - MONITORING WELL NO.

Field Rep: D. Cooper		Location: N200095 E1269852 NAD83					
Drilling Co.: Holt		Ground surface elevation: 15.9 Ft. NAVD 88					
Driller: Louie		Date Completed: 10/5/2015					
Drill Type: GeoProbe 7822DT		Weather: Clear 70F					
Size/Type Casing: 2"		Sampler: 2" macro w/acrylic liner, 5' continuous push					
Spl. No.	Sample Interval (ft. bgs.)	PID (ppm)	Odor/ Sheen	Spl Depth (Ft.) From - To	Spl length (inches)	Time	Sample Description
Bp-4	3.5-4.5	0.8	NO/NS	0-5	50	0930	0-0.4 Concrete Slab (Interior of building) 0.4-5' Damp, gry, F SAND
Bp-7	6.5-7.5	1.5	NO/NS	5-10	40	0935	5-10' As above, saturated @ 9'
Bp-10	9-10	1.3	NO/NS			0940	
				10-11	12		10-11' Wet, gry, SILT, w/trace organics, very soft

Bottom of boring @ 10.0'

MONITORING WELL DIAGRAM



MONITORING WELL INFORMATION

Ecology ID# BJE901
TOC Elevation: 15.60 Ft. NAVD 88
Riser: 2" dia.SCH 40 PVC
Length: 5'
Screen: 2" dia. SCH 40 PVC
Slot size: 0.010"
Length: 5'
(top/bot) 5.5/10.5
0.3' end cap
Sandpack: Pre-Pac 2/12 colorado sand
10-20 backfill (top/bot) 4/10.5
Seal: Bentonite chip
(top/bot) 1/4
Monument: 10" dia. Flush Mount (Morris)
-0.4' to top of PVC/TOC

NOTE: The summary log is an interpretation based on samples, drill action, and interpolation. Variations between what is shown and actual conditions should be anticipated.

Abbreviations: PID - photoionization detector - MiniRAE 3000
 F - fine
 M - medium
 Sat. - saturated
 mot - mottled
 ns - no sheen
 no - no odor

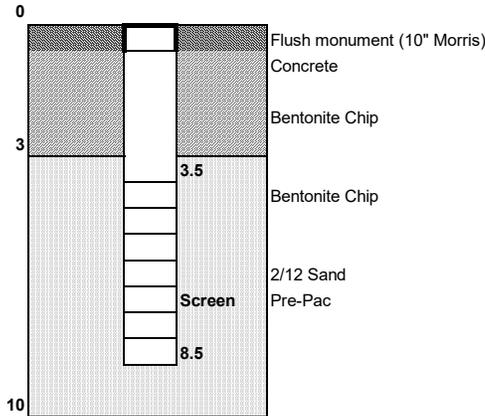
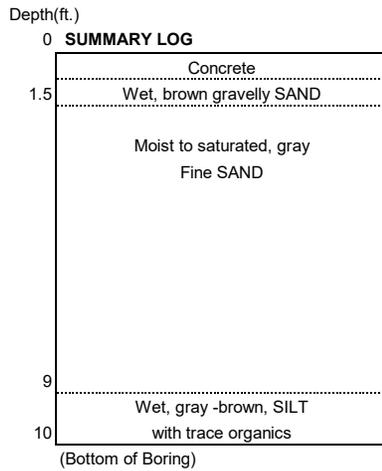
MW-Cp

DESCRIPTION OF SAMPLES, TESTS, AND INSTALLATION - MONITORING WELL NO.

Field Rep: D. Cooper		Location: N199995 E1269943 NAD83					
Drilling Co.: Holt		Ground surface elevation: 14.0 Ft. NAVD 88					
Driller: Louie		Date Completed: 10/7/2015					
Drill Type: GeoProbe 7800		Weather: Rain 60F					
Size/Type Casing: 2"		Sampler: 2" macro w/acrylic liner, 5' continuous push					
Spl. No.	Sample Interval (ft. bgs.)	PID (ppm)	Odor/ Sheen	Spl Depth (Ft.) From - To	Spl length (inches)	Time	Sample Description
Cp-4	3-5	0.7	NO/NS	0-5	50	0935	0-0.4 Concrete Slab 0.4-1' Wet. Bwn, gravelly, SAND 1-1.5' Moist, mot bwn, silty, SAND, w/trace gravel 1.5-5' Wet, gry, F SAND
Cp-7	6-8	1.3	NO/NS	5-10	60	0940	5-8' As above, saturated @ 6'
Cp-10	9-10	1.8	NO/NS			0945	8-9' Wet, gry, SILT, w/trace sand 9-10' Wet, bwn, SILT, w/trace organics

Bottom of boring @ 10.0'

MONITORING WELL DIAGRAM



MONITORING WELL INFORMATION

Ecology ID# BJE916
TOC Elevation: 13.69 Ft. NAVD 88
Riser: 2" dia. SCH 40 PVC
Length: 3.5'
Screen: 2" dia. SCH 40 PVC
Slot size: 0.010"
Length: 5'
(top/bot) 3.5/8.5
0.3' end cap
Sandpack: Pre-Pac 2/12 colorado sand
10-20 backfill (top/bot) 3/8.5
Seal: Bentonite chip
(top/bot) 1/3
Monument: 10" dia. Flush Mount (Morris)
-0.4' to top of PVC/TOC

NOTE: The summary log is an interpretation based on samples, drill action, and interpolation. Variations between what is shown and actual conditions should be anticipated.

Abbreviations: PID - photoionization detector - MiniRAE 3000
 F - fine
 M - medium
 Sat. - saturated
 mot - mottled
 ns - no sheen
 no - no odor

MW-Dp

DESCRIPTION OF SAMPLES, TESTS, AND INSTALLATION - MONITORING WELL NO.

Field Rep: D. Cooper		Location: N200271 E1269723 NAD83					
Drilling Co.: Holt		Ground surface elevation: 13.8 Ft. NAVD 88					
Driller: Louie		Date Completed: 10/8/2015					
Drill Type: GeoProbe 7800		Weather: Coudy 65F					
Size/Type Casing: 2"		Sampler: 2" macro w/acrylic liner, 5' continuous push					
Spl. No.	Sample Interval (ft. bgs.)	PID (ppm)	Odor/Sheen	Spl Depth (Ft.) From - To	Spl length (inches)	Time	Sample Description
				0-5	40		0-0.5' Concrete slab 0.5-1' Moist, mot bwn, SAND, w/trace gravel 1-5' Moist, bwn, F SAND
				5-10	50		5-7' As above 7-9' Moist-sat, gry, F SAND, w/some silt 9-9.5' Wet, gry, F Sandy, SILT 9.5-10' Sat, gry, F SAND, w/silty interbeds
				10-15	60		10-11' Wet, bwn, Organic, SILT 11-13.5' Wet, gry, silty, F SAND, w/trace organics 13.5-15' Sat, gry, F SAND

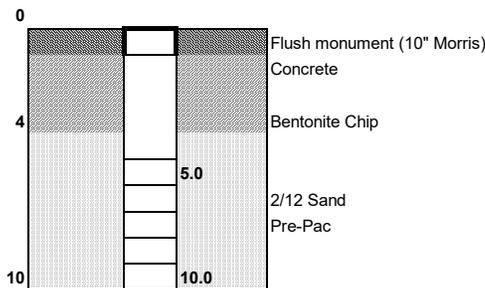
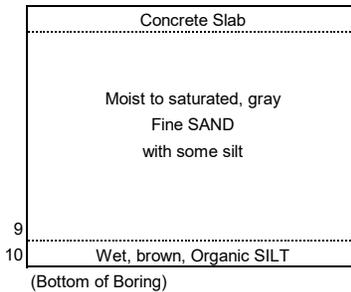
Note: Above log based on adjacent boring Du

Bottom of boring @ 12.0'

MONITORING WELL DIAGRAM

Depth(ft.)

SUMMARY LOG



MONITORING WELL INFORMATION

Ecology ID# BJE904
 TOC Elevation: 13.53 Ft. NAVD 88
 Riser: 2" dia. SCH 40 PVC
 Length: 5.0'
 Screen: 2" dia. SCH 40 PVC
 Slot size: 0.010"
 Length: 5'
 (top/bot) 5/10
 0.3' end cap
 Sandpack: Pre-Pac 2/12 colorado sand
 10-20 backfill (top/bot) 4/10
 Seal: Bentonite chip
 (top/bot) 1/4
 Monument: 10" dia. Flush Mount (Morris)
 -0.3' to top of PVC/TOC

Abbreviations: PID - photoionization detector - MiniRAE 3000

- F - fine
- M - medium
- Sat. - saturated
- mot - mottled
- ns - no sheen
- no - no odor

NOTE: The summary log is an interpretation based on samples, drill action, and interpolation. Variations between what is shown and actual conditions should be anticipated.

MW-Du

DESCRIPTION OF SAMPLES, TESTS, AND INSTALLATION - MONITORING WELL NO.

Field Rep: D. Cooper		Location: N200273 E1269723 NAD83	
Drilling Co.: Holt		Ground surface elevation: 13.8 Ft. NAVD 88	
Driller: Louie		Date Completed: 10/8/2015	
Drill Type: GeoProbe 7800		Weather: Coudy 65F	
Size/Type Casing: 2"		Sampler: 2" macro w/acrylic liner, 5' continuous push	

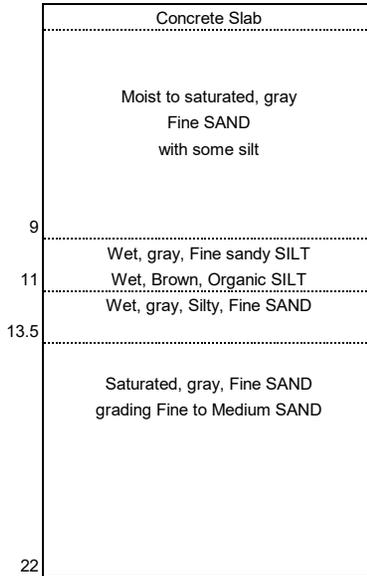
Spl. No.	Sample Interval (ft. bgs.)	PID (ppm)	Odor/ Sheen	Spl Depth (Ft.) From - To	Spl length (inches)	Time	Sample Description
Du-4	3.5-5.5	0.5	NO/NS	0-5	40	1340	0-0.5' Concrete slab 0.5-1' Moist, mot bwn, SAND, w/trace gravel 1-5' Moist, bwn, F SAND
Du-7	6-8	0.2	NO/NS	5-10	50	13445	5-7' As above 7-9' Moist-sat, gry, F SAND, w/some silt
Du-10	9-10	0.4	NO/NS			1350	9-9.5' Wet, gry, F Sandy, SILT 9.5-10' Sat, gry, F SAND, w/silty interbeds
Du-13	12-14	0.4	NO/NS	10-15	60	1355	10-11' Wet, bwn, Organic, SILT 11-13.5' Wet, gry, silty, F SAND, w/trace organics 13.5-15' Sat, gry, F SAND
Du-16	15-17	0.3	NO/NS	15-20	60	1400	15-20' As above, grading to F-M SAND
Du-21	19-22	0.6	NO/NS	20-22	24	1405	20-22' Sat, gry, F-M SAND

Bottom of boring @ 12.0'

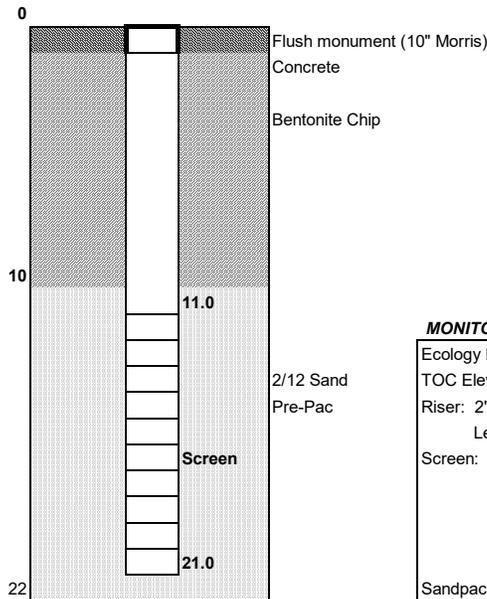
MONITORING WELL DIAGRAM

Depth(ft.)

SUMMARY LOG



(Bottom of Boring)



MONITORING WELL INFORMATION

Ecology ID# BJE903
 TOC Elevation: 13.57 Ft. NAVD 88
 Riser: 2" dia. SCH 40 PVC
 Length: 11.0'
 Screen: 2" dia. SCH 40 PVC
 Slot size: 0.010"
 Length: 10'
 (top/bot) 11/21
 0.3' end cap
 Sandpack: Pre-Pac 2/12 colorado sand
 10-20 backfill (top/bot) 10/21
 Seal: Bentonite chip
 (top/bot) 1/10
 Monument: 10" dia. Flush Mount (Morris)
 -0.3' to top of PVC/TOC

Abbreviations: PID - photoionization detector - MiniRAE 3000

- F - fine
- M - medium
- Sat. - saturated
- mot - mottled
- ns - no sheen
- no - no odor

NOTE: The summary log is an interpretation based on samples, drill action, and interpolation. Variations between what is shown and actual conditions should be anticipated.

MW-Eu

DESCRIPTION OF SAMPLES, TESTS, AND INSTALLATION - MONITORING WELL NO.

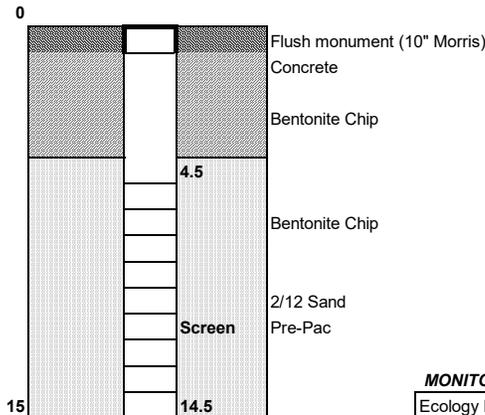
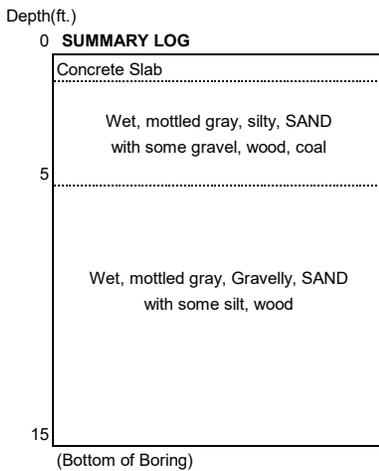
Field Rep: D. Cooper		Location: N200297 E1270058 NAD83	
Drilling Co.: Holt		Ground surface elevation: 12.2 Ft. NAVD 88	
Driller: Louie		Date Completed: 10/6/2015	
Drill Type: GeoProbe 7800		Weather: Coudy 65F	
Size/Type Casing: 2"		Sampler: 2" macro w/acrylic liner, 5' continuous push	

Spl. No.	Sample Interval (ft. bgs.)	PID (ppm)	Odor/Sheen	Spl Depth (Ft.) From - To	Spl length (inches)	Time	Sample Description
				0-5	40		4" slab 0.4-5' Wet, mot gry, silty, SAND, w/some gravel, wood, coal
				5-10	60		5-7' Wet, blk, gravelly, SAND 7-10' Wet, mot gry, gravelly, SAND, w/some silt, wood
				10-15	30		10-15' As Above, loose/soft
				15-20	60		15-15.5' Wet, blk, SILT 15.5-16' Sat, gry-blk, F SAND 16-16.5' Wet, blk, SILT 16.5-20' Sat, gry, F SAND, w/trace silt, wood

Note: Above log based on adjacent boring P30

Bottom of boring @ 15.0'

MONITORING WELL DIAGRAM



MONITORING WELL INFORMATION

Ecology ID# BJE908
TOC Elevation: 11.83 Ft. NAVD 88
Riser: 2" dia. SCH 40 PVC
Length: 4.5'
Screen: 2" dia. SCH 40 PVC
Slot size: 0.010"
Length: 10'
(top/bot) 4.5/14.5
0.3' end cap
Sandpack: Pre-Pac 2/12 colorado sand
10-20 backfill (top/bot) 11/18
Seal: Bentonite chip
(top/bot) 1/3.5
Monument: 10" dia. Flush Mount (Morris)
-0.3' to top of PVC/TOC

PID - photoionization detector - MiniRAE 3000
 F - fine
 M - medium
 Sat. - saturated
 mot - mottled
 Abbreviations: ns - no sheen
 no - no odor

NOTE: The summary log is an interpretation based on samples, drill action, and interpolation. Variations between what is shown and actual conditions should be anticipated.

MW-Fu

DESCRIPTION OF SAMPLES, TESTS, AND INSTALLATION - MONITORING WELL NO.

Field Rep: D. Cooper		Location: N200170 E1270230 NAD83					
Drilling Co.: Holt		Ground surface elevation: 13.1 Ft. NAVD 88					
Driller: Louie		Date Completed: 10/8/2015					
Drill Type: GeoProbe 7800		Weather: Coudy 65F					
Size/Type Casing: 2"		Sampler: 2" macro w/acrylic liner, 5' continuous push					
Spl. No.	Sample Interval (ft. bgs.)	PID (ppm)	Odor/ Sheen	Spl Depth (Ft.) From - To	Spl length (inches)	Time	Sample Description
				0-5	40		0-1' Moist, Mot Bwn, gravelly, SAND, w/some silt 1-5' Moist, bwn, F-M SAND
				5-10	50		5-10' Wet-Sat, Mot bwn, F-M SAND, w/silty F Sand interbeds oxidation @ 9'
				10-15	60		10-11.5' Sat, bwn, F-M SAND, w/silt clasts, reddish oxidized 11.5-15' Sat, gry, F SAND, w/thin silty sand interbeds

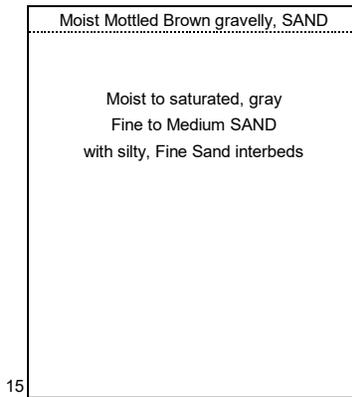
Note: Above log based on adjacent boring FI

Bottom of boring @ 15.0'

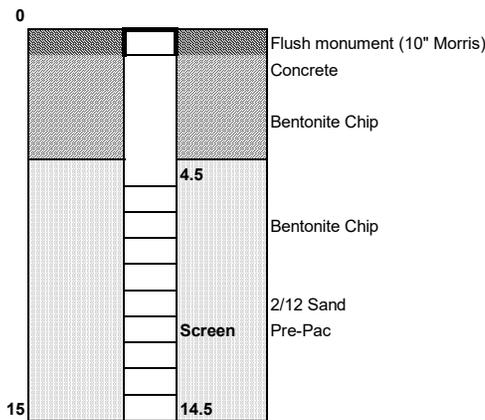
MONITORING WELL DIAGRAM

Depth(ft.)

SUMMARY LOG



(Bottom of Boring)



MONITORING WELL INFORMATION

Ecology ID# BJE920
TOC Elevation: 12.68 Ft. NAVD 88
Riser: 2" dia. SCH 40 PVC
Length: 4.5'
Screen: 2" dia. SCH 40 PVC
Slot size: 0.010"
Length: 10'
(top/bot) 4.5/14.5
0.3' end cap
Sandpack: Pre-Pac 2/12 colorado sand
10-20 backfill (top/bot) 11/18
Seal: Bentonite chip
(top/bot) 1/3.5
Monument: 10" dia. Flush Mount (Morris)
-0.3' to top of PVC/TOC

NOTE: The summary log is an interpretation based on samples, drill action, and interpolation. Variations between what is shown and actual conditions should be anticipated.

Abbreviations: PID - photoionization detector - MiniRAE 3000
 F - fine
 M - medium
 Sat. - saturated
 mot - mottled
 ns - no sheen
 no - no odor

MW-FL

DESCRIPTION OF SAMPLES, TESTS, AND INSTALLATION - MONITORING WELL NO.

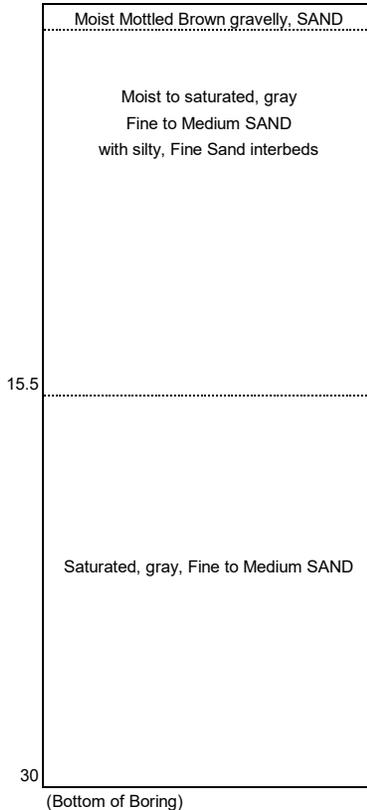
Field Rep: D. Cooper		Location: N200168 E1270230 NAD83	
Drilling Co.: Holt		Ground surface elevation: 13.1 Ft. NAVD 88	
Driller: Louie		Date Completed: 10/8/2015	
Drill Type: GeoProbe 7800		Weather: Coudy 65F	
Size/Type Casing: 2"		Sampler: 2" macro w/acrylic liner, 5' continuous push	

Spl. No.	Sample Interval (ft. bgs.)	PID (ppm)	Odor/ Sheen	Spl Depth (Ft.) From - To	Spl length (inches)	Time	Sample Description
FL-4	3-5	1.7	NO/NS	0-5	40	1205	0-1' Moist, Mot Bwn, gravelly, SAND, w/some silt 1-5' Moist, bwn, F-M SAND
FL-7	6-8	2.7	NO/NS	5-10	50	1210	5-10' Wet-Sat, Mot bwn, F-M SAND, w/silty F Sand interbeds oxidation @ 9'
FL-10	9-10	2.5	NO/NS			1215	
FL-13	12-14	2.6	NO/NS	10-15	60	1220	10-11.5' Sat, bwn, F-M SAND, w/sil clasts, reddish oxidized 11.5-15' Sat, gry, F SAND, w/thin silty sand interbeds
FL-16	15.5-17	3	NO/NS	15-20	60	1225	15-15.5' As above 15.5-20' Sat, gry, F-M SAND
FL-21	20-22	2.5	NO/NS	20-25	60	1230	20-25' As Above w/occasional silty F Sand interbeds
				25-30	60		25-30' Sat, gry, F-M SAND, w/red flecs

Bottom of boring @ 30.0'

Depth(ft.)

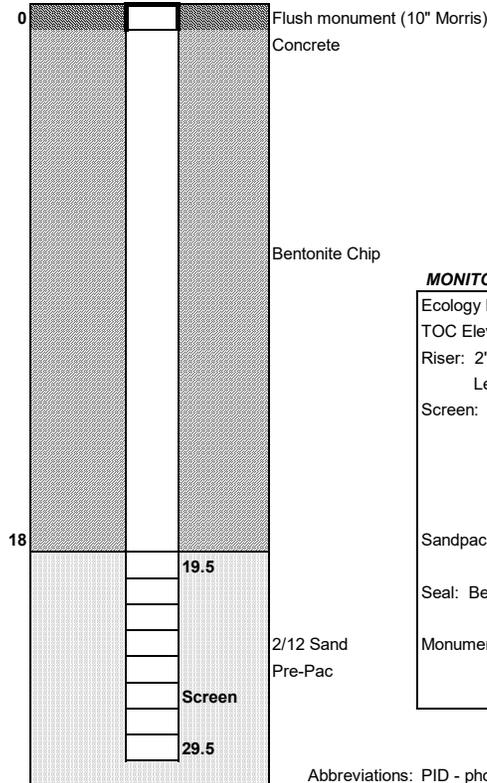
SUMMARY LOG



(Bottom of Boring)

NOTE: The summary log is an interpretation based on samples, drill action, and interpolation. Variations between what is shown and actual conditions should be anticipated.

MONITORING WELL DIAGRAM



MONITORING WELL INFORMATION

Ecology ID#	BJE919
TOC Elevation:	12.80 Ft. NAVD 88
Riser:	2" dia. SCH 40 PVC
Length:	19.5'
Screen:	2" dia. SCH 40 PVC
Slot size:	0.010"
Length:	10'
(top/bot)	19.5/29.5
	0.3' end cap
Sandpack:	Pre-Pac 2/12 colorado sand
	10-20 backfill (top/bot) 18/30
Seal:	Bentonite chip
	(top/bot) 1/18
Monument:	10" dia. Flush Mount (Morris)
	-0.3' to top of PVC/TOC

Abbreviations: PID - photoionization detector - MiniRAE 3000

- F - fine
- M - medium
- Sat. - saturated
- mot - mottled
- ns - no sheen
- no - no odor

MW-Gu

DESCRIPTION OF SAMPLES, TESTS, AND INSTALLATION - MONITORING WELL NO.

Field Rep: D. Cooper		Location: N200055 E1270222 NAD83	
Drilling Co.: Holt		Ground surface elevation: 13.5 Ft. NAVD 88	
Driller: Louie		Date Completed: 10/8/2015	
Drill Type: GeoProbe 7800		Weather: Coudy 65F	
Size/Type Casing: 2"		Sampler: 2" macro w/acrylic liner, 5' continuous push	

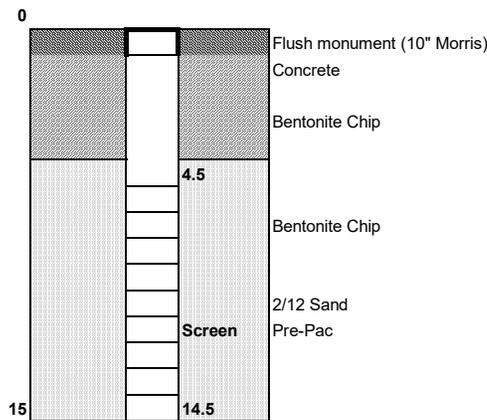
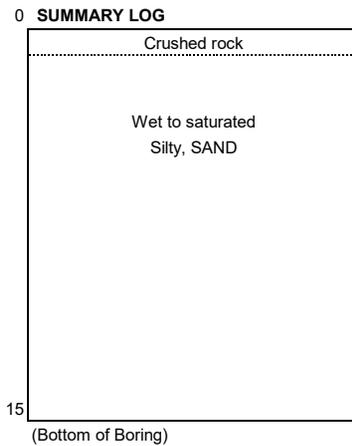
Spl. No.	Sample Interval (ft. bgs.)	PID (ppm)	Odor/ Sheen	Spl Depth (Ft.) From - To	Spl length (inches)	Time	Sample Description
				0-5	30		0-1' 1.5" minus crushed rock 1-2' Damp mot bwn, sandy gravel, w/some silt
				5-10	6		Wet gry, silty, SAND
				10-15	0		No recovery

Note: Above log based on adjacent boring GI

Bottom of boring @ 15.0'

MONITORING WELL DIAGRAM

Depth(ft.)



MONITORING WELL INFORMATION

Ecology ID#	BJE917
TOC Elevation:	13.13 Ft. NAVD 88
Riser:	2" dia. SCH 40 PVC
Length:	4.5'
Screen:	2" dia. SCH 40 PVC
Slot size:	0.010"
Length:	10'
(top/bot)	4.5/14.5
	0.3' end cap
Sandpack:	Pre-Pac 2/12 colorado sand
	10-20 backfill (top/bot) 11/18
Seal:	Bentonite chip
	(top/bot) 1/3.5
Monument:	10" dia. Flush Mount (Morris)
	-0.3' to top of PVC/TOC

NOTE: The summary log is an interpretation based on samples, drill action, and interpolation. Variations between what is shown and actual conditions should be anticipated.

Abbreviations: PID - photoionization detector - MiniRAE 3000
 F - fine
 M - medium
 Sat. - saturated
 mot - mottled
 ns - no sheen
 no - no odor

MW-G_L

DESCRIPTION OF SAMPLES, TESTS, AND INSTALLATION - MONITORING WELL NO.

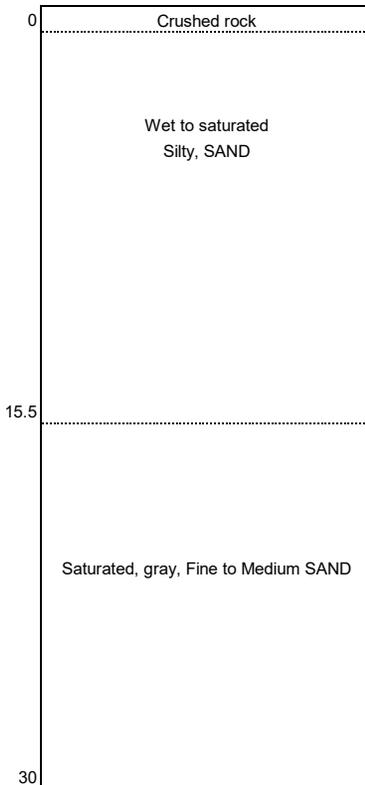
Field Rep: D. Cooper		Location: N200055 E1270221 NAD83	
Drilling Co.: Holt		Ground surface elevation: 13.7 Ft. NAVD 88	
Driller: Louie		Date Completed: 10/8/2015	
Drill Type: GeoProbe 7800		Weather: Coudy 65F	
Size/Type Casing: 2"		Sampler: 2" macro w/acrylic liner, 5' continuous push	

Spl. No.	Sample Interval (ft. bgs.)	PID (ppm)	Odor/ Sheen	Spl Depth (Ft.) From - To	Spl length (inches)	Time	Sample Description
		1.3	NO/NS	0-5	30		0-1' 1.5" minus crushed rock 1-2' Damp mot bwn, sandy gravel, w/some silt
		1.2	NO/NS	5-10	6		Wet gry, silty, SAND
				10-15	0		No recovery
		1.5	NO/NS	15-20	60		15-20' Sat, gry, silty, F SAND, very soft/loose
		0.4	NO/NS	20-25	60		20-25' Sat, gry, F-M SAND, red flecs, scattered shells
		0.5	NO/NS	25-30	60		25-30' As above

Bottom of boring @ 30.0'

Depth(ft.)

SUMMARY LOG

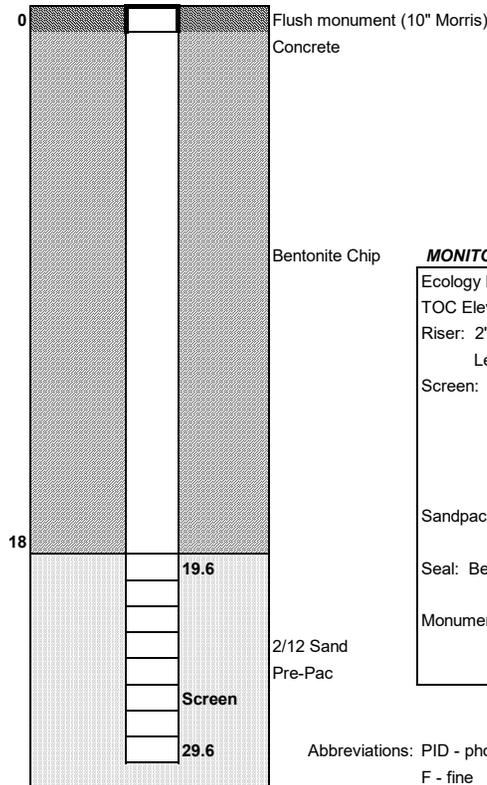


(Bottom of Boring)

NOTE: The summary log is an interpretation based on samples, drill action, and interpolation.

Variations between what is shown and actual conditions should be anticipated.

MONITORING WELL DIAGRAM



MONITORING WELL INFORMATION

Ecology ID# BJE919
 TOC Elevation: 13.32 Ft. NAVD 88
 Riser: 2" dia. SCH 40 PVC
 Length: 19.6'
 Screen: 2" dia. SCH 40 PVC
 Slot size: 0.010"
 Length: 10'
 (top/bot) 19.6/29.6
 0.3' end cap
 Sandpack: Pre-Pac 2/12 colorado sand
 10-20 backfill (top/bot) 18/30
 Seal: Bentonite chip
 (top/bot) 1/18
 Monument: 10" dia. Flush Mount (Morris)
 -0.3' to top of PVC/TOC

Abbreviations: PID - photoionization detector - MiniRAE 3000

- F - fine
- M - medium
- Sat. - saturated
- mot - mottled
- ns - no sheen
- no - no odor

MW-H_L

DESCRIPTION OF SAMPLES, TESTS, AND INSTALLATION - MONITORING WELL NO.

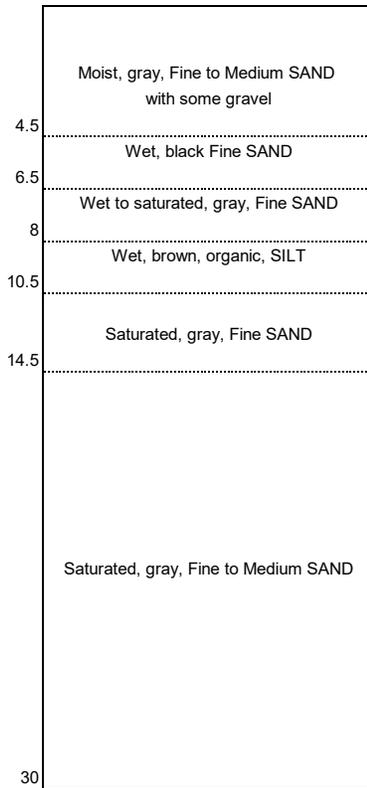
Field Rep: D. Cooper		Location: N200269 E1269831 NAD83					
Drilling Co.: Holt		Ground surface elevation: 12.0 Ft. NAVD 88					
Driller: Louie		Date Completed: 10/7/2015					
Drill Type: GeoProbe 7822DT		Weather: Rain 60F					
Size/Type Casing: 2"		Sampler: 2" macro w/acrylic liner, 5' continuous push					
Spl. No.	Sample Interval (ft. bgs.)	PID (ppm)	Odor/ Sheen	Spl Depth (Ft.) From - To	Spl length (inches)	Time	Sample Description
				0-5	12		Post holed 3' near gas line 0-4.5' Moist, gry, F-M SAND w/some gravel 4.5-5' Wet, black, F SAND
				5-10	60		5-6.5 As Above 6.5-6.7' Thin SILT interbed 6.7-8' Sat, gry, F SAND 8-10' Wet, bwn, organic, SILT
				10-15	60		10-10.5' As Above 10.5- 14.5' Sat, gry, F SAND, w/zones of trace silt 14.5-15' Sat, gry, F-M SAND
				15-20	60		15-20' As Above
				20-25	60		20-25' As Above

Note: Above log based on adjacent Probe P17

Bottom of boring @ 30.0'

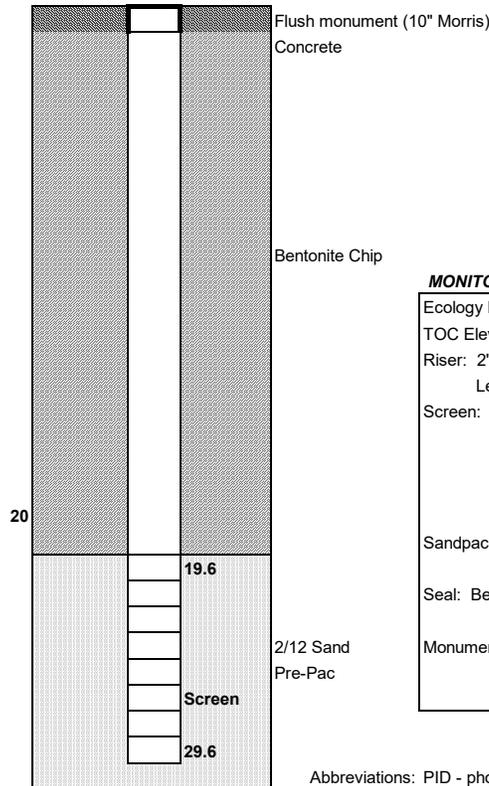
Depth(ft.)

0 SUMMARY LOG



(Bottom of Boring)

0 MONITORING WELL DIAGRAM



MONITORING WELL INFORMATION

Ecology ID#	BJE911
TOC Elevation:	11.73 Ft. NAVD 88
Riser:	2" dia. SCH 40 PVC
Length:	10.0'
Screen:	2" dia. SCH 40 PVC
Slot size:	0.010"
Length:	10'
(top/bot)	19.6/29.6
	0.3' end cap
Sandpack:	Pre-Pac 2/12 colorado sand
	10-20 backfill (top/bot) 18/30
Seal:	Bentonite chip
	(top/bot) 1/18
Monument:	10" dia. Flush Mount (Morris)
	-0.3' to top of PVC/TOC

Abbreviations: PID - photoionization detector - MiniRAE 3000

- F - fine
- M - medium
- Sat. - saturated
- mot - mottled
- ns - no sheen
- no - no odor

NOTE: The summary log is an interpretation based on samples, drill action, and interpolation. Variations between what is shown and actual conditions should be anticipated.

MW-1L

DESCRIPTION OF SAMPLES, TESTS, AND INSTALLATION - MONITORING WELL NO.

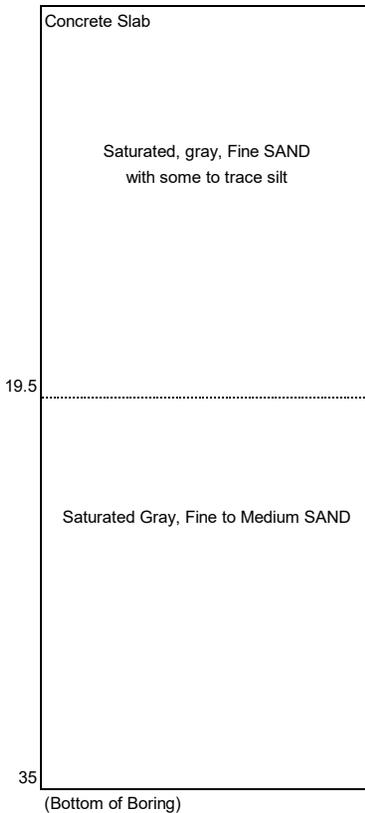
Field Rep: D. Cooper		Location: N200248 E1270172 NAD83					
Drilling Co.: Holt		Ground surface elevation: 12.9 Ft. NAVD 88					
Driller: Louie		Date Completed: 10/7/2015					
Drill Type: GeoProbe 7822DT		Weather: Rain 60F					
Size/Type Casing: 2"		Sampler: 2" macro w/acrylic liner, 5' continuous push					
Spl. No.	Sample Interval (ft. bgs.)	PID (ppm)	Odor/ Sheen	Spl Depth (Ft.) From - To	Spl length (inches)	Time	Sample Description
				0-5	40		4" slab 0.4-1.5' Moist, bwn, F-M SAND 1.5-5' Wet, bwn, F SAND, w/some silt, thin roots
				5-10	60		5-8" As Above 8-10' Sat, gry, F SAND, w/silty sand interbeds
				10-15	60		10-15' As Above
				15-20	60		15-19.5' As Above 19.5-20' Sat, gry, F-M SAND
				20-25	50		20-25' As Above
				25-30	50		25-30' As Above
				30-35	50		30-35' As Above

Note: Above log based on adjacent Probe P31

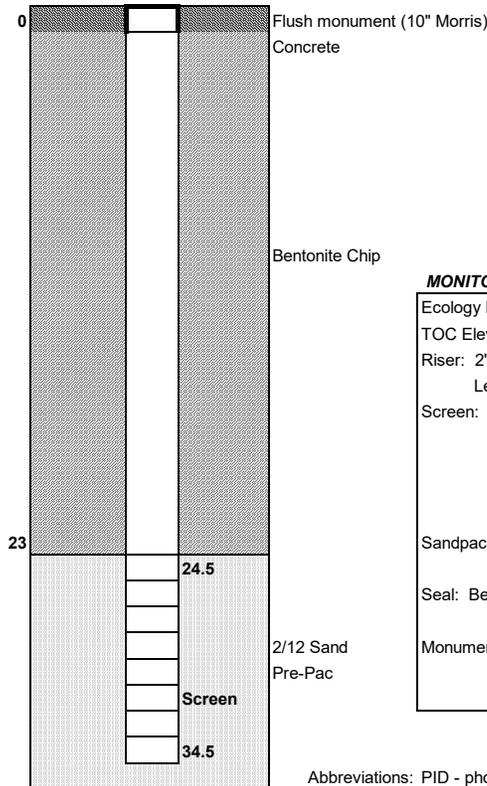
Bottom of boring @ 35.0'

Depth(ft.)

0 SUMMARY LOG



MONITORING WELL DIAGRAM



MONITORING WELL INFORMATION

Ecology ID#	BJE912
TOC Elevation:	12.59 Ft. NAVD 88
Riser:	2" dia. SCH 40 PVC
Length:	24.5'
Screen:	2" dia. SCH 40 PVC
Slot size:	0.010"
Length:	10'
(top/bot)	24.5/34.5
	0.3' end cap
Sandpack:	Pre-Pac 2/12 colorado sand
	10-20 backfill (top/bot) 23/35
Seal:	Bentonite chip
	(top/bot) 1/24
Monument:	10" dia. Flush Mount (Morris)
	-0.3' to top of PVC/TOC

Abbreviations: PID - photoionization detector - MiniRAE 3000

- F - fine
- M - medium
- Sat. - saturated
- mot - mottled
- ns - no sheen
- no - no odor

NOTE: The summary log is an interpretation based on samples, drill action, and interpolation. Variations between what is shown and actual conditions should be anticipated.

MW-Ju

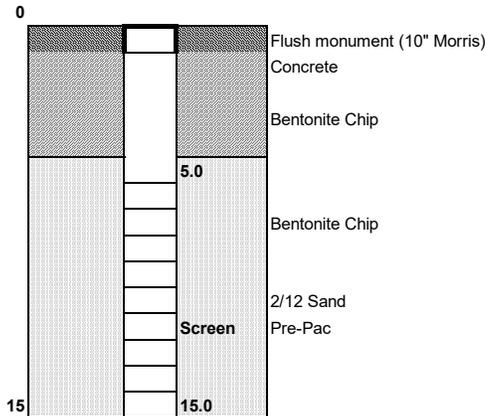
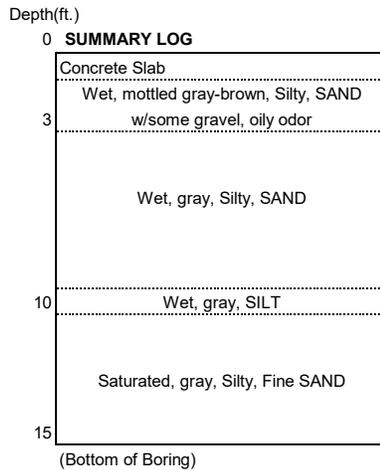
DESCRIPTION OF SAMPLES, TESTS, AND INSTALLATION - MONITORING WELL NO.

Field Rep: D. Cooper		Location: N200282 E1270134 NAD83	
Drilling Co.: Holt		Ground surface elevation: 12.5 Ft. NAVD 88	
Driller: Louie		Date Completed: 10/7/2015	
Drill Type: GeoProbe 7800		Weather: Rain 65F	
Size/Type Casing: 2"		Sampler: 2" macro w/acrylic liner, 5' continuous push	

Spl. No.	Sample Interval (ft. bgs.)	PID (ppm)	Odor/ Sheen	Spl Depth (Ft.) From - To	Spl length (inches)	Time	Sample Description
Ju-4	3-4	1.9	SO/NS	0-5	40		0-0.5' 3" Concrete slab on sand 0.5-1.5' Wet, bwn, silty SAND, w/some gravel 1.5-3' Wet, dk gry, silty, SAND, w/some gravel, oily odor no sheen 3-3.5' Cored wood
Ju-7	no sample			5-10	18		5-6' Poor recovery - wood core atop Wet, gry, Silty, SAND, w/some gravel
Ju-10	10-11	2.9	NO/NS				
Ju-13	12.5-13.5	0.4	NO/NS	10-16	60		10-10.5' Wet, gry, SILT, sulfurous odor 10.5-11.5' Wet, mot gry-bwn, silty, SAND, w/scatered organics 11.5-14' Sat, gry, silty, F SAND
Ju-15	14-15	0.3	NO/NS				14-15' Sat, gry, F SAND, w/organics

Bottom of boring @ 15.0'

MONITORING WELL DIAGRAM



MONITORING WELL INFORMATION

Ecology ID# BJE913
TOC Elevation: 12.18 Ft. NAVD 88
Riser: 2" dia. SCH 40 PVC
Length: 5.0'
Screen: 2" dia. SCH 40 PVC
Slot size: 0.010"
Length: 10'
(top/bot) 5/15
0.3' end cap
Sandpack: Pre-Pac 2/12 colorado sand
10-20 backfill (top/bot) 4/15
Seal: Bentonite chip
(top/bot) 1/4
Monument: 10" dia. Flush Mount (Morris)
-0.3' to top of PVC/TOC

NOTE: The summary log is an interpretation based on samples, drill action, and interpolation. Variations between what is shown and actual conditions should be anticipated.

PID - photoionization detector - MiniRAE 3000
 F - fine
 Abbreviations: M - medium
 Sat. - saturated
 mot - mottled
 ns - no sheen
 no - no odor; so - slight odor

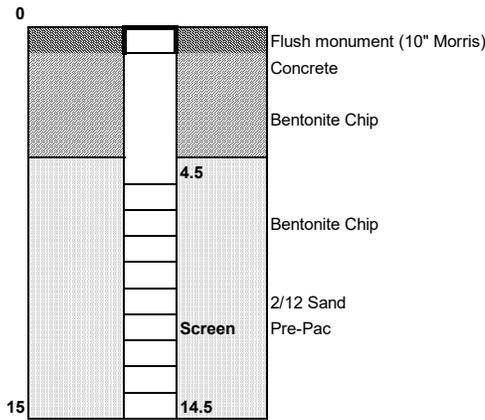
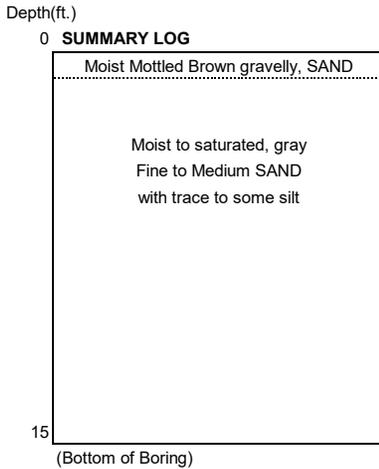
MW-Ku

DESCRIPTION OF SAMPLES, TESTS, AND INSTALLATION - MONITORING WELL NO.

Field Rep: D. Cooper		Location: N199927 E1270348 NAD83					
Drilling Co.: Holt		Ground surface elevation: 12.0 Ft. NAVD 88					
Driller: Louie		Date Completed: 10/7/2015					
Drill Type: Power Probe 9600		Weather: Rain 65F					
Size/Type Casing: 2"		Sampler: 2" macro w/acrylic liner, 5' continuous push					
Spl. No.	Sample Interval (ft. bgs.)	PID (ppm)	Odor/ Sheen	Spl Depth (Ft.) From - To	Spl length (inches)	Time	Sample Description
KL-4	3-5	0.1	NO/NS	0-5	40	1305	0-1' Moist, Mot Bwn, gravelly, silty, SAND 1-5' Moist, bwn-gry, F-M SAND, w/some silt
KL-7	7-9	0.3	NO/NS	5-10	50	1310	5-10' As above
KL-12	11-13	0.3	NO/NS	10-15	60	1315	10-15' Sat, gry, F SAND, w/trace to some silt

Note: Above log based on adjacent boring KI Bottom of boring @ 15.0'

MONITORING WELL DIAGRAM



MONITORING WELL INFORMATION

Ecology ID# BJE915
TOC Elevation: 11.59 Ft. NAVD 88
Riser: 2" dia. SCH 40 PVC
Length: 4.5'
Screen: 2" dia. SCH 40 PVC
Slot size: 0.010"
Length: 10'
(top/bot) 4.5/14.5
0.3' end cap
Sandpack: Pre-Pac 2/12 colorado sand
10-20 backfill (top/bot) 11/18
Seal: Bentonite chip
(top/bot) 1/3.5
Monument: 10" dia. Flush Mount (Morris)
-0.3' to top of PVC/TOC

NOTE: The summary log is an interpretation based on samples, drill action, and interpolation. Variations between what is shown and actual conditions should be anticipated.

Abbreviations: PID - photoionization detector - MiniRAE 3000
 F - fine
 M - medium
 Sat. - saturated
 mot - mottled
 ns - no sheen
 no - no odor

MW-KL

DESCRIPTION OF SAMPLES, TESTS, AND INSTALLATION - MONITORING WELL NO.

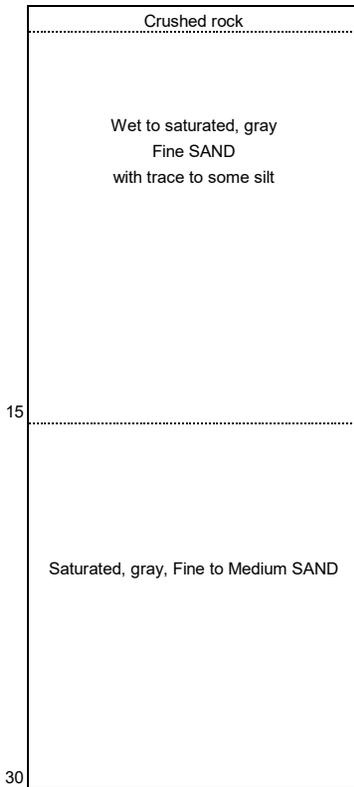
Field Rep: D. Cooper		Location: N199925 E1270348 NAD83	
Drilling Co.: Holt		Ground surface elevation: 11.9 Ft. NAVD 88	
Driller: Louie		Date Completed: 10/7/2015	
Drill Type: Power Probe 9600		Weather: Rain 65F	
Size/Type Casing: 2"		Sampler: 2" macro w/acrylic liner, 5' continuous push	

Spl. No.	Sample Interval (ft. bgs.)	PID (ppm)	Odor/ Sheen	Spl Depth (Ft.) From - To	Spl length (inches)	Time	Sample Description
KL-4	3-5	0.1	NO/NS	0-5	40	1305	0-1' Moist, Mot Bwn, gravelly, silty, SAND 1-5' Moist, bwn-gry, F-M SAND, w/some silt
KL-7	7-9	0.3	NO/NS	5-10	50	1310	5-10' As above
KL-12	11-13	0.3	NO/NS	10-15	60	1315	10-15' Sat, gry, F SAND, w/trace to some silt
KI-17	16-18	0.2	NO/NS	15-20	60	1320	15-20' Sat, gry, F SAND
KI-22	21-23	0.1	NO/NS	20-25	60	1325	20-25' As above, grading coarser
				25-30	60		25-30' Sat, gry, F-M SAND

Bottom of boring @ 30.0'

Depth(ft.)

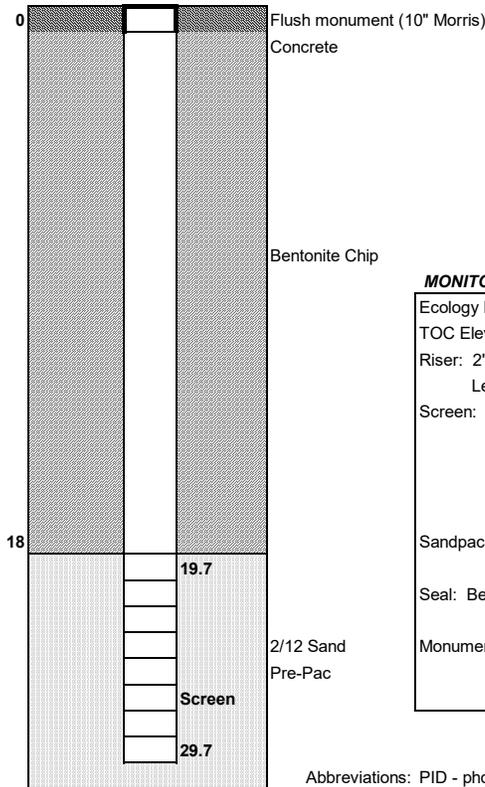
0 SUMMARY LOG



(Bottom of Boring)

NOTE: The summary log is an interpretation based on samples, drill action, and interpolation. Variations between what is shown and actual conditions should be anticipated.

MONITORING WELL DIAGRAM



MONITORING WELL INFORMATION

Ecology ID#	BJE914
TOC Elevation:	11.57 Ft. NAVD 88
Riser:	2" dia. SCH 40 PVC
Length:	19.7'
Screen:	2" dia. SCH 40 PVC
Slot size:	0.010"
Length:	10'
(top/bot)	19.7/29.7
	0.3' end cap
Sandpack:	Pre-Pac 2/12 colorado sand
	10-20 backfill (top/bot) 18/30
Seal:	Bentonite chip
	(top/bot) 1/18
Monument:	10" dia. Flush Mount (Morris)
	-0.3' to top of PVC/TOC

Abbreviations: PID - photoionization detector - MiniRAE 3000

- F - fine
- M - medium
- Sat. - saturated
- mot - mottled
- ns - no sheen
- no - no odor

MW-Lu

DESCRIPTION OF SAMPLES, TESTS, AND INSTALLATION - MONITORING WELL NO.

Field Rep: D. Cooper		Location: N199901 E1270258 NAD83					
Drilling Co.: Holt		Ground surface elevation: 12.0 Ft. NAVD 88					
Driller: Louie		Date Completed: 10/6/2015					
Drill Type: GeoProbe 7800		Weather: Coudy 65F					
Size/Type Casing: 2"		Sampler: 2" macro w/acrylic liner, 5' continuous push					
Spl. No.	Sample Interval (ft. bgs.)	PID (ppm)	Odor/ Sheen	Spl Depth (Ft.) From - To	Spl length (inches)	Time	Sample Description
				0-5	45		0-1' Wt, bwn, gravelly, SAND, w/some silt 1-5' Moist, gry, F-M SAND
				5-10	60		5-6' As above 6-6.1' Wet, bwn, organic, SILT 6.1-10' Sat, bwn-gry, silty, F SAND
				10-15	60		10-15' As Above grading sandy

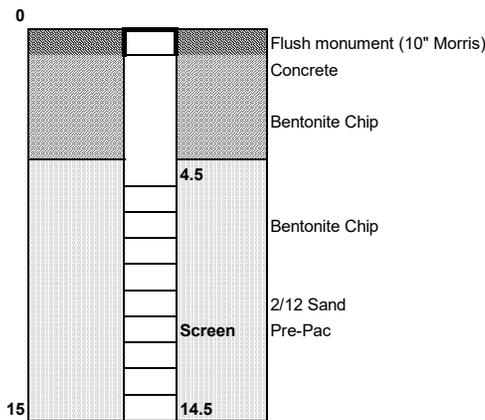
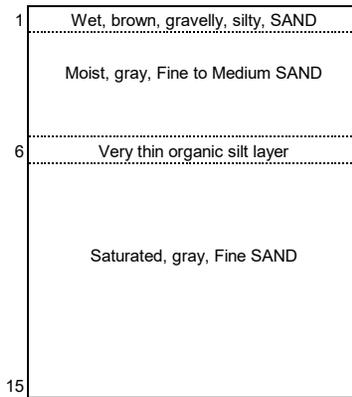
Note: Above log based on adjacent boring P27

Bottom of boring @ 15.0'

MONITORING WELL DIAGRAM

Depth(ft.)

SUMMARY LOG



MONITORING WELL INFORMATION

Ecology ID# BJE906
TOC Elevation: 11.69 Ft. NAVD 88
Riser: 2" dia. SCH 40 PVC Length: 4.5'
Screen: 2" dia. SCH 40 PVC Slot size: 0.010" Length: 10' (top/bot) 4.5/14.5 0.3' end cap
Sandpack: Pre-Pac 2/12 colorado sand 10-20 backfill (top/bot) 11/18
Seal: Bentonite chip (top/bot) 1/3.5
Monument: 10" dia. Flush Mount (Morris) -0.3' to top of PVC/TOC

NOTE: The summary log is an interpretation based on samples, drill action, and interpolation. Variations between what is shown and actual conditions should be anticipated.

Abbreviations: PID - photoionization detector - MiniRAE 3000
 F - fine
 M - medium
 Sat. - saturated
 mot - mottled
 ns - no sheen
 no - no odor

MW-L_L

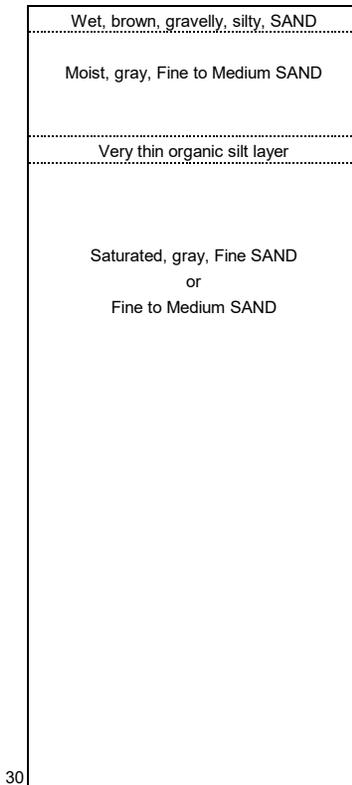
DESCRIPTION OF SAMPLES, TESTS, AND INSTALLATION - MONITORING WELL NO.

Field Rep: D. Cooper		Location: N199899 E1270260 NAD83	
Drilling Co.: Holt		Ground surface elevation: 12.0 Ft. NAVD 88	
Driller: Louie		Date Completed: 10/6/2015	
Drill Type: GeoProbe 7800		Weather: Coudy 65F	
Size/Type Casing: 2"		Sampler: 2" macro w/acrylic liner, 5' continuous push	

Sp. No.	Sample Interval (ft. bgs.)	PID (ppm)	Odor/ Sheen	Spl Depth (Ft.) From - To	Spl length (inches)	Time	Sample Description
				0-5	45		0-1' Wt, bwn, gravelly, SAND, w/some silt 1-5' Moist, gry, F-M SAND
				5-10	60		5-6' As above 6-6.1' Wet, bwn, organic, SILT 6.1-10' Sat, bwn-gry, silty, F SAND
				10-15	60		10-15' As Above grading sandy
				15-20	60		15-20' Sat, gry, F-M SAND
				20-25	60		20-25' Sat, gry, F SAND. w/some silt
				25-30	60		25-30' Sat, gry, F SAND

Note: Above log based on adjacent boring P27 Bottom of boring @ 30.0'
 Depth(ft.)

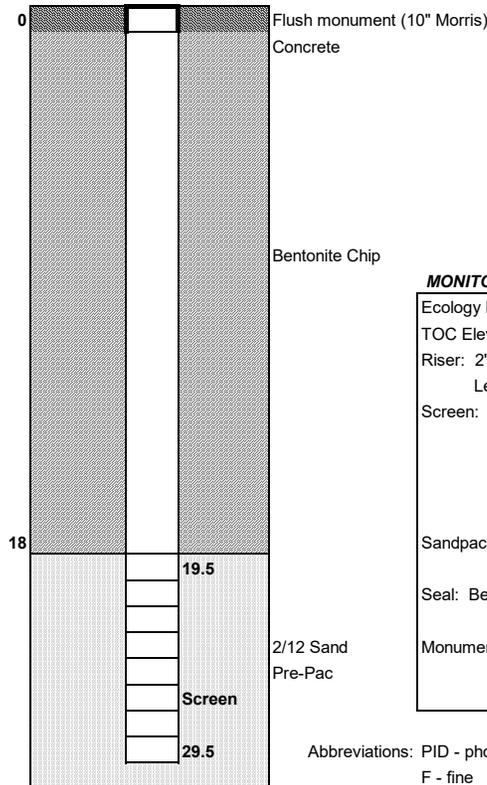
0 SUMMARY LOG



(Bottom of Boring)

NOTE: The summary log is an interpretation based on samples, drill action, and interpolation. Variations between what is shown and actual conditions should be anticipated.

MONITORING WELL DIAGRAM



MONITORING WELL INFORMATION

Ecology ID# BJE905
TOC Elevation: 11.65 Ft. NAVD 88
Riser: 2" dia. SCH 40 PVC
Length: 19.5'
Screen: 2" dia. SCH 40 PVC
Slot size: 0.010"
Length: 10'
(top/bot) 19.5/29.5
0.3' end cap
Sandpack: Pre-Pac 2/12 colorado sand
10-20 backfill (top/bot) 18/30
Seal: Bentonite chip
(top/bot) 1/18
Monument: 10" dia. Flush Mount (Morris)
-0.3' to top of PVC/TOC

Abbreviations: PID - photoionization detector - MiniRAE 3000
 F - fine
 M - medium
 Sat. - saturated
 mot - mottled
 ns - no sheen
 no - no odor

DESCRIPTION OF SAMPLES, TESTS, AND INSTALLATION - MONITORING WELL NO.

HC-B2(R)

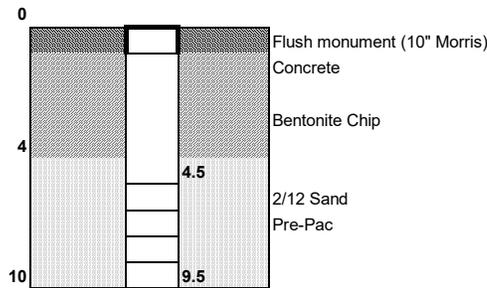
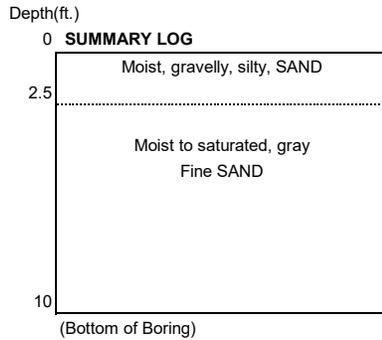
Field Rep: D. Cooper		Location: N200186 E1270108 NAD83	
Drilling Co.: Holt		Ground surface elevation: 12.8 Ft. NAVD 88	
Driller: Louie		Date Completed: 10/6/2015	
Drill Type: GeoProbe 7800		Weather: Coudy 65F	
Size/Type Casing: 2"		Sampler: 2" macro w/acrylic liner, 5' continuous push	

Spl. No.	Sample Interval (ft. bgs.)	PID (ppm)	Odor/ Sheen	Spl Depth (Ft.) From - To	Spl length (inches)	Time	Sample Description
				0-5	48		0-2.5' Moist, mot gry-bwn, gravelly, silty, SAND 2.5-5' Moist-sat, gry, F SAND
				5-10	52		5-10' As above

Note: Above log based on adjacent boring P18

Bottom of boring @ 10.0'

MONITORING WELL DIAGRAM



MONITORING WELL INFORMATION

Ecology ID# BJE907
TOC Elevation: 12.50 Ft. NAVD 88
Riser: 2" dia. SCH 40 PVC
Length: 4.5'
Screen: 2" dia. SCH 40 PVC
Slot size: 0.010"
Length: 5'
(top/bot) 4.5/9.5
0.3' end cap
Sandpack: Pre-Pac 2/12 colorado sand
10-20 backfill (top/bot) 4/10
Seal: Bentonite chip
(top/bot) 1/4
Monument: 10" dia. Flush Mount (Morris)
-0.3' to top of PVC/TOC

Abbreviations: PID - photoionization detector - MiniRAE 3000

- F - fine
- M - medium
- Sat. - saturated
- mot - mottled
- ns - no sheen
- no - no odor

NOTE: The summary log is an interpretation based on samples, drill action, and interpolation. Variations between what is shown and actual conditions should be anticipated.

DESCRIPTION OF SAMPLES, TESTS, AND INSTALLATION - MONITORING WELL NO.

LNAPL-1

Field Rep: D. Cooper		Location: N200212 E1270040 NAD83	
Drilling Co.: Holt		Ground surface elevation: 12.6 Ft. NAVD 88	
Driller: Louie		Date Completed: 10/6/2015	
Drill Type: GeoProbe 7800		Weather: Coudy 65F	
Size/Type Casing: 2"		Sampler: 2" macro w/acrylic liner, 5' continuous push	

Spl. No.	Sample Interval (ft. bgs.)	PID (ppm)	Odor/ Sheen	Spl Depth (Ft.) From - To	Spl length (inches)	Time	Sample Description
				0-5	40		6" concrete slab 0.5-1' Wet, mot bwn, sandy, GRAVEL 1-5' Wet, mot gry, silty, SAND, w/some gravel, wood
				5-10	60		5-9.5' Wet-sat, gry, F SAND, w/trace silt 9.5-10' Wet, gry, F SAND

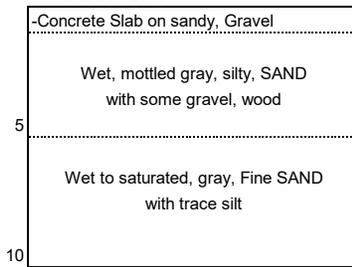
Note: Above log based on adjacent boring P29

Bottom of boring @ 10.0'

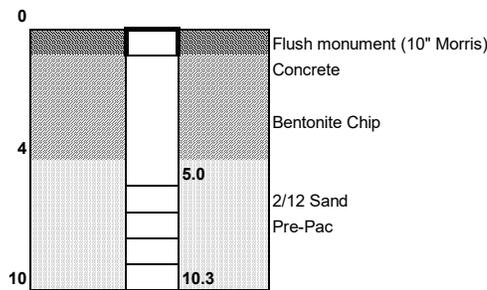
MONITORING WELL DIAGRAM

Depth(ft.)

SUMMARY LOG



(Bottom of Boring)



MONITORING WELL INFORMATION

Ecology ID#	BJE910
TOC Elevation:	12.24 Ft. NAVD 88
Riser:	2" dia. SCH 40 PVC
Length:	4.5'
Screen:	2" dia. SCH 40 PVC
Slot size:	0.010"
Length:	5'
(top/bot)	5.0/10.0
	0.3' end cap
Sandpack:	Pre-Pac 2/12 colorado sand
	10-20 backfill (top/bot) 4/10
Seal:	Bentonite chip
	(top/bot) 1/4
Monument:	10" dia. Flush Mount (Morris)
	-0.3' to top of PVC/TOC

Abbreviations: PID - photoionization detector - MiniRAE 3000

- F - fine
- M - medium
- Sat. - saturated
- mot - mottled
- ns - no sheen
- no - no odor

NOTE: The summary log is an interpretation based on samples, drill action, and interpolation. Variations between what is shown and actual conditions should be anticipated.

DESCRIPTION OF SAMPLES, TESTS, AND INSTALLATION - MONITORING WELL NO.

LNAPL-2

Field Rep: D. Cooper		Location: N200254 E1269921 NAD83	
Drilling Co.: Holt		Ground surface elevation: 12.2 Ft. NAVD 88	
Driller: Louie		Date Completed: 10/6/2015	
Drill Type: GeoProbe 7800		Weather: Coudy 65F	
Size/Type Casing: 2"		Sampler: 2" macro w/acrylic liner, 5' continuous push	

Spl. No.	Sample Interval (ft. bgs.)	PID (ppm)	Odor/Sheen	Spl Depth (Ft.) From - To	Spl length (inches)	Time	Sample Description
				0-4	40		4" concrete 0.5-1.5' wet, mot gry, gravelly, SAND, w/metal parts, oily odor, heavy sheen 1.5-4' damp, gry, F-M SAND, no odor, no sheen
				4-8	48		4-8' moist-wet, gry, F-M SAND, w/trace silt, brick, gravel slight odor, no sheen
				8-12	48		8-10' as above becoming sat 10-12' sat gry, silty F SAND, w/wood debris, moderate odor, slight sheen

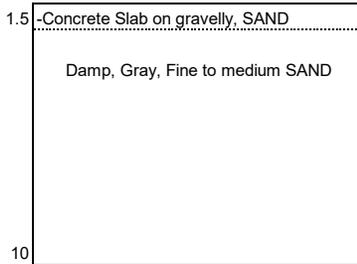
Note: Above log based on adjacent boring P8

Bottom of boring @ 10.0'

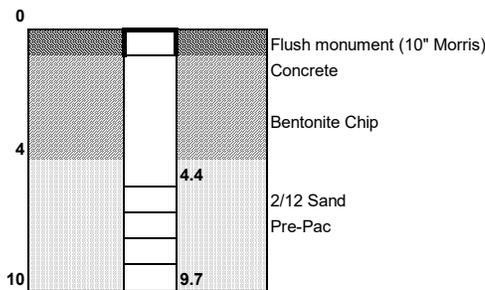
MONITORING WELL DIAGRAM

Depth(ft.)

SUMMARY LOG



(Bottom of Boring)



MONITORING WELL INFORMATION

Ecology ID# BJE909
 TOC Elevation: 11.96 Ft. NAVD 88
 Riser: 2" dia. SCH 40 PVC
 Length: 4.4'
 Screen: 2" dia. SCH 40 PVC
 Slot size: 0.010"
 Length: 5'
 (top/bot) 4.4/9.4
 0.3' end cap
 Sandpack: Pre-Pac 2/12 colorado sand
 10-20 backfill (top/bot) 4/10
 Seal: Bentonite chip
 (top/bot) 1/4
 Monument: 10" dia. Flush Mount (Morris)
 -0.3' to top of PVC/TOC

Abbreviations: PID - photoionization detector - MiniRAE 3000

- F - fine
- M - medium
- Sat. - saturated
- mot - mottled
- ns - no sheen
- no - no odor

NOTE: The summary log is an interpretation based on samples, drill action, and interpolation. Variations between what is shown and actual conditions should be anticipated.



DMC Monitoring Well: MW-8

Project: DMC
Client: Dept of Ecology
Location: Seattle, WA
Logged By: TMK

Date Started: 6/18/2008
Date Completed: 6/18/2008
Driller: Cascade Drilling, INC
Drill Method: Post Hole Dig and HSA

Total Boring Depth: 36.5 ft
Hole Diameter: 8.25 in.
Well Depth: 20 ft
TOC Elevation: ft

Well Diameter: 2 in
Well Screen: 0.010 Slot ft
Filter Pack: 2/12 Sand
Well Casing: Schedule 40 PVC

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	BLOWS/6"	SAMP. INTERVAL	ANALYTICAL SAMPLE	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION	WELL DIAGRAM
								6 inches ASPHALT. Post hole dig to 5 feet below ground surface.	
					SP-SM		1	(SP-SM) Brown fine to medium SAND with silt and occasional gravel (Fill). Loose, no odor, slight sheen.	
							2		
							3		
Moist	0.0	6 14 15	X				4		
							5	(SM) Dark brown silty medium to coarse SAND with fine sand and gravel (Fill). Medium dense, no odor slight sheen.	
					SM		6		
							7		
							8		
Moist	0.0	1 1 2	X				9		
							10	(SM) Dark brown silty fine SAND (Fill). High silt content Loose, no odor, no sheen.	
							11		
							12		
							13		
							14		
Moist	0.0	1 1 2	X				15	(SM) Black silty fine SAND (Fill). Very loose, no odor, no sheen.	
							16		
							17		
					SM		18		▼
							19		
							20		



DMC Monitoring Well: MW-8

Project: DMC
Client: Dept of Ecology
Location: Seattle, WA
Logged By: TMK

Date Started: 6/18/2008
Date Completed: 6/18/2008
Driller: Cascade Drilling, INC
Drill Method: Post Hole Dig and HSA

Total Boring Depth: 36.5 ft
Hole Diameter: 8.25 in.
Well Depth: 20 ft
TOC Elevation: ft

Well Diameter: 2 in
Well Screen: 0.010 Slot ft
Filter Pack: 2/12 Sand
Well Casing: Schedule 40 PVC

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	BLOWS/6"	SAMP. INTERVAL	ANALYTICAL SAMPLE	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION	WELL DIAGRAM
Wet	0.0	2 2 2	X		SM		21	(SM) Black silty fine to medium SAND with shells (Fill). Loose, no odor, no sheen.	
							22		
							23		
							24		
Wet	0.0	1 3 4	X				25	(ML) Black SILT with trace fine sand and shells (Fill). Soft, no odor, no sheen.	
							26		
							27		
							28		
							29		
Wet	5.0	2 2 2	X	MW-08-30	ML		30	(ML) Black SILT with fine sand and occasional medium to coarse sand and shells (Fill). Very soft, no odor, moderate sheen.	
							31		
							32		
							33		
							34	(SM) Black silty fine to medium SAND (likely sluff from above), heaving sands. Very loose, slight odor, no sheen.	
							35		
Wet	0.0	1 2 2	X		SM		36		
							37		
							38		
							39		
							40		
							37	Bottom of borehole at 36.5 feet.	



DMC Monitoring Well: MW-9

Project: DMC
Client: Dept of Ecology
Location: Seattle, WA
Logged By: TMK

Date Started: 6/18/2008
Date Completed: 6/18/2008
Driller: Cascade Drilling, INC
Drill Method: Post Hole Dig and HSA

Total Boring Depth: 21.5 ft
Hole Diameter: 8.25 in.
Well Depth: 20 ft
TOC Elevation: ft

Well Diameter: 2 in
Well Screen: 0.010 Slot ft
Filter Pack: 2/12 Sand
Well Casing: Schedule 40 PVC

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	BLOWS/6"	SAMP. INTERVAL	ANALYTICAL SAMPLE	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION	WELL DIAGRAM
Moist	0.0	2 3 3	X		SM		1 2 3 4 5 6 7 8	3 inches ASPHALT. Post hole dig to 4 feet below ground surface. (SM) Tan silty SAND with with gravel (suspect shore stabilization grouting) (Fill). Very dense, no odor, no sheen.	
Moist	0.0	6 9 10	X		GP-GM		9 10 11 12	(GP-GM) Brown sandy GRAVEL with silt and occasional cobbles and concrete (Fill). Medium dense, no odor, no sheen.	
Moist	0.0	1 3 3	X	MW-9-15	ML		13 14 15 16 17 18	(ML) Dark brown SILT with organics and trace fine sand. (Fill?). Medium stiff, no odor, no sheen.	▼
Wet	2.1	2 3 4	X				19 20 21	Same as above.	
							22 23 24 25	Bottom of borehole at 21.5 feet.	



DMC Monitoring Well: MW-10

Project: DMC
Client: Dept of Ecology
Location: Seattle, WA
Logged By: TMK

Date Started: 6/18/2008
Date Completed: 6/18/2008
Driller: Cascade Drilling, INC
Drill Method: Post Hole Dig and HSA

Total Boring Depth: 21.5 ft
Hole Diameter: 8.25 in.
Well Depth: 20 ft
TOC Elevation: ft

Well Diameter: 2 in
Well Screen: 0.010 Slot ft
Filter Pack: 2/12 Sand
Well Casing: Schedule 40 PVC

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	BLOWS/6"	SAMP. INTERVAL	ANALYTICAL SAMPLE	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION	WELL DIAGRAM
Moist	0.0				GM		1	7 inches ASPHALT. Post hole dig to 5 feet below ground surface. (GM) Brown sandy GRAVEL with silt (Base coarse-Fill). Very dense, no odor, no sheen.	
Moist	0.0	1 2 50	X		ML		5 6	(ML) Gray-white SILT with occasional fine gravel and sand (Fill). Hard, no odor, slight sheen.	
Moist	0.0	8 22 23	X		GP		10 11	(GP) Tan-gray sandy GRAVEL with silt (Fill?). Very dense, no odor, no sheen.	
Wet	0.0	3 1 1	X		ML		15 16	(ML) Black SILT with occasional gravel and trace organics (Fill?). Very soft, musty odor, no sheen.	▼
Wet	6.0	2 2 1	X	MW-10-20	ML		20	(ML) Same as above.	
							22	Bottom of borehole at 21.5 feet.	
							23		
							24		
							25		

DMC-MWA

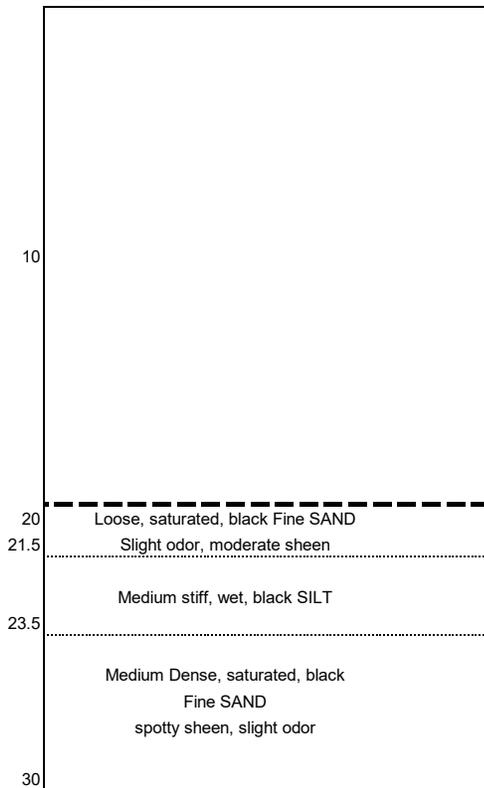
DESCRIPTION OF SAMPLES, TESTS, AND INSTALLATION - MONITORING WELL NO.

Field Rep: D. Cooper		Location: N200383.1 E1269954.5 NAD83		Ecology ID# BJA570				
Drilling Co.: Cascade		Ground surface elevation: 17.74 ft. NAVD88 (N. rim monument)						
Driller: James Goble		Date Completed: 02/12/15						
Drill Type: CME 55		Weather: Cloudy 50F						
Size/Type Casing: 10" HSA		Sampler: 3" dia. SPT						
Spl. No.	Type Sample Saved	PID (ppm)	Odor/ Sheen	Spl Depth (Ft.) From - To	Spl length (inches)	Blows/ 6 inches	Time	Sample Description
				0-20		-	0920	No Sampling from 0-20'. Lean concrete in cuttings
		17.3	SLO/MS	20-21.5	18	4/4/3		Loose, sat, gry, F-M SAND slight sheen, oily odor
		1.7	SLO/SS	21.5-23	18	3/3/3		M stiff, sat, blk, SILT
		2.5	SLO/SS	23-24.5	18	6/5/5		As Above
MWA	Composite 24.5-26'	3.2	SLO/SS	24.5-26	18	4/7/8	1015	M dense, sat, blk, F-M SAND spotty sheen
		1	SLO/SS	26-27.5	18	11/10/13		M dense, sat, blk, F SAND spotty sheen
		3.3	SLO/SS	27.5-29	18	8/5/8		As Above
		1.9	SLO/SS	29-30.5	18	7/6/6		As Above

Bottom of boring @ 30.5'

Depth(ft.)

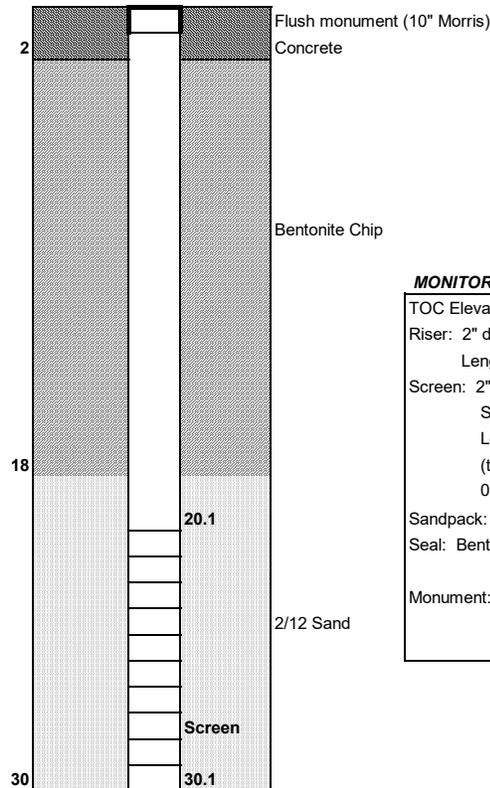
0 SUMMARY LOG



(Bottom of Boring)

NOTE: The summary log is an interpretation based on samples, drill action, and interpolation. Variations between what is shown and actual conditions should be anticipated.

MONITORING WELL DIAGRAM



MONITORING WELL INFORMATION

TOC Elevation: 17.10 ft. (NAVD88)
 Riser: 2" dia. SCH 40 PVC
 Length: 19.8'
 Screen: 2" dia. SCH 40 PVC
 Slot size: 0.010"
 Length: 10'
 (top/bot) 19.8/29.8
 0.3' end cap
 Sandpack: 2/12 colorado sand
 Seal: Bentonite chip
 (top/bot) 2/18
 Monument: 10" dia. Flush Mount (Morris)
 -0.3' to top of PVC/TOC

Abbreviations:

gry = gray; bwn = brown; blk = black; mot = mottled
 Sheen - NS= none, LS = Light, MS = Moderate, HS = Heavy
 Odor - NO= None, SLO = Slight, MO = Moderate, STO = Strong
 F = fine; M = medium, sat = pores saturated with water

DMC-MWB

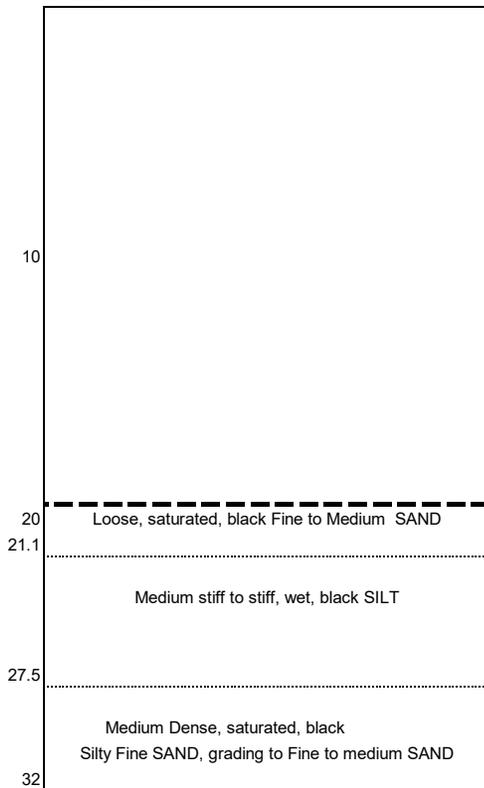
DESCRIPTION OF SAMPLES, TESTS, AND INSTALLATION - MONITORING WELL NO.

Field Rep: D. Cooper				Location: N200401.5 E1270065.7 NAD83		Ecology ID# BJA571		
Drilling Co.: Cascade				Ground surface elevation: 18.41 ft. NAVD88 (N. rim monument)				
Driller: James Goble				Date Completed: 02/12/15				
Drill Type: CME 55				Weather: Cloudy 50F				
Size/Type Casing: 10" HSA				Sampler: 3" dia. SPT				
Spl. No.	Type Sample Saved	PID (ppm)	Odor/ Sheen	Spl Depth (Ft.) From - To	Spl length (inches)	Blows/ 6 inches	Time	Sample Description
				0-20		-	1230	No Sampling from 0-20'. Lean concrete in cuttings
		0.2	NO/NS	20-21.5	18	5/7/5		M dense, sat, gry, F-M SAND 0.3' SILT interbed
		1.0	NO/NS	21.5-23	18	4/3/3		M stiff, wet, blk, F sandy, SILT
		46.5	SLO/NS	23-24.5	18	4/5/5		Stiff, wet, blk, SILT
MWB	Composite 24.5-26'	6.7	NO/NS	24.5-26	18	5/4/5	1310	As Above
		1.8	NO/NS	26-27.5	18	5/4/4		As Above
		1.9	NO/NS	27.5-29	18	2/3/3		Loose, sat, blk, silty, F SAND
		1.4	NO/NS	29-30.5	18	5/5/11		M dense, sat, blk, silty, F-M SAND
		2.1	NO/NS	30.5-32	18	4/7/7		M dense, sat. blk, F-M SAND

Bottom of boring @ 32.0'

Depth(ft.)

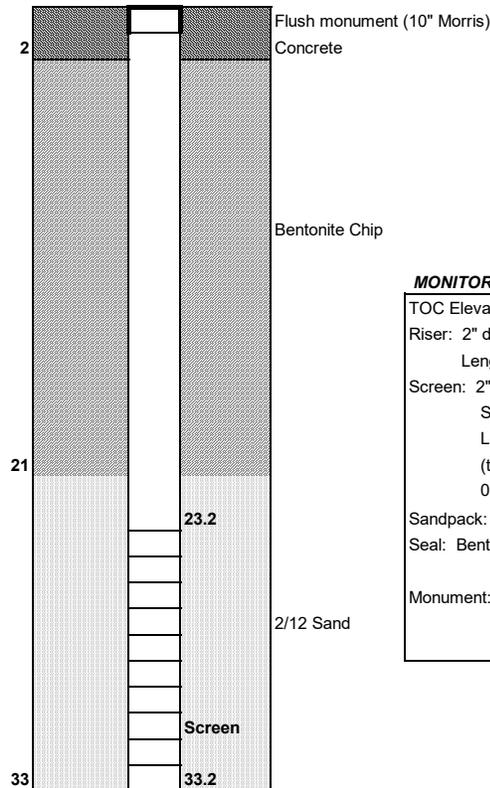
0 SUMMARY LOG



(Bottom of Boring)

NOTE: The summary log is an interpretation based on samples, drill action, and interpolation. Variations between what is shown and actual conditions should be anticipated.

MONITORING WELL DIAGRAM



MONITORING WELL INFORMATION

TOC Elevation: 18.00 ft, NAVD)
Riser: 2" dia.SCH 40 PVC Length: 23.2'
Screen: 2" dia. SCH 40 PVC Slot size: 0.010" Length: 10' (top/bot) 23.2/33.2 0.3' end cap
Sandpack: 2/12 colorado sand
Seal: Bentonite chip (top/bot) 2/21
Monument: 10" dia. Flush Mount (Morris) -0.3' to top of PVC/TOC

Abbreviations:

gry = gray; bwn = brown; blk = black; mot = mottled
 Sheen - NS= none, LS = Light, MS = Moderate, HS = Heavy
 Odor - NO= None, SLO = Slight, MO = Moderate, STO = Strong
 F = fine; M = medium, sat = pores saturated with water

DMC-MWC

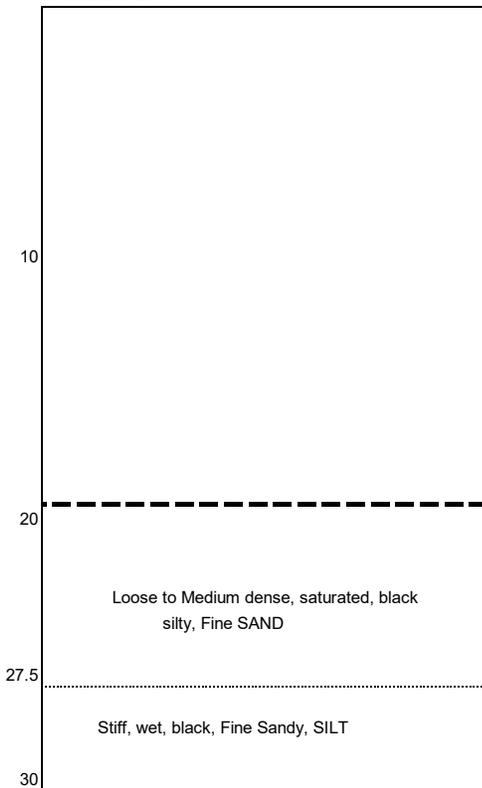
DESCRIPTION OF SAMPLES, TESTS, AND INSTALLATION - MONITORING WELL NO.

Field Rep: D. Cooper				Location: N200397.7 E1270178.7 NAD83		Ecology ID# BJA572		
Drilling Co.: Cascade				Ground surface elevation: 17.75 ft. NAVD88 (N. rim monument)				
Driller: James Goble				Date Completed: 2/13/2015				
Drill Type: CME 55				Weather: Clear 50F				
Size/Type Casing: 10" HSA				Sampler: 3" dia. SPT				
Spl. No.	Type Sample Saved	PID (ppm)	Odor/ Sheen	Spl Depth (Ft.) From - To	Spl length (inches)	Blows/ 6 inches	Time	Sample Description
				0-20		-	0815	No Sampling from 0-20'. Lean concrete in cuttings
		0.3	NO/NS	20-21.5	18	3/4/5		Loose, sat, blk, silty, F SAND
		4.8	NO/NS	21.5-23	18	4/6/8		M dense, sat, blk, silty, F SAND 0.5' SILT interbed
		0.3	NO/NS	23-24.5	18	8/8/8		M dense, sat, blk, silty, F SAND
MWC	Composite 24.5-26'	0.2	NO/NS	24.5-26	18	9/7/7	0900	M dense, sat, blk, silty, F SAND, w/organics, silt clasts
		0.1	NO/NS	26-27.5	18	6/4/4		M dense, sat, blk, silty, F SAND
		0.3	NO/NS	27.5-29	18	5/6/7		Stiff, wet, blk, F sandy, SILT
		0.4	NO/NS	29-30.5	18	5/7/7		Stiff, wet, blk, F sandy, SILT

Bottom of boring @ 32.0'

Depth(ft.)

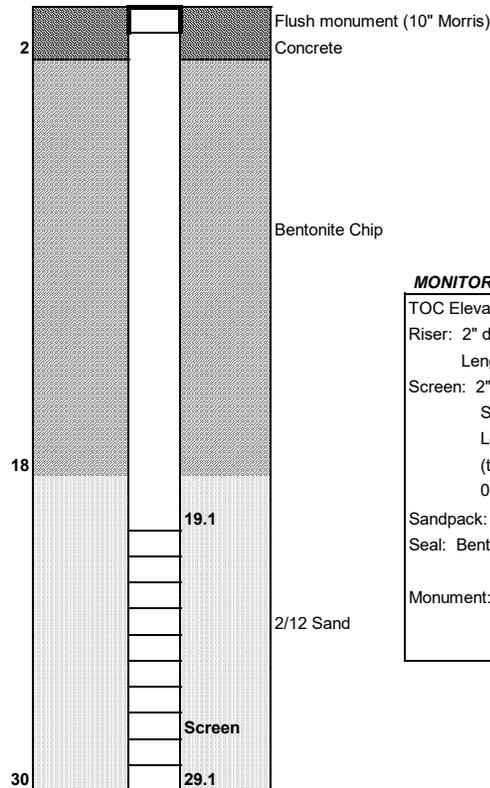
0 SUMMARY LOG



(Bottom of Boring)

NOTE: The summary log is an interpretation based on samples, drill action, and interpolation. Variations between what is shown and actual conditions should be anticipated.

MONITORING WELL DIAGRAM



MONITORING WELL INFORMATION

TOC Elevation: 17.48 ft. NAVD88
 Riser: 2" dia. SCH 40 PVC
 Length: 19.1'
 Screen: 2" dia. SCH 40 PVC
 Slot size: 0.010"
 Length: 10'
 (top/bot) 19.1/29.1
 0.3' end cap
 Sandpack: 2/12 colorado sand
 Seal: Bentonite chip
 (top/bot) 2/18
 Monument: 10" dia. Flush Mount (Morris)
 -0.3' to top of PVC/TOC

Abbreviations:

gry = gray; bwn = brown; blk = black; mot = mottled
 Sheen - NS= none, LS = Light, MS = Moderate, HS = Heavy
 Odor - NO= None, SLO = Slight, MO = Moderate, STO = Strong
 F = fine; M = medium, sat = pores saturated with water

APPENDIX B
DATA VALIDATION REPORTS - DMD Inc.
SEDIMENT AND SOIL ANALYTICAL DATA
October 2020 to January 2021

HOT-SPOT CHARACTERIZATION
ICS/NWC
SEATTLE, WASHINGTON



D.M.D., Inc.

Environmental & Toxicological Services

13706 SW Caster Road, Vashon, WA 98070-7428 (206) 463-6223 email: dmdinc111@gmail.com

MEMORANDUM

TO: Matt Dalton (DOF)

FROM: Raleigh Farlow

DATE: October 23, 2020

SUBJECT: Data Evaluation/Assessment for 16 Sediments Collected from an Estuarine Embayment “Hot-Spot” Area during September 2020 from the **ICS / [former] NW Cooperage Site, Seattle, WA**

Fifty-five sediment samples were collected by Dalton, Olmsted & Fuglevand (DOF) staff on September 15-21, 2020 for chemical characterization with a focus on selected indicator substances for “hot-spot” delineation and that could impact disposal alternatives. Samples were hand-delivered in a single delivery group (SDG 20I0306 [01-56]) to Analytical Resources Inc. (ARI) of Tukwila, Washington within 6 days of collection (on ice) at 0.3 – 7.4 °C. Sixteen samples were maintained at the project laboratory at 4 °C prior to analyses. The remaining samples were immediately placed into frozen archival storage for possible future analyses. No chemical preservatives are required for the intended analyses.

Sample collection, handling, and analyses were conducted in accordance with the project sampling and analysis plan (SAP) (*Sampling and Analysis Plan to Complete Remedial Investigation Sampling ICS / Former NW Cooperage Site, Seattle, Washington*, prepared by DOF, February 2012) and *Work Plan to Determine Extent of Hot-Spots and PCB Concentrations in Soil and Sediment Greater than 50 ppm, ICS [former] Northwest Cooperage Site, Seattle, Washington*, prepared by DOF, August 19, 2020 (WP). Specified target parameters and analytical methods are as follows.

petroleum hydrocarbons	NWTPH-Dx w/ no extract cleanup
mercury	EPA-M.7471B
RCRA TCLP 8 metals	Not evaluated in this review

PCB's as Aroclors	EPA-M.8082A w/ silica gel, H ₂ SO ₄ & S _x cleanup
lead	EPA-M.6010C

Samples were relinquished by DOF under chain-of-custody (C-O-C) procedure. All analyses for parameters reported in the attached results table were completed within the technical holding time requirements identified in the project SAP and/or within [U.S. EPA] recommended maximum holding times for solid samples. Organic parameters were extracted within 14 days from collection and analyzed within 7 days of extraction (acceptable holding times are 14/40

days), mercury was analyzed within 21 days since collection (≤ 28 days specified), and lead was analyzed within 21 days since collection (≤ 180 days specified). Sample holding times/conditions are determined to be acceptable or within SAP specifications.

Total petroleum hydrocarbon (TPH) analyses were performed without optional extract cleanups. PCB's analyses were performed with several extract cleanup options; these included – elemental sulfur (S_x) removal by M.3660B (TBAS option), strong acid (conc. H_2SO_4) digestion by M.3665A, and silica gel chromatographic cleanup by M.3630C. All project and QC (LCS/LCSD and MS/MSD) samples were subjected to the same procedures and options.

Lower **reporting limits** for all parameters met the requirements of the 08/20 Work Plan (Table 1). [PCBs – 20 $\mu g/kg$, TPH DRO – 5 mg/kg , TPH RRO – 10 mg/kg , Pb – 10 mg/kg , and Hg – 0.3 mg/kg .]

Method blanks (MB) were analyzed and reported for all analytical parameters. Method blanks for all parameters reported nondetects at associated lower reporting limits. No results required qualification due to potential bias associated with analytical/procedural contamination.

Initial and continuing **calibrations** (and calibration verifications/checks) were all within method specifications, with some minor exceptions. Some calibration verifications for PCBs were outside method specifications on one of the two chromatographic columns; associated sample quantitations were reported from the alternate column that was within acceptance limits. Initial calibrations for organic parameters (TPH, A1016 and A1260) consisted of 6 points (other target Aroclors calibrations consisted of single points), lead by ICP-AES a single point, and mercury consisted of six points, per method specifications. All initial calibration variations (RSD's) were within method acceptance limits (RSD's < 20 , COD's > 0.99). Second source verifications exhibited less than 20 RPD's, with the exception of 8 of 40 (20%) decachlorobiphenyl (DCBP as a surrogate for PCB's analyses) checks. DCBP exhibited up to 85 RPD positive bias associated with what is believed to be carryover on laboratory glassware and equipment. This is a high-use surrogate compound that exhibits unusual background pervasiveness in many environmental analytical laboratories. However, any elevated DCBP surrogate recoveries in project samples are attributed to elevated native PCB concentrations (which overwhelmed the potential variability attributed to relatively small background levels), especially in the presence of elevated levels of Aroclor 1260 (A1260 contains measureable levels of DCBP).

Laboratory control sample (**LCS**), matrix spike (**MS**), and surrogate compound recoveries were mostly within acceptable ranges for all reported analytes, when measurable. LCS's exhibited 82-114% recoveries, and MS's showed acceptable recoveries in the range of 82-106%, with the exception of Aroclor 1016 in HS-15, diesel in HS-7, and lead in HS-38, which exhibited high native levels of target analytes compared to the level of matrix spike (Aroclor 1248 in HS-15 was sufficiently high to overwhelm the Aroclor 1016 spike). Many extracts required multiple dilutions for measurement of PCB levels due to high levels of target analytes, resulting in the loss of measurable signals for the surrogate compounds (TCMX and DCBP). No results required qualification due to noncompliant recoveries.

LCS/LCSD, MS/MSD and metals duplicate analyses for assessment of analytical variability exhibited acceptable performance (< 20 RPD) for all measurements.

A review of TPH chromatographic profiles for all but one sample extract revealed a broad, unresolved complex mixture (UCM) between diesel fuel (or heating oil) and 20-30 weight lubricant oil. This profile is characteristic of mineral oil dielectric (C-17 to C-36), which overlaps that of diesel fuel (C-12 to C-24) and motor oil lubricant (C-24 to C-38). The attached table identifies the residual or lube-range of hydrocarbons as mineral oil dielectric. Residual range oil or lubricant is not apparent in these samples. The relatively high level of PCB's is associated with the presence of the mineral oil dielectric.

The algorithm used for identification of Aroclors in project samples was found to be sufficiently robust for reliable assignment of target analyte mixtures. Each Aroclor was evaluated by comparison of 3-4 representative congener peaks for each commercially available Aroclor mixture and subsequent evaluation of responses between chromatographic profiles on two dissimilar GC columns (ZB5 and ZB35). Comparability of quantitative responses between the two columns is required to be < 40 RPD for an accurate quantitative response for each target mixture. All Aroclors reported in the attached table met this requirement, with the exception of Aroclor 1248 in sample HSA-4_3-4, which required the assignment of the "Jp" qualifier code as an estimated concentration (dual column comparability was 43 RPD). The reported estimated concentration for Aroclor 1248 of 7410 µg/kg is the greater of the two responses. It is noted that the algorithm applied here (for this activity) in conjunction with the selected congener peaks for Aroclors 1260 and 1262 may not be able to consistently and accurately resolve these two Aroclors from each other. However, consistent reporting of [all] Aroclor 1260 rather than [some level of] Aroclor 1262, as it was applied here, yields greater resultant total PCB concentrations. Thus, any potential reporting bias for total PCBs in project samples should be expected to be slightly positive and error on the side of environmental safety.

A measure of field/station contaminant variability was performed by the submission and analysis of a blind field duplicate sample for station HSA-4_2-3. The primary and duplicate samples represent separate collections of material while on station. Greatest variability was exhibited by the inorganic parameters – lead RPD = 44 and mercury RPD = 32; while the organic parameters exhibited smaller variabilities – diesel-range TPH = 11 RPD, mineral oil RPD = 10, and total PCB's RPD = 19. This indicates relatively low analytical variabilities and a relatively well-mixed contaminated environment with little to minimal "nugget" effect present.

Sample results reported here and associated data quality are determined to be in compliance with method, SAP and WP requirements. Work plan requirements have been met and data completeness is determined to be 100%.

Remedial Investigation
ICS / [former] NW Cooperage, Seattle, WA
Estuarine Sediments "Hot-Spot" Characterization, September 2020

Field I.D.	Matrix	Collection Date	Comments	Lab I.D.	% solids %	Lead	Mercury	Total Petroleum Hydrocarbons	
						7439-92-1 mg/kg, dry	7439-97-6 mg/kg, dry	Diesel-range mg/kg, dry	Lube-range mg/kg, dry
HS-1	surficial sediment	9/15/2020	0 - 1'	20I0306-01	82	4.2	0.008 J	6.1 U	12 U
HS-5	surficial sediment	9/15/2020	0 - 1'	20I0306-03	38	133	1.5	1130	4090 *
HS-7	surficial sediment	9/16/2020	0 - 1'	20I0306-05	76	1280	31	4600	8410 *
HS-9	surficial sediment	9/16/2020	0 - 1'	20I0306-07	61	33,700	14	28,100	23,600 *
HS-12	surficial sediment	9/15/2020	0 - 1'	20I0306-10	44	1180	13	2490	6520 *
HS-15	surficial sediment	9/16/2020	0 - 1'	20I0306-13	61	5590	52	26,300	56,700 *
HS-21	surficial sediment	9/15/2020	0 - 1'	20I0306-19	56	9030	94	20,000	46,900 *
HS-29	surficial sediment	9/15/2020	0 - 1'	20I0306-24	62	3950	25	8390	21,600 *
HS-34	surficial sediment	9/16/2020	0 - 1'	20I0306-26	81	1680	3.9	4330	9760 *
HS-38	surficial sediment	9/21/2020	0 - 1'	20I0306-30	74	7890	52	6940	23,000 *
HSA-1_3-4	subsurface sediment	9/17/2020	3 - 4'	20I0306-36	66	35.9	0.26	185	267 *
HSA-2_3-4	subsurface sediment	9/17/2020	3 - 4'	20I0306-41	62	8440	1.2	23,700	21,100 *
HSA-3_3-3.5	subsurface sediment	9/18/2020	3 - 3.5'	20I0306-45	74	609	2.0	866	1870 *
HSA-4_2-3	subsurface sediment	9/18/2020	2 - 3'	20I0306-50	64	14,900	52	43,300	99,100 *
HSA-DUPL	HSA-4_2-3 duplicate	9/18/2020	2 - 3'	20I0306-55	65	23,400	72	48,300	109,000 *
HSA-4_3-4	subsurface sediment	9/18/2020	3 - 4'	20I0306-51	57	7200	2.7	25,700	20,500 *

black-bolded or highlighted TPH values resemble profile associated with mid-distillate or fuel oil.

** Profile resembles mineral oil dielectric.*

J = estimate associated with value less than the verifiable lower quantitation limit.

U = nondetected at the associated lower reporting limit.

Remedial Investigation
ICS / [former] NW Cooperage, Seattle, WA
Estuarine Sediments "Hot-Spot" Characterization, September 2020

<u>Field I.D.</u>	Aroclor 1016 12674-11-2 <u>µg/kg, dry</u>	Aroclor 1221 11104-28-2 <u>µg/kg, dry</u>	Aroclor 1232 11141-16-5 <u>µg/kg, dry</u>	Aroclor 1242 53469-21-9 <u>µg/kg, dry</u>	Aroclor 1248 12672-29-6 <u>µg/kg, dry</u>	Aroclor 1254 11097-69-1 <u>µg/kg, dry</u>	Aroclor 1260 11096-82-5 <u>µg/kg, dry</u>	Aroclor 1262 37324-23-5 <u>µg/kg, dry</u>	Aroclor 1268 11100-14-4 <u>µg/kg, dry</u>	total PCBs <u>µg/kg, dry</u>
HS-1	20 U	20 U	20 U	20 U	16 J	11 J	20 U	20 U	20 U	26
HS-5	497 U	497 U	497 U	497 U	6560	6910	4540	497 U	497 U	18,010
HS-7	2000 U	2000 U	2000 U	2000 U	29,500	20,500	11,800	2000 U	2000 U	61,800
HS-9	1630 U	1630 U	1630 U	1630 U	22,400	26,700	37,900	1630 U	1630 U	87,000
HS-12	5530 U	5530 U	5530 U	5530 U	71,100	56,000	30,000	5530 U	5530 U	157,100
HS-15	65,300 U	65,300 U	65,300 U	65,300 U	570,000	440,000	153,000	65,300 U	65,300 U	1,163,000
HS-21	1740 U	1740 U	1740 U	1740 U	19,200	27,900	13,100	1740 U	1740 U	60,200
HS-29	788 U	788 U	788 U	788 U	23,300	21,100	9680	788 U	788 U	54,080
HS-34	1530 U	1530 U	1530 U	1530 U	21,800	15,300	4720	1530 U	1530 U	41,820
HS-38	54,100 U	54,100 U	54,100 U	54,100 U	631,000	572,000	565,000	54,100 U	54,100 U	1,768,000
HSA-1_3-4	20 U	20 U	20 U	20 U	277	232	123	20 U	20 U	632
HSA-2_3-4	806 U	806 U	806 U	806 U	15,500	24,400	7170	806 U	806 U	47,070
HSA-3_3-3.5	199 U	199 U	199 U	199 U	1430	2040	742	199 U	199 U	4212
HSA-4_2-3	3860 U	3860 U	3860 U	3860 U	45,500	55,200	70,700	3860 U	3860 U	171,400
HSA-DUPL	7640 U	7640 U	7640 U	7640 U	62,700	64,400	80,500	7640 U	7640 U	207,600
HSA-4_3-4	200 U	200 U	200 U	200 U	7410 J_p	5120	3000	200 U	200 U	15,530

J = estimate associated with value less than the verifiable lower quantitation limit.

J_p = estimated value due to noncompliance with all criteria for identification and/or chemical interference.

U = nondetected at the associated lower reporting limit.



D.M.D., Inc.

Environmental & Toxicological Services

13706 SW Caster Road, Vashon, WA 98070-7428 (206) 463-6223 email: dmdinc111@gmail.com

MEMORANDUM

TO: Matt Dalton (DOF)

FROM: Raleigh Farlow

DATE: January 28, 2021

SUBJECT: Data Evaluation/Assessment for 23 [archived] Sediments Collected from an Estuarine Embayment “Hot-Spot” Area during September 2020 from the ICS / [former] NW Cooperage Site, Seattle, WA

Fifty-five sediment samples were collected by Dalton, Olmsted & Fuglevand (DOF) staff on September 15-21, 2020 for chemical characterization with a focus on selected indicator substances for “hot-spot” delineation and that could impact disposal alternatives. Samples were hand-delivered in a single delivery group (SDG 20I0306 [01-56]) to Analytical Resources Inc. (ARI) of Tukwila, Washington within 6 days of collection (on ice) at 0.3 – 7.4 °C. Sixteen samples (SDG 20I0306) were initially analyzed by NWTPH-Dx (petroleum hydrocarbons), M.8082A (PCB’s as Aroclors), M.7471B (mercury) and M.6010C (lead), and are reported in an October, 2020 data evaluation report. Those results are also reported here in the attached results table. Twenty-three sediment samples (SDG’s 20J0342 & 20K0256) were taken from frozen archival (-20 °C) storage for selected analyses. No chemical preservatives are required for the intended analyses.

Sample collection, handling, and analyses were conducted in accordance with the project sampling and analysis plan (SAP) (*Sampling and Analysis Plan to Complete Remedial Investigation Sampling ICS / Former NW Cooperage Site, Seattle, Washington*, prepared by DOF, February 2012) and *Work Plan to Determine Extent of Hot-Spots and PCB Concentrations in Soil and Sediment Greater than 50 ppm, ICS [former] Northwest Cooperage Site, Seattle, Washington*, prepared by DOF, August 19, 2020 (WP). Specified target parameters and analytical methods employed on the archived sediment samples are as follows.

PCB’s as Aroclors	EPA-M.8082A w/ silica gel, H ₂ SO ₄ & S _x cleanup	lead	EPA-M.6010C
-------------------	--	------	-------------

Samples were relinquished by DOF under chain-of-custody (C-O-C) procedure. All analyses for parameters reported in the attached results table were completed within the technical holding time requirements identified in the project SAP and/or within [U.S. EPA] recommended maximum holding times for solid samples. Organic parameters were extracted within 43 days from collection and analyzed within 11 days of extraction (acceptable holding times are 365/40

days @ -20 °C), and lead was analyzed within 41 days since collection (≤ 180 days specified). Sample holding times/conditions are determined to be acceptable or within SAP specifications.

PCB's analyses were performed with several extract cleanup options; these included – elemental sulfur (S_x) removal by M.3660B (TBAS option), strong acid (conc. H_2SO_4) digestion by M.3665A, and silica gel chromatographic cleanup by M.3630C. All project and QC (LCS/LCSD and MS/MSD) samples were subjected to the same procedures and options.

Lower **reporting limits** for all parameters met the requirements of the 08/20 Work Plan (Table 1). [PCBs – 20 $\mu g/kg$, and Pb – 10 mg/kg .] Any results reported less than the lower quantitation limits are determined to be estimates and assigned the “J” qualifier code.

Method blanks (MB) were analyzed and reported for all analytical parameters. Method blanks for all parameters reported nondetects at associated lower reporting limits. No results required qualification due to potential bias associated with analytical/procedural contamination.

Initial and continuing **calibrations** (and calibration verifications/checks) were all within method specifications, with some minor exceptions. Some calibration verifications for PCBs were outside method specifications on one of the two chromatographic columns; associated sample quantitations were reported from the alternate column that was within acceptance limits. Initial calibrations for PCB's (A1016 and A1260) consisted of 6 points (other target Aroclors calibrations consisted of single points), and lead by ICP-AES a single point, per method specifications. All initial calibration variations (RSD's) were within method acceptance limits (RSD's < 20). Second source verifications exhibited less than 20 RPD's. DCBP calibration checks exhibited elevated responses during initial analyses of samples in SDG 20J0342, requiring recalibration and generation of new response factors for accurate reporting of surrogate recovery performances.

Laboratory control sample (**LCS**), matrix spike (**MS**), and surrogate compound recoveries were mostly within acceptable ranges for all reported analytes, when measurable. LCS's exhibited 79-108% recoveries, and MS's generally showed nonmeasurable recoveries due to high native levels compared to spike levels (native levels overwhelmed spike responses). Many extracts required multiple dilutions for measurement of PCB levels due to high levels of target analytes, resulting in the loss of measurable signals for the surrogate compounds (TCMX and DCBP). DCBP also frequently exhibited positive bias due to contributions associated with elevated levels of Aroclor 1260 (Aroclor 1260 normally contains some DCBP). No results required qualification due to noncompliant or immeasurable recoveries.

LCS/LCSD for assessment of analytical variability exhibited acceptable performance (< 20 RPD) for all measurements. Lead (metals) duplicate analyses exhibited 23 RPD for HSA1_2-3 at 823 mg/kg , while the specification is < 20 . This is not unusual or unexpected for highly contaminated (high concentration) solids. Measures of analytical variability are determined to be acceptable.

The algorithm used for identification of Aroclors in project samples was found to be sufficiently robust for reliable assignment of target analyte mixtures. Each Aroclor was evaluated by

comparison of 3-4 representative congener peaks for each commercially available Aroclor mixture and subsequent evaluation of responses between chromatographic profiles on two dissimilar GC columns (ZB5 and ZB35). Comparability of quantitative responses between the two columns is required to be ≤ 40 RPD for an accurate quantitative response for each target mixture. All Aroclors reported in the attached table met this requirement, with the exception of Aroclor 1254 in samples HSA-3_5-6 and HSA-4_4-5, and Aroclor 1260 in HS-39, which required the assignment of the "J_P" qualifier code as an estimated concentration (dual column comparabilities were 46, 41 and 41 RPD, respectively). The reported estimated concentrations for these parameters and associated samples are the greater of the two responses for each sample.

Sample results reported here and associated data quality are determined to be in compliance with method, SAP and WP requirements. Work plan requirements have been met and data completeness is determined to be 100%.

Remedial Investigation
ICS / [former] NW Cooperage, Seattle, WA
Estuarine Sediments "Hot-Spot" Characterization, September 2020

Field I.D.	Matrix	Collection Date	Comments	Lab I.D.	% solids %	Lead	Mercury	Total Petroleum Hydrocarbons	
						7439-92-1 mg/kg, dry	7439-97-6 mg/kg, dry	Diesel-range mg/kg, dry	Lube-range mg/kg, dry
HS-1	surficial sediment	9/15/2020	0 - 1'	20I0306-01	82	4.2	0.008 J	6.1 U	12 U
HS-4	surficial sediment	9/15/2020	0 - 1'	20J0342-01	33				
HS-5	surficial sediment	9/15/2020	0 - 1'	20I0306-03	38	133	1.5	1130	4090 *
HS-6	surficial sediment	9/16/2020	0 - 1'	20K0256-01	58				
HS-7	surficial sediment	9/16/2020	0 - 1'	20I0306-05	76	1280	31	4600	8410 *
HS-8	surficial sediment	9/16/2020	0 - 1'	20J0342-02	74				
HS-9	surficial sediment	9/16/2020	0 - 1'	20I0306-07	61	33,700	14	28,100	23,600 *
HS-12	surficial sediment	9/15/2020	0 - 1'	20I0306-10	44	1180	13	2490	6520 *
HS-13	surficial sediment	9/15/2020	0 - 1'	20J0342-03	68				
HS-14	surficial sediment	9/15/2020	0 - 1'	20J0342-04	72				
HS-15	surficial sediment	9/16/2020	0 - 1'	20I0306-13	61	5590	52	26,300	56,700 *
HS-17	surficial sediment	9/16/2020	0 - 1'	20J0342-05	51				
HS-21	surficial sediment	9/15/2020	0 - 1'	20I0306-19	56	9030	94	20,000	46,900 *
HS-22	surficial sediment	9/15/2020	0 - 1'	20J0342-06	46				
HS-23	surficial sediment	9/15/2020	0 - 1'	20J0342-07	59				
HS-29	surficial sediment	9/15/2020	0 - 1'	20I0306-24	62	3950	25	8390	21,600 *
HS-30	surficial sediment	9/15/2020	0 - 1'	20J0342-08	71				
HS-34	surficial sediment	9/16/2020	0 - 1'	20I0306-26	81	1680	3.9	4330	9760 *
HS-36	surficial sediment	9/16/2020	0 - 1'	20J0342-09	73				
HS-37	surficial sediment	9/21/2020	0 - 1'	20K0256-02	77				
HS-38	surficial sediment	9/21/2020	0 - 1'	20I0306-30	74	7890	52	6940	23,000 *
HS-39	surficial sediment	9/21/2020	0 - 1'	20K0256-03	91				
HS-40	surficial sediment	9/21/2020	0 - 1'	20J0342-10	95				
HSA-1_1-2	subsurface sediment	9/17/2020	1 - 2'	20K0256-04	54				
HSA-1_2-3	subsurface sediment	9/17/2020	2 - 3'	20J0342-11	65	880			
HSA-1_3-4	subsurface sediment	9/17/2020	3 - 4'	20I0306-36	66	35.9	0.26	185	267 *
HSA-1_4-5	subsurface sediment	9/17/2020	4 - 5'	20K0256-05	62				
HSA-2_2-3	subsurface sediment	9/17/2020	2 - 3'	20J0342-12	58	12,400			
HSA-2_3-4	subsurface sediment	9/17/2020	3 - 4'	20I0306-41	62	8440	1.2	23,700	21,100 *
HSA-2_4-5	subsurface sediment	9/17/2020	4 - 5'	20J0342-13	72	4050			
HSA-3_2-3	subsurface sediment	9/18/2020	2 - 3'	20J0342-14	61	7290			
HSA-3_3-3.5	subsurface sediment	9/18/2020	3 - 3.5'	20I0306-45	74	609	2.0	866	1870 *
HSA-3_5-6	subsurface sediment	9/18/2020	5 - 6'	20J0342-15	72	16.2			
HSA-4_2-3	subsurface sediment	9/18/2020	2 - 3'	20I0306-50	64	14,900	52	43,300	99,100 *
HSA-DUPL	HSA-4_2-3 duplicate	9/18/2020	2 - 3'	20I0306-55	65	23,400	72	48,300	109,000 *
HSA-4_3-4	subsurface sediment	9/18/2020	3 - 4'	20I0306-51	57	7200	2.7	25,700	20,500 *
HSA-4_4-5	subsurface sediment	9/18/2020	4 - 5'	20J0342-16	65	1110			
HSA-4_5-6	subsurface sediment	9/18/2020	5 - 6'	20J0342-17	74	213			
HSA-4_6-7	subsurface sediment	9/18/2020	6 - 7'	20K0256-06	73				

black-bolded or highlighted TPH values resemble profile associated with mid-distillate or fuel oil.

** Profile resembles mineral oil dielectric.*

J = estimate associated with value less than the verifiable lower quantitation limit.

U = nondetected at the associated lower reporting limit.

Remedial Investigation
ICS / [former] NW Cooperage, Seattle, WA
Estuarine Sediments "Hot-Spot" Characterization, September 2020

<u>Field ID.</u>	Aroclor 1016 12674-11-2 µg/kg, dry	Aroclor 1221 11104-28-2 µg/kg, dry	Aroclor 1232 11141-16-5 µg/kg, dry	Aroclor 1242 53469-21-9 µg/kg, dry	Aroclor 1248 12672-29-6 µg/kg, dry	Aroclor 1254 11097-69-1 µg/kg, dry	Aroclor 1260 11096-82-5 µg/kg, dry	Aroclor 1262 37324-23-5 µg/kg, dry	Aroclor 1268 11100-14-4 µg/kg, dry	total PCBs mg/kg, dry
HS-1	20 U	20 U	20 U	20 U	16 J	11 J	20 U	20 U	20 U	0.026
HS-4	498 U	498 U	498 U	498 U	5360	8420	4990	498 U	498 U	18.8
HS-5	497 U	497 U	497 U	497 U	6560	6910	4540	497 U	497 U	18.0
HS-6	19.8 U	19.8 U	19.8 U	19.8 U	20.9	11.5 J	9.5 J	19.8 U	19.8 U	0.042
HS-7	2000 U	2000 U	2000 U	2000 U	29,500	20,500	11,800	2000 U	2000 U	61.8
HS-8	497 U	497 U	497 U	497 U	17,400	14,500	5420	497 U	497 U	37.3
HS-9	1630 U	1630 U	1630 U	1630 U	22,400	26,700	37,900	1630 U	1630 U	87.0
HS-12	5530 U	5530 U	5530 U	5530 U	71,100	56,000	30,000	5530 U	5530 U	157
HS-13	497 U	497 U	497 U	497 U	9430	14,900	6290	497 U	497 U	30.6
HS-14	993 U	993 U	993 U	993 U	37,600	32,100	14,000	993 U	993 U	83.7
HS-15	65,300 U	65,300 U	65,300 U	65,300 U	570,000	440,000	153,000	65,300 U	65,300 U	1163
HS-17	49,700 U	49,700 U	49,700 U	49,700 U	296,000	197,000	78,900	49,700 U	49,700 U	572
HS-21	1740 U	1740 U	1740 U	1740 U	19,200	27,900	13,100	1740 U	1740 U	60.2
HS-22	49,800 U	49,800 U	49,800 U	49,800 U	241,000	297,000	296,000	49,800 U	49,800 U	834
HS-23	497 U	497 U	497 U	497 U	12,000	12,300	8240	497 U	497 U	32.5
HS-29	788 U	788 U	788 U	788 U	23,300	21,100	9680	788 U	788 U	54.1
HS-30	496 U	496 U	496 U	496 U	4900	5190	8170	496 U	496 U	18.3
HS-34	1530 U	1530 U	1530 U	1530 U	21,800	15,300	4720	1530 U	1530 U	41.8
HS-36	993 U	993 U	993 U	993 U	34,600	16,200	10,400	993 U	993 U	61.2
HS-37	2520 U	2520 U	2520 U	2520 U	755,000	306,000	43,600	2520 U	2520 U	1105
HS-38	54,100 U	54,100 U	54,100 U	54,100 U	631,000	572,000	565,000	54,100 U	54,100 U	1768
HS-39	1060 U	1060 U	1060 U	1060 U	27,600	19,000	10,000 J_p	1060 U	1060 U	56.6
HS-40	496 U	496 U	496 U	496 U	6670	11,900	5590	496 U	496 U	24.2
HSA-1_1-2	1710 U	1710 U	1710 U	1710 U	19,000	26,100	9800	1710 U	1710 U	54.9
HSA-1_2-3	199 U	199 U	199 U	199 U	2380	2450	955	199 U	199 U	5.79
HSA-1_3-4	20 U	20 U	20 U	20 U	277	232	123	20 U	20 U	0.63
HSA-1_4-5	199 U	199 U	199 U	199 U	5750	5160	1830	199 U	199 U	12.7
HSA-2_2-3	1990 U	1990 U	1990 U	1990 U	39,000	57,400	33,200	1990 U	1990 U	130
HSA-2_3-4	806 U	806 U	806 U	806 U	15,500	24,400	7170	806 U	806 U	47.1
HSA-2_4-5	99.5 U	99.5 U	99.5 U	99.5 U	2100	2610	1530	99.5 U	99.5 U	6.24
HSA-3_2-3	497 U	497 U	497 U	497 U	14,800	19,400	9210	497 U	497 U	43.4
HSA-3_3-3.5	199 U	199 U	199 U	199 U	1430	2040	742	199 U	199 U	4.21
HSA-3_5-6	19.9 U	19.9 U	19.9 U	19.9 U	24.2	30.8 J_p	11.7 J	19.9 U	19.9 U	0.067
HSA-4_2-3	3860 U	3860 U	3860 U	3860 U	45,500	55,200	70,700	3860 U	3860 U	171
HSA-DUPL	7640 U	7640 U	7640 U	7640 U	62,700	64,400	80,500	7640 U	7640 U	208
HSA-4_3-4	200 U	200 U	200 U	200 U	7410 J_p	5120	3000	200 U	200 U	15.5
HSA-4_4-5	1990 U	1990 U	1990 U	1990 U	20,300	8850 J_p	4050	1990 U	1990 U	33.2
HSA-4_5-6	99.6 U	99.6 U	99.6 U	99.6 U	1560	859	495	99.6 U	99.6 U	2.91
HSA-4_6-7	197 U	197 U	197 U	197 U	1170	614	219	197 U	197 U	2.0

J = estimate associated with value less than the verifiable lower quantitation limit.

J_p = estimated value due to noncompliance with all criteria for identification and/or chemical interference.

U = nondetected at the associated lower reporting limit.



D.M.D., Inc.

Environmental & Toxicological Services

13706 SW Caster Road, Vashon, WA 98070-7428 (206) 852-3577 email: dmdinc111@gmail.com

MEMORANDUM

TO: Matt Dalton (DOF)

FROM: Raleigh Farlow

DATE: April 9, 2021

SUBJECT: Data Evaluation/Assessment for 197 Soils Collected from the **ICS / [former] NW Cooperage Site**, Seattle, WA during October, 2020 through February 2021

One hundred ninety-seven samples were collected by Dalton, Olmsted & Fuglevand (DOF) staff on October 26, 2020 through February 1, 2021 for chemical characterization with a focus on selected indicator substances for “hot-spot” delineation and that could impact disposal alternatives. Samples were hand-delivered in thirteen delivery groups (SDGs 20J0384, 20J0387, 20J0410, 20K0007, 20K0008, 20K0126, 20K0145, 21A0361, 21A0366, 21A0377, 21A0396, 21B0031 and 21B0072) to Analytical Resources Inc. (ARI) of Tukwila, Washington within 2 days of collection (on ice) at 0.1 – 5.8 °C. SDG 21A0329 consists of 30 samples previously archived at -18 °C upon arrival at the project laboratory and withdrawn for analyses on January 22, 2021. No chemical preservatives are required for the intended analyses. Sample results are reported here in the attached results table.

Sample collection, handling, and analyses were conducted in accordance with the project sampling and analysis plan (SAP) (*Sampling and Analysis Plan to Complete Remedial Investigation Sampling ICS / Former NW Cooperage Site, Seattle, Washington*, prepared by DOF, February 2012) and *Work Plan to Determine Extent of Hot-Spots and PCB Concentrations in Soil and Sediment Greater than 50 ppm, ICS [former] Northwest Cooperage Site, Seattle, Washington*, prepared by DOF, August 19, 2020 (WP). Specified target parameters and analytical methods employed on soil samples are as follows.

PCBs as Aroclors	EPA-M.8082A w/ silica gel, H ₂ SO ₄ & S _x cleanup	TPHD	NWTPH-Dx w/ no extract cleanup
Lead (Pb)	EPA-M.6010C	Mercury (Hg)	EPA-M.7471B

Samples were relinquished by DOF under chain-of-custody (C-O-C) procedure. All analyses for parameters reported in the attached results table were completed within the technical holding time requirements identified in the project SAP and/or within [U.S. EPA] recommended maximum holding times for solid samples. Maximum recommended holding times for organic parameters are 14/40 days at 4 °C or 365/40 days at -18 °C, lead 180 days at 4 °C or 365 days at -18 °C, and mercury 28 days at 4 °C or 365 days at -18 °C. Sample holding times/conditions are determined to be acceptable or within SAP specifications.

PCBs analyses were performed with several extract cleanup options; these included – elemental sulfur (S_x) removal by M.3660B (TBAS option), strong acid (conc. H_2SO_4) digestion by M.3665A, and silica gel chromatographic cleanup by M.3630C. All project and QC (LCS/LCSD and MS/MSD) samples were subjected to the same procedures and options. Analyses for TPH-Dx were not subjected to any extract cleanup options.

Lower **reporting limits** for all parameters met the requirements of the 08/20 Work Plan (Table 1). [PCBs – 20 $\mu\text{g}/\text{kg}$, Diesel-range TPH – 5 mg/kg , Motor oil (lube)-range TPH – 10 mg/kg , mercury – 0.025 mg/kg , and Pb – 2 mg/kg .] Any results reported less than the lower quantitation limits are determined to be estimates and assigned the “J” qualifier code.

Method blanks (MB) were analyzed and reported for all analytical parameters. Method blanks for all parameters reported nondetects at associated lower reporting limits. No results required qualification due to potential bias associated with analytical/procedural contamination.

Initial and continuing **calibrations** (and calibration verifications/checks) were all within method specifications, with some minor exceptions. Some calibration verifications for PCBs were outside method specifications on one of the two chromatographic columns; associated sample quantitations were reported from the alternate column that was within acceptance limits. Initial calibrations for PCBs (A1016 and A1260), TPH-Dx, and mercury consisted of 6 points (other target Aroclors calibrations consisted of single points), and lead by ICP-AES a single point, per method specifications. All initial calibration variations (RSDs) were within method acceptance limits (RSDs < 20). Second source verifications exhibited less than 20 RPDs.

Laboratory control sample (**LCS**), matrix spike (**MS**), and surrogate compound recoveries were mostly within acceptable ranges for all reported analytes, when measurable. LCSs exhibited 69-117% recoveries, and MSs occasionally showed nonmeasurable recoveries due to high native levels compared to spike levels (native levels overwhelmed spike responses). Many extracts required multiple dilutions for measurement of PCB and TPH levels due to high levels of target analytes, resulting in the loss of measurable signals for the surrogate compounds. DCBP (decachlorobiphenyl, one of two surrogate compounds for PCBs analyses) also frequently exhibited positive bias due to contributions associated with elevated levels of Aroclor 1260 (Aroclor 1260 normally contains some DCBP). No results required qualification due to noncompliant or immeasurable recoveries.

LCS/LCSD for assessment of analytical variability exhibited acceptable performance (< 20 RPD) for all measurements. MS/MSD and duplicate analyses for determination of measurement variabilities exhibited as much as 124 RPD for mercury and 96 RPD for lead, while the specification is < 20. This is not unusual or unexpected for highly contaminated (high concentration) solids. All organic parameters exhibited less than the 30 RPD specification for duplicate analyses. The blind replicate sample for LP18-10 exhibits an RPD 186 for lead, while the other parameters show less variability. Measures of analytical variability are determined to be acceptable [for contaminated solid matrices].

The algorithm used for identification of Aroclors in project samples was found to be sufficiently robust for reliable assignment of target analyte mixtures in approximately 98% of the cases.

Each Aroclor was evaluated by comparison of 3-4 representative congener peaks for each commercially available Aroclor mixture and subsequent evaluation of responses between chromatographic profiles on two dissimilar GC columns (ZB5 and ZB35). Comparability of quantitative responses between the two columns is required to be ≤ 40 RPD for an accurate quantitative response for each target mixture. All Aroclors reported in the attached table met this requirement, with the exception of Aroclor 1248 in samples PP39-2.5 (RPD 41), PP9-5 (RPD 72) and LP15-10 (RPD 50); Aroclor 1254 in samples PP38-5 (RPD 46), PP35-17.5 (RPD 102), PP12-2.5 (RPD 54), PP12-5 (RPD 42), LP10-5 (RPD 41) and LP3-20W-2 (RPD 59); and Aroclor 1260 in PP38-5 (RPD 48) and P8-20NW-1 (RPD 52), which required the assignment of the “J_p” qualifier code as an estimated concentration. The reported estimated concentrations for these parameters and associated samples are the greater of the two responses for each sample.

An examination of the TPH chromatographic profiles reveals a characteristic pattern that overlaps the diesel-range and the motor oil or lube-range of hydrocarbons in most of the soil samples. This characteristic pattern resembles the profile of mineral oil dielectric fluid. The attached results table identifies the presence of mineral oil-like profiles in samples by “green” highlighting with asterisked results for lube-range hydrocarbons. Normal bold-type highlighting identifies the presence of profiles resembling either diesel or weathered diesel fuel, or motor oil.

Sample results reported here and associated data quality are determined to be in compliance with method, SAP and WP requirements. Work plan requirements have been met and data completeness is determined to be 100%.

Remedial Investigation "Hot-spot" Identification
ICS / [former] NW Cooperage, Seattle, WA
Site Soils Characterization, 2020-2021

Field I.D.	Matrix	Collection Date	Lab I.D.	% solids	Lead	Mercury	Total Petroleum Hydrocarbons	
				%	7439-92-1 mg/kg, dry	7439-97-6 mg/kg, dry	Diesel-range mg/kg, dry	Lube-range mg/kg, dry
LP3-10E-2	soil	2/1/2021	21B0072-10	89	134	0.23	46	238 *
LP3-10E-5	soil	2/1/2021	21B0072-11	85	88	0.037	38	188 *
LP3-10E-10	soil	2/1/2021	21B0072-12	70	4.0	0.041	19	57
LP3-10N-3	soil	1/29/2021	21B0031-14	86	153	0.97	17	81 *
LP3-10N-6	soil	1/29/2021	21B0031-15	85	669	1.5	11,800	21,700 *
LP3-10N-10	soil	1/29/2021	21B0031-16	72	6.3	0.11	379	663 *
LP3-10S-5	soil	1/29/2021	21B0031-07	83	53	0.16	438	1370 *
LP3-10S-6	soil	1/29/2021	21B0031-08	83	5070	4.1	12,800	24,700 *
LP3-10S-10	soil	1/29/2021	21B0031-09	74	4.3	0.059	105	113 *
LP3-10W-3	soil	1/29/2021	21B0031-10	88	150	0.31	85	335 *
LP3-10W-6	soil	1/29/2021	21B0031-11	82	3100	6.0	10,500	21,300 *
LP3-10W-10	soil	1/29/2021	21B0031-12	67	80	0.38	3300	7630 *
LP3-10W-14	soil	1/29/2021	21B0031-13	59	12	0.14	416	459 *
LP3-20N-2	soil	2/1/2021	21B0072-04	89	586	0.38	135	599 *
LP3-20N-6	soil	2/1/2021	21B0072-05	87	2370	4.9	10,900	19,700 *
LP3-20N-10	soil	2/1/2021	21B0072-06	72	64	0.096	215	455 *
LP3-20S-5	soil	2/1/2021	21B0072-01	79	46	0.041	93	265
LP3-20S-7	soil	2/1/2021	21B0072-02	75	2890	5.8	11,000	24,800 *
LP3-20S-10	soil	2/1/2021	21B0072-03	75	4.9	0.032	238	237
LP3-20W-2	soil	2/1/2021	21B0072-07	88	113	0.20	2460	5530 *
LP3-20W-6	soil	2/1/2021	21B0072-08	83	1580	12	3880	8880 *
LP3-20W-10	soil	2/1/2021	21B0072-09	71	6.6	0.066	249	299 *
LP5-5	soil	1/28/2021	21A0396-19	74	9.9	0.17	189	509 *
LP5-7	soil	1/28/2021	21A0396-20	78	5.5	0.074	62	112 *
LP5-10	soil	1/28/2021	21A0396-21	74	2.6 J	0.022 J	28	51 *
LP6-6	soil	1/27/2021	21A0377-03	82	210	0.22	565	1300 *
LP6-10	soil	1/27/2021	21A0377-04	56	892	28	9940	23,500 *
LP6-12	soil	1/27/2021	21A0377-05	72	6.5	0.046	128	228 *
LP8-10	soil	1/27/2021	21A0377-01	72	31	0.15	333	531 *
LP8-12	soil	1/27/2021	21A0377-02	73	2.3 J	0.034	72	73 *
LP9-5	soil	1/27/2021	21A0377-12	76	2.9	0.026 J	7 U	16
LP9-8	soil	1/27/2021	21A0377-13	73	3.1	0.027 J	7	20 *
LP9-11	soil	1/27/2021	21A0377-14	72	2.3 J	0.014 J	8	24
LP10-5	soil	1/27/2021	21A0377-09	83	119	0.088	559	1180 *
LP10-7	soil	1/27/2021	21A0377-10	70	311	0.12	3680	11,200 *
LP10-10	soil	1/27/2021	21A0377-11	72	7.6	0.17	90	122 *
LP11-3	soil	1/27/2021	21A0377-06	88	19	0.070	175	443 *
LP11-6	soil	1/27/2021	21A0377-07	84	144	0.15	704	1200 *
LP11-11	soil	1/27/2021	21A0377-08	81	381	0.38	751	1260 *
LP12-5	soil	1/28/2021	21A0396-16	82	179	0.19	5040	10,800 *
LP12-7	soil	1/28/2021	21A0396-17	74	7.0	0.078	128	240 *

Remedial Investigation "Hot-spot" Identification
ICS / [former] NW Cooperage, Seattle, WA
Site Soils Characterization, 2020-2021

Field I.D.	Matrix	Collection Date	Lab I.D.	% solids	Lead	Mercury	Total Petroleum Hydrocarbons	
				%	7439-92-1 mg/kg, dry	7439-97-6 mg/kg, dry	Diesel-range mg/kg, dry	Lube-range mg/kg, dry
LP12-10	soil	1/28/2021	21A0396-18	69	3.0	0.046	82	123 *
LP13-5	soil	1/28/2021	21A0396-12	87	40	0.14	346	708 *
LP13-10	soil	1/28/2021	21A0396-14	58	69	0.85	9000	20,100 *
LP13-12	soil	1/28/2021	21A0396-15	74	2.0 J	0.023 J	105	182 *
LP14-5	soil	1/28/2021	21A0396-09	84	42	0.41	1770	4450 *
LP14-7	soil	1/28/2021	21A0396-10	81	4.3	0.15	103	240 *
LP14-10	soil	1/28/2021	21A0396-11	72	5.6	0.061	186	237 *
LP15-5	soil	1/28/2021	21A0396-01	89	22	0.045	57	170 *
LP15-10	soil	1/28/2021	21A0396-03	53	48	0.31	1310	3060 *
LP15-14	soil	1/28/2021	21A0396-05	66	4.6	0.056	33	112
LP16-5	soil	1/28/2021	21A0396-06	75	60	0.12	103	290 *
LP16-7	soil	1/28/2021	21A0396-07	71	13	0.28	7 U	20
LP16-10	soil	1/28/2021	21A0396-08	69	1.9 J	0.036	18	101
LP17-6	soil	1/29/2021	21B0031-01	86	69	0.045	44	205 *
LP17-10	soil	1/29/2021	21B0031-02	62	238	0.89	1870	1430 *
LP17-14	soil	1/29/2021	21B0031-03	74	0.99 J	0.027 U	10	77
LP18-5	soil	1/29/2021	21B0031-04	80	371	0.13	29	228
LP18-7	soil	1/29/2021	21B0031-05	54	447	0.35	2040	6290 *
LP18-10	soil	1/29/2021	21B0031-06	71	56	0.025 J	14	81
LP-DUP	blind replicate of LP18-10		21B0031-17	71	2.4 J	0.030 J	23	115
P8-10E-1	soil	1/25/2021	21A0361-25	93	148	0.36	2550	5040 *
P8-10E-5	soil	1/25/2021	21A0361-27	88	23	0.083	542	1240 *
P8-10N-1	soil	1/25/2021	21A0361-29	91	78	0.070	1190	1740 *
P8-10N-5	soil	1/25/2021	21A0361-31	85	31	0.19	111	197 *
P8-10NE-1	soil	1/25/2021	21A0361-17	79	6710	0.52	2040	4220 *
P8-10NE-5	soil	1/25/2021	21A0361-19	84	50	0.16	208	390 *
P8-10NW-1	soil	1/25/2021	21A0361-05	89	294	0.40	5750	11,200 *
P8-10NW-5	soil	1/25/2021	21A0361-07	82	55	0.15	172	437 *
P8-10S-1	soil	11/6/2020	20K0145-15	95	15	0.48	1500	3100 *
P8-10S-2.5	soil	11/6/2020	21A0329-30	93			222	632
P8-10S-5	soil	11/6/2020	20K0145-17	93	86	0.17	102	218 *
P8-10SE-1	soil	1/25/2021	21A0361-13	95	12	0.026	1050	2380 *
P8-10SE-5	soil	1/25/2021	21A0361-15	93	26	0.12	216	463 *
P8-15SW-1	soil	1/25/2021	21A0361-09	94	212	2.7	2160	4080 *
P8-15SW-5	soil	1/25/2021	21A0361-11	84	17	0.076	314	468 *
P8-20N-1	soil	1/25/2021	21A0361-01	83	3780	3.1	8590	31,200 *
P8-20N-5	soil	1/25/2021	21A0361-03	89	68	0.18	101	305 *
P8-20NW-1	soil	1/26/2021	21A0366-01	88	226	1.1	6490	13,900 *
P8-20NW-5	soil	1/26/2021	21A0366-03	82	207	0.71	119	443 *
P8-30N-1	soil	1/26/2021	21A0366-09	87	1440	0.70	2700	7270 *
P8-30N-5	soil	1/26/2021	21A0366-11	88	4.5	0.025 U	23	19

Remedial Investigation "Hot-spot" Identification
ICS / [former] NW Cooperage, Seattle, WA
Site Soils Characterization, 2020-2021

Field I.D.	Matrix	Collection Date	Lab I.D.	% solids	Lead	Mercury	Total Petroleum Hydrocarbons	
				%	7439-92-1 mg/kg, dry	7439-97-6 mg/kg, dry	Diesel-range mg/kg, dry	Lube-range mg/kg, dry
P8-30NW-1	soil	1/26/2021	21A0366-05	90	75	0.52	4250	14,200 *
P8-30NW-5	soil	1/26/2021	21A0366-07	89	5.7	0.038	151	138
P8-7W-1	soil	1/25/2021	21A0361-21	94	31	0.058	4800	11,600 *
P8-7W-5	soil	1/25/2021	21A0361-23	88	112	0.33	85	141 *
PP1-5	soil	11/5/2020	20K0145-02	89	17	0.18	5.6 U	19 *
PP1-7.5	soil	11/5/2020	20K0145-03	83	9.8	0.019 J	6.0 U	16 *
PP2-5	soil	11/5/2020	20K0145-07	83	2.3 J	0.012 J	6.0 U	14
PP2-7.5	soil	11/5/2020	20K0145-08	77	2.3 J	0.008 J	6.5 U	13 U
PP3-2	soil	11/4/2020	20K0126-22	91	88	0.056	288	4090
PP3-5	soil	11/4/2020	20K0126-24	80	15	0.046	6.3 U	13 U
PP4-2.5	soil	10/30/2020	20K0007-31	88	4.1	0.031	5.6 U	17
PP4-7.5	soil	10/30/2020	20K0007-33	76	1.3 J	0.014 J	11	14
PP5-2	soil	11/5/2020	20K0145-11	74	19	0.046	29	69 *
PP5-8	soil	11/5/2020	20K0145-13	71	3.2	0.12	7.1 U	19
PP7-2.5	soil	11/4/2020	20K0126-16	92	2.9	0.007 J	5.6	11
PP7-7.5	soil	11/4/2020	20K0126-18	77	2.3 J	0.011 J	25	29
PP8-2.5	soil	10/30/2020	21A0329-16	69			1160	3550 *
PP8-5	soil	10/30/2020	20K0007-02	78	18	0.059	92	238 *
PP8-7.5	soil	10/30/2020	21A0329-17	48				
PP8-10	soil	10/30/2020	20K0007-04	71	3.1	0.036	7.0 U	18
PP9-2.5	soil	10/30/2020	20K0007-25	87	14	0.045	13	31
PP9-5	soil	10/30/2020	21A0329-20	77				
PP9-7.5	soil	10/30/2020	20K0007-27	55	2.7 J	0.026 J	52	183
PP10-2.5	soil	10/30/2020	20K0007-19	89	2.4	0.012 J	4140	279 U
PP10-5	soil	10/30/2020	21A0329-19	72			42	20
PP10-7.5	soil	10/30/2020	20K0007-21	77	1.6 J	0.013 J	16	27
PP11-2.5	soil	10/30/2020	20K0007-07	80	5.7	0.025	20	29
PP11-7.5	soil	10/30/2020	20K0007-09	74	4.7	0.027	35	43
PP12-2.5	soil	10/30/2020	20K0007-13	83	16	0.096	12,100	1640
PP12-5	soil	10/30/2020	21A0329-18	75			7630	852
PP12-7.5	soil	10/30/2020	20K0007-15	78	1.4 J	0.013 J	39	25
PP13-2.5	soil	11/4/2020	20K0126-11	77	26	0.038	5690	2340
PP13-5	soil	11/4/2020	20K0126-12	77	5.5	0.043	24	17
PP15-2.5	soil	11/4/2020	20K0126-01	78	55	0.076	49	73 *
PP15-5	soil	11/4/2020	20K0126-02	69	10	0.086	51	40 *
PP16-2.5	soil	11/4/2020	20K0126-06	82	11,800	0.13	2520	5190 *
PP16-5	soil	11/4/2020	20K0126-07	77	4.1	0.030 J	187	141 *
PP16-7.5	soil	11/4/2020	21A0329-29	67				
PP17-2	soil	10/29/2020	20K0008-01	77	943	0.13	8010	13,700 *
PP17-5	soil	10/29/2020	21A0329-21	81	23		169	296 *
PP17-7.5	soil	10/29/2020	20K0008-03	66	3.0	0.036	58	151

Remedial Investigation "Hot-spot" Identification
ICS / [former] NW Cooperage, Seattle, WA
Site Soils Characterization, 2020-2021

Field I.D.	Matrix	Collection Date	Lab I.D.	% solids	Lead	Mercury	Total Petroleum Hydrocarbons	
				%	7439-92-1 mg/kg, dry	7439-97-6 mg/kg, dry	Diesel-range mg/kg, dry	Lube-range mg/kg, dry
PP18-2.5	soil	10/29/2020	21A0329-23	74	6270		8470	24,000 *
PP18-5	soil	10/29/2020	20K0008-14	80	2410	0.50	1180	2130 *
PP18-7.5	soil	10/29/2020	21A0329-24	72	23		245	339 *
PP18-10	soil	10/29/2020	20K0008-16	70	13	0.031	443	944 *
PP19-2.5	soil	10/29/2020	20K0008-20	78	386	0.74	1540	2110 *
PP19-5	soil	10/29/2020	21A0329-25	72		0.14	287	307 *
PP19-7.5	soil	10/29/2020	20K0008-22	74	8.1	0.069	50	43 *
PP20-5	soil	10/29/2020	20K0008-26	80	8.1	0.015	26	20
PP20-10	soil	10/29/2020	20K0008-28	72	2.5 J	0.033	6.9 U	21
PP21-2.5	soil	10/28/2020	20J0410-27	83	32	0.12	124	246 *
PP21-7.5	soil	10/28/2020	20J0410-29	47	33	0.057	127	440 *
PP22-2.5	soil	10/29/2020	20K0008-07	93	42	0.024	3170	2010 *
PP22-5	soil	10/29/2020	21A0329-22	75			35	83 *
PP22-7.5	soil	10/29/2020	20K0008-09	72	2.0 J	0.035	15	20
PP23-2	soil	10/28/2020	20J0410-15	96	0.95 J	0.018 U	2090	3920 *
PP23-5	soil	10/28/2020	21A0329-14	74			366	587 *
PP23-7.5	soil	10/28/2020	20J0410-17	71	1.7 J	0.020 J	309	369 *
PP24-2.5	soil	10/28/2020	20J0410-21	83	16	1.1	11,400	21,800 *
PP24-5	soil	10/28/2020	21A0329-15	78		0.026 J	66	82 *
PP24-7.5	soil	10/28/2020	20J0410-23	72	46	0.035	13	32 *
PP25-7.5	soil	10/28/2020	20J0410-36	76	1.7 J	0.077	127	284 *
PP25-10	soil	10/28/2020	20J0410-37	75	2.4 J	0.051	107	151 *
PP26-7.5	soil	10/28/2020	20J0410-09	73	4.1	0.22	303	908 *
PP26-10	soil	10/28/2020	21A0329-13	73			77	49
PP26-12.5	soil	10/28/2020	20J0410-11	73	2.1 J	0.025 J	155	172 *
PP27-2.5	soil	10/27/2020	21A0329-10	93			5140	11,100 *
PP27-5	soil	10/27/2020	20J0387-32	75	1.7 J	0.018 J	64	48 *
PP27-10	soil	10/27/2020	20J0387-34	73	1.7 J	0.014 J	14	24 *
PP28-2.5	soil	10/28/2020	20J0410-01	93	20	0.013 J	3940	9980 *
PP28-5	soil	10/28/2020	21A0329-11	94		0.011 J	477	1220 *
PP28-10	soil	10/28/2020	20J0410-04	80	1090	14	9400	23,100 *
PP28-12.5	soil	10/28/2020	21A0329-12	72		0.11	78	139 *
PP28-14	soil	10/28/2020	20J0410-06	74	1.9 J	0.016 J	27	60 *
PP30-2.5	soil	10/27/2020	21A0329-09	90			8640	19,000 *
PP30-5	soil	10/27/2020	20J0387-14	87	18	0.017 J	19	58 *
PP30-12.5	soil	10/27/2020	20J0387-17	71	10	0.095	30	55 *
PP31-2.5	soil	10/29/2020	20K0008-31	85	154	0.15	915	2490 *
PP31-5	soil	10/29/2020	21A0329-26	89			24	26
PP31-7.5	soil	10/29/2020	20K0008-33	84	14	0.047	1720	4610 *
PP31-10	soil	10/29/2020	21A0329-27	73			14	35
PP31-12.5	soil	10/29/2020	21A0329-28	72			12	28

Remedial Investigation "Hot-spot" Identification
ICS / [former] NW Cooperage, Seattle, WA
Site Soils Characterization, 2020-2021

Field I.D.	Matrix	Collection Date	Lab I.D.	% solids	Lead	Mercury	Total Petroleum Hydrocarbons	
				%	7439-92-1 mg/kg, dry	7439-97-6 mg/kg, dry	Diesel-range mg/kg, dry	Lube-range mg/kg, dry
PP32-5	soil	10/26/2020	20J0384-21	86	61	0.12	164	402 *
PP32-10	soil	10/26/2020	20J0384-23	84	294	0.32	241	563 *
PP33-2.5	soil	10/27/2020	20J0387-19	87	52	0.24	420	1230 *
PP33-5	soil	10/27/2020	20J0387-20	83	36	0.16	36	117 *
PP33-12.5	soil	10/27/2020	20J0387-23	75	6.0	0.016 J	33	49 *
PP34-2.5	soil	10/27/2020	21A0329-07	89			146	292 *
PP34-5	soil	10/27/2020	20J0387-02	85	22	0.15	130	334 *
PP34-10	soil	10/27/2020	20J0387-04	81	46	0.031	23	79 *
PP35-2	soil	10/26/2020	21A0329-05	86			1330	4180 *
PP35-5	soil	10/26/2020	20J0384-29	73	47	0.050	62	265 *
PP35-10	soil	10/26/2020	20J0384-30	83	36	0.045	40	99 *
PP35-12.5	soil	10/26/2020	21A0329-06	76			149	410 *
PP35-15	soil	10/26/2020	20J0384-32	68	110	0.50	485	730 *
PP35-17.5	soil	10/26/2020	20J0384-33	62	39	0.19	119	284 *
PP36-2.5	soil	10/27/2020	20J0387-25	84	689	4.0	1810	6050 *
PP36-5	soil	10/27/2020	20J0387-26	88	62	0.036	19	76 *
PP36-10	soil	10/27/2020	20J0387-28	75	6.4	0.023 J	8	27 *
PP37-5	soil	10/26/2020	20J0384-13	87	48	0.092	70	209 *
PP37-10	soil	10/26/2020	20J0384-15	81	153	0.25	1020	2620 *
PP37-12.5	soil	10/26/2020	21A0329-03	64			826	1940 *
PP37-17.5	soil	10/26/2020	21A0329-04	71			21	58
PP38-2.5	soil	10/26/2020	20J0384-01	80	27	0.065	5240	16,100 *
PP38-5	soil	10/26/2020	20J0384-02	78	43	0.15	952	3010 *
PP38-10	soil	10/26/2020	20J0384-03	78	48	0.15	148	331 *
PP38-12.5	soil	10/26/2020	21A0329-01	81			346	456 *
PP38-15	soil	10/26/2020	21A0329-02	82			6.0 U	12 U
PP39-2.5	soil	10/26/2020	20J0384-06	81	2170	5.0	16,400	37,000 *
PP39-5	soil	10/26/2020	20J0384-07	73	58	0.049	77	237 *
PP39-7.5	soil	10/26/2020	20J0384-08	76	296	0.33	2170	7040 *
PP39-10	soil	10/26/2020	20J0384-09	76	827	0.58	267	835 *
PP40-2.5	soil	10/27/2020	21A0329-08	78			52	158 *
PP40-5	soil	10/27/2020	20J0387-08	76	1.8 J	0.017 J	7 U	13 U
PP40-10	soil	10/27/2020	20J0387-10	74	11	0.014 J	7 U	13 U

black-bolded or highlighted TPH values resemble profile associated with weathered mid-distillate/fuel oil or motor oil lubricant.

** Profile resembles mineral oil dielectric.*

J = estimate associated with value less than the verifiable lower quantitation limit.

U = nondetected at the associated lower reporting limit.

Remedial Investigation "Hot-spot" Identification
ICS / [former] NW Cooperage, Seattle, WA
Site Soils Characterization, 2020-2021

Field I.D.	Aroclor 1016 12674-11-2 µg/kg, dry	Aroclor 1221 11104-28-2 µg/kg, dry	Aroclor 1232 11141-16-5 µg/kg, dry	Aroclor 1242 53469-21-9 µg/kg, dry	Aroclor 1248 12672-29-6 µg/kg, dry	Aroclor 1254 11097-69-1 µg/kg, dry	Aroclor 1260 11096-82-5 µg/kg, dry	Aroclor 1262 37324-23-5 µg/kg, dry	Aroclor 1268 11100-14-4 µg/kg, dry	total PCBs mg/kg, dry
LP3-10E-2	100 U	100 U	100 U	100 U	1060	1230	495	100 U	100 U	2.8
LP3-10E-5	100 U	100 U	100 U	100 U	1280	1260	555	100 U	100 U	3.1
LP3-10E-10	20 U	20 U	20 U	20 U	47	33	23	20 U	20 U	0.10
LP3-10N-3	19 U	19 U	19 U	19 U	504	474	236	19 U	19 U	1.2
LP3-10N-6	2490 U	2490 U	2490 U	2490 U	51,500	28,200	6660	2490 U	2490 U	86
LP3-10N-10	20 U	20 U	20 U	20 U	778	443	202	20 U	20 U	1.4
LP3-10S-5	992 U	992 U	992 U	992 U	10,000	7260	5950	992 U	992 U	23
LP3-10S-6	1980 U	1980 U	1980 U	1980 U	61,000	24,100	11,700	1980 U	1980 U	97
LP3-10S-10	20 U	20 U	20 U	20 U	395	149	87	20 U	20 U	0.63
LP3-10W-3	99 U	99 U	99 U	99 U	809	698	193	99 U	99 U	1.7
LP3-10W-6	4920 U	4920 U	4920 U	4920 U	101,000	78,600	29,700	4920 U	4920 U	209
LP3-10W-10	492 U	492 U	492 U	492 U	6470	4430	4680	492 U	492 U	16
LP3-10W-14	20 U	20 U	20 U	20 U	39	30	65	20 U	20 U	0.13
LP3-20N-2	100 U	100 U	100 U	100 U	1260	873	345	100 U	100 U	2.5
LP3-20N-6	5500 U	5500 U	5500 U	5500 U	34,800	21,400	4700 J	5500 U	5500 U	61
LP3-20N-10	99 U	99 U	99 U	99 U	1110	603	348	99 U	99 U	2.1
LP3-20S-5	100 U	100 U	100 U	100 U	1940	1590	930	100 U	100 U	4.5
LP3-20S-7	6650 U	6650 U	6650 U	6650 U	90,600	55,800	24,300	6650 U	6650 U	171
LP3-20S-10	20 U	20 U	20 U	20 U	577	284	135	20 U	20 U	1.0
LP3-20W-2	2770 U	2770 U	2770 U	2770 U	6460	4480 J_P	719 J	2770 U	2770 U	12
LP3-20W-6	2940 U	2940 U	2940 U	2940 U	27,800	15,000	5380	2940 U	2940 U	48
LP3-20W-10	99 U	99 U	99 U	99 U	1970	1000	427	99 U	99 U	3.4
LP5-5	199 U	199 U	199 U	199 U	4280	2150	1800	199 U	199 U	8.2
LP5-7	100 U	100 U	100 U	100 U	839	420	217	100 U	100 U	1.5
LP5-10	20 U	20 U	20 U	20 U	126	69	48	20 U	20 U	0.24
LP6-6	200 U	200 U	200 U	200 U	1930	916	799	200 U	200 U	3.6
LP6-10	1790 U	1790 U	1790 U	1790 U	22,500	18,500	11,000	1790 U	1790 U	52
LP6-12	100 U	100 U	100 U	100 U	1270	793	720	100 U	100 U	2.8
LP8-10	100 U	100 U	100 U	100 U	4310	2210	1150	100 U	100 U	7.7
LP8-12	20 U	20 U	20 U	20 U	361	169	118	20 U	20 U	0.65
LP9-5	20 U	20 U	20 U	20 U	69	67	33	20 U	20 U	0.17
LP9-8	20 U	3 J	3 J	20 U	20 U	0.007				
LP9-11	20 U	20 U	20 U	20 U	59	31	21	20 U	20 U	0.11
LP10-5	199 U	199 U	199 U	199 U	4090	2820 J_P	1600	199 U	199 U	8.5
LP10-7	1390 U	1390 U	1390 U	1390 U	10,500	7580	4320	1390 U	1390 U	22
LP10-10	100 U	100 U	100 U	100 U	759	455	269	100 U	100 U	1.5
LP11-3	99 U	99 U	99 U	99 U	226	133	52	99 U	99 U	0.41
LP11-6	993 U	993 U	993 U	993 U	11,800	4410	2900	993 U	993 U	19
LP11-11	499 U	499 U	499 U	499 U	10,600	8530	13,000	499 U	499 U	32
LP12-5	1190 U	1190 U	1190 U	1190 U	24,600	18,300	11,800	1190 U	1190 U	55
LP12-7	100 U	100 U	100 U	100 U	967	569	490	100 U	100 U	2.0

Remedial Investigation "Hot-spot" Identification
ICS / [former] NW Cooperage, Seattle, WA
Site Soils Characterization, 2020-2021

Field I.D.	Aroclor 1016 12674-11-2 µg/kg, dry	Aroclor 1221 11104-28-2 µg/kg, dry	Aroclor 1232 11141-16-5 µg/kg, dry	Aroclor 1242 53469-21-9 µg/kg, dry	Aroclor 1248 12672-29-6 µg/kg, dry	Aroclor 1254 11097-69-1 µg/kg, dry	Aroclor 1260 11096-82-5 µg/kg, dry	Aroclor 1262 37324-23-5 µg/kg, dry	Aroclor 1268 11100-14-4 µg/kg, dry	total PCBs mg/kg, dry
LP12-10	20 U	20 U	20 U	20 U	202	143	116	20 U	20 U	0.46
LP13-5	199 U	199 U	199 U	199 U	2360	1480	1010	199 U	199 U	4.9
LP13-10	197 U	197 U	197 U	197 U	2780	3290	2900	197 U	197 U	9.0
LP13-12	20 U	20 U	20 U	20 U	217	130	109	20 U	20 U	0.46
LP14-5	499 U	499 U	499 U	499 U	5900	2360	1070	499 U	499 U	9.3
LP14-7	99 U	99 U	99 U	99 U	466	326	264	99 U	99 U	1.1
LP14-10	99 U	99 U	99 U	99 U	1080	468	414	99 U	99 U	2.0
LP15-5	20 U	20 U	20 U	20 U	15 J	14 J	17 J	20 U	20 U	0.046
LP15-10	99 U	99 U	99 U	99 U	303 J _P	430	433	99 U	99 U	1.2
LP15-14	20 U	0.020 U								
LP16-5	20 U	262	463	20 U	20 U	0.73				
LP16-7	20 U	18 J	14 J	20 U	20 U	0.032				
LP16-10	20 U	4 J	20 U	20 U	0.020 U					
LP17-6	20 U	20 U	20 U	20 U	46	58	49	20 U	20 U	0.15
LP17-10	19 U	19 U	19 U	19 U	121	97	63	19 U	19 U	0.28
LP17-14	20 U	0.020 U								
LP18-5	20 U	20 U	20 U	20 U	19 J	30	36	20 U	20 U	0.085
LP18-7	99 U	99 U	99 U	99 U	1500	1270	1310	99 U	99 U	4.1
LP18-10	20 U	0.020 U								
LP-DUP	20 U	20 U	20 U	20 U	6 J	20 U	20 U	20 U	20 U	0.020 U
P8-10E-1	92 U	92 U	92 U	92 U	1060	640	533	92 U	92 U	2.2
P8-10E-5	19 U	19 U	19 U	19 U	66	67	30	19 U	19 U	0.16
P8-10N-1	491 U	491 U	491 U	491 U	9060	3190	2810	491 U	491 U	15
P8-10N-5	20 U	20 U	20 U	20 U	57	58	26	20 U	20 U	0.14
P8-10NE-1	495 U	495 U	495 U	495 U	15,500	8820	1440	495 U	495 U	26
P8-10NE-5	20 U	20 U	20 U	20 U	186	109	56	20 U	20 U	0.35
P8-10NW-1	196 U	196 U	196 U	196 U	6280	2720	2190	196 U	196 U	11
P8-10NW-5	20 U	20 U	20 U	20 U	88	134	71	20 U	20 U	0.29
P8-10S-1	362 U	362 U	362 U	362 U	4470	2090	682	362 U	362 U	7.2
P8-10S-2.5	20 U	20 U	20 U	20 U	136	105	27	20 U	20 U	0.27
P8-10S-5	15 U	15 U	15 U	15 U	45	93	35	15 U	15 U	0.17
P8-10SE-1	995 U	995 U	995 U	995 U	11,000	4340	3550	995 U	995 U	19
P8-10SE-5	20 U	20 U	20 U	20 U	88	63	26	20 U	20 U	0.18
P8-15SW-1	197 U	197 U	197 U	197 U	4540	1850	2300	197 U	197 U	8.7
P8-15SW-5	20 U	20 U	20 U	20 U	60	79	42	20 U	20 U	0.18
P8-20N-1	4930 U	4930 U	4930 U	4930 U	70,500	32,500	26,500	4930 U	4930 U	130
P8-20N-5	20 U	20 U	20 U	20 U	60	73	65	20 U	20 U	0.20
P8-20NW-1	1130 U	1130 U	1130 U	1130 U	12,700	5760	12,300 J _P	1130 U	1130 U	31
P8-20NW-5	20 U	20 U	20 U	20 U	60	82	36	20 U	20 U	0.18
P8-30N-1	556 U	556 U	556 U	556 U	9670	4540	1660	556 U	556 U	16
P8-30N-5	20 U	20 U	20 U	20 U	20	13 J	6 J	20 U	20 U	0.039

Remedial Investigation "Hot-spot" Identification
ICS / [former] NW Cooperage, Seattle, WA
Site Soils Characterization, 2020-2021

Field I.D.	Aroclor 1016 12674-11-2 µg/kg, dry	Aroclor 1221 11104-28-2 µg/kg, dry	Aroclor 1232 11141-16-5 µg/kg, dry	Aroclor 1242 53469-21-9 µg/kg, dry	Aroclor 1248 12672-29-6 µg/kg, dry	Aroclor 1254 11097-69-1 µg/kg, dry	Aroclor 1260 11096-82-5 µg/kg, dry	Aroclor 1262 37324-23-5 µg/kg, dry	Aroclor 1268 11100-14-4 µg/kg, dry	total PCBs mg/kg, dry
P8-30NW-1	2710 U	2710 U	2710 U	2710 U	40,600	18,900	4780	2710 U	2710 U	64
P8-30NW-5	20 U	20 U	20 U	20 U	176	147	21	20 U	20 U	0.34
P8-7W-1	99 U	99 U	99 U	99 U	1400	696	502	99 U	99 U	2.6
P8-7W-5	20 U	20 U	20 U	20 U	67	75	48	20 U	20 U	0.19
PP1-5	15 U	25	11 J	15 U	15 U	0.036				
PP1-7.5	16 U	5 J	16 U	16 U	0.005					
PP2-5	16 U	0.016 U								
PP2-7.5	18 U	0.018 U								
PP3-2	20 U	24	38	20 U	20 U	0.063				
PP3-5	20 U	4 J	20 U	20 U	0.004					
PP4-2.5	20 U	12 J	20 U	20 U	0.012					
PP4-7.5	20 U	20 U	20 U	20 U	36	53	117	20 U	20 U	0.21
PP5-2	18 U	14 J	34	18 U	18 U	0.048				
PP5-8	19 U	0.019 U								
PP7-2.5	20 U	25	100	20 U	20 U	0.12				
PP7-7.5	20 U	20 U	20 U	20 U	15 J	21	70	20 U	20 U	0.11
PP8-2.5	1450 U	1450 U	1450 U	1450 U	14,700	12,500	13,000	1450 U	1450 U	40
PP8-5	99 U	99 U	99 U	99 U	641	543	450	99 U	99 U	1.6
PP8-7.5	20 U	20 U	20 U	20 U	16 J	17 J	21	20 U	20 U	0.054
PP8-10	20 U	20 U	20 U	20 U	11 J	5 J	8 J	20 U	20 U	0.024
PP9-2.5	99 U	99 U	99 U	99 U	175	352	980	99 U	99 U	1.5
PP9-5	199 U	199 U	199 U	199 U	1110 J_p	2940	4370	199 U	199 U	8.4
PP9-7.5	20 U	29	59	20 U	20 U	0.087				
PP10-2.5	20 U	20 U	20 U	20 U	12 J	9 J	17 J	20 U	20 U	0.038
PP10-5										
PP10-7.5	20 U	0.02 U								
PP11-2.5	20 U	0.02 U								
PP11-7.5	20 U	0.02 U								
PP12-2.5	199 U	199 U	199 U	199 U	2150	3150 J_p	5340	199 U	199 U	11
PP12-5	100 U	100 U	100 U	100 U	626	1110 J_p	1770	100 U	100 U	3.5
PP12-7.5	100 U	100 U	100 U	100 U	75 J	107	209	100 U	100 U	0.39
PP13-2.5	20 U	5 J	20 U	20 U	0.005					
PP13-5	20 U	20 U	20 U	20 U	8 J	5 J	9 J	20 U	20 U	0.022
PP15-2.5	20 U	20 U	20 U	20 U	5 J	5 J	8 J	20 U	20 U	0.018
PP15-5	20 U	11 J	7 J	20 U	20 U	0.018				
PP16-2.5	200 U	200 U	200 U	200 U	9920	3980	1220	200 U	200 U	15
PP16-5	199 U	199 U	199 U	199 U	1580	883	270	199 U	199 U	2.7
PP16-7.5	20 U	0.020 U								
PP17-2	400 U	400 U	400 U	400 U	9910	6740	1880	400 U	400 U	19
PP17-5	20 U	20 U	20 U	20 U	74	44	17 J	20 U	20 U	0.13
PP17-7.5	20 U	20 U	20 U	20 U	28	20	7 J	20 U	20 U	0.055

Remedial Investigation "Hot-spot" Identification
ICS / [former] NW Cooperage, Seattle, WA
Site Soils Characterization, 2020-2021

Field I.D.	Aroclor 1016 12674-11-2 µg/kg, dry	Aroclor 1221 11104-28-2 µg/kg, dry	Aroclor 1232 11141-16-5 µg/kg, dry	Aroclor 1242 53469-21-9 µg/kg, dry	Aroclor 1248 12672-29-6 µg/kg, dry	Aroclor 1254 11097-69-1 µg/kg, dry	Aroclor 1260 11096-82-5 µg/kg, dry	Aroclor 1262 37324-23-5 µg/kg, dry	Aroclor 1268 11100-14-4 µg/kg, dry	total PCBs mg/kg, dry
PP18-2.5	3370 U	3370 U	3370 U	3370 U	38,900	21,200	9970	3370 U	3370 U	70
PP18-5	20 U	20 U	20 U	20 U	669	858	258	20 U	20 U	1.8
PP18-7.5	100 U	100 U	100 U	100 U	403	346	95 J	100 U	100 U	0.84
PP18-10	20 U	20 U	20 U	20 U	770	578	304	20 U	20 U	1.7
PP19-2.5	20 U	20 U	20 U	20 U	497	711	364	20 U	20 U	1.6
PP19-5	20 U	20 U	20 U	20 U	423	329	107	20 U	20 U	0.86
PP19-7.5	20 U	20 U	20 U	20 U	160	108	46.6	20 U	20 U	0.31
PP20-5	20 U	20 U	20 U	20 U	18 J	13 J	10 J	20 U	20 U	0.041
PP20-10	20 U	0.02 U								
PP21-2.5	20 U	0.02 U								
PP21-7.5	20 U	0.02 U								
PP22-2.5	20 U	20 U	20 U	20 U	243	185	243	20 U	20 U	0.67
PP22-5	20 U	0.020 U								
PP22-7.5	20 U	0.02 U								
PP23-2	494 U	494 U	494 U	494 U	9960	7550	13,300	494 U	494 U	31
PP23-5	498 U	498 U	498 U	498 U	710	630	732	498 U	498 U	2.1
PP23-7.5	99 U	99 U	99 U	99 U	465	274	184	99 U	99 U	0.92
PP24-2.5	1000 U	1000 U	1000 U	1000 U	23,200	12,800	4620	1000 U	1000 U	41
PP24-5	20 U	20 U	20 U	20 U	58	38	9 J	20 U	20 U	0.10
PP24-7.5	20 U	0.02 U								
PP25-7.5	20 U	20 U	20 U	20 U	319	353	172	20 U	20 U	0.84
PP25-10	20 U	20 U	20 U	20 U	733	439	393	20 U	20 U	1.6
PP26-7.5	20 U	20 U	20 U	20 U	433	396	361	20 U	20 U	1.2
PP26-10	20 U	20 U	20 U	20 U	191	205	364	20 U	20 U	0.76
PP26-12.5	20 U	20 U	20 U	20 U	379	291	229	20 U	20 U	0.90
PP27-2.5	2580 U	2580 U	2580 U	2580 U	10,600	6220	8770	2580 U	2580 U	26
PP27-5	20 U	20 U	20 U	85	20 U	16 J	11 J	20 U	20 U	0.11
PP27-10	20 U	20 U	20 U	31	20 U	10 J	6 J	20 U	20 U	0.046
PP28-2.5	99 U	99 U	99 U	99 U	729	799	99 U	99 U	99 U	1.5
PP28-5	20 U	20 U	20 U	20 U	17 J	30	19 J	20 U	20 U	0.067
PP28-10	199 U	199 U	199 U	199 U	8000	5980	3020	199 U	199 U	17
PP28-12.5	20 U	20 U	20 U	20 U	40	25	11 J	20 U	20 U	0.075
PP28-14	20 U	0.02 U								
PP30-2.5	2660 U	2660 U	2660 U	2660 U	27,400	9950	2770	2660 U	2660 U	40
PP30-5	20 U	32	22	20 U	20 U	0.054				
PP30-12.5	20 U	20 U	20 U	20 U	17 J	17 J	17 J	20 U	20 U	0.051
PP31-2.5	199 U	199 U	199 U	199 U	7170	4870	1490	199 U	199 U	14
PP31-5	20 U	5 J	20 U	20 U	20 U	0.020 U				
PP31-7.5	20 U	20 U	20 U	20 U	233	352	448	20 U	20 U	1.0
PP31-10	20 U	20 U	20 U	20 U	19 J	8 J	2 J	20 U	20 U	0.029
PP31-12.5	20 U	0.020 U								

Remedial Investigation "Hot-spot" Identification
ICS / [former] NW Cooperage, Seattle, WA
Site Soils Characterization, 2020-2021

Field I.D.	Aroclor 1016 12674-11-2 µg/kg, dry	Aroclor 1221 11104-28-2 µg/kg, dry	Aroclor 1232 11141-16-5 µg/kg, dry	Aroclor 1242 53469-21-9 µg/kg, dry	Aroclor 1248 12672-29-6 µg/kg, dry	Aroclor 1254 11097-69-1 µg/kg, dry	Aroclor 1260 11096-82-5 µg/kg, dry	Aroclor 1262 37324-23-5 µg/kg, dry	Aroclor 1268 11100-14-4 µg/kg, dry	total PCBs mg/kg, dry
PP32-5	99 U	99 U	99 U	99 U	1670	1280	1240	99 U	99 U	4.2
PP32-10	99 U	99 U	99 U	99 U	2510	1500	1820	99 U	99 U	5.8
PP33-2.5	100 U	100 U	100 U	100 U	877	649	426	100 U	100 U	2.0
PP33-5	20 U	20 U	20 U	20 U	86	108	137	20 U	20 U	0.33
PP33-12.5	20 U	0.02 U								
PP34-2.5	20 U	20 U	20 U	20 U	139	85	55	20 U	20 U	0.28
PP34-5	20 U	20 U	20 U	20 U	384	248	229	20 U	20 U	0.86
PP34-10	20 U	20 U	20 U	20 U	46	68	100	20 U	20 U	0.21
PP35-2	573 U	573 U	573 U	573 U	15,900	5730	1970	573 U	573 U	24
PP35-5	20 U	20 U	20 U	20 U	160	83	86	20 U	20 U	0.33
PP35-10	20 U	20 U	20 U	20 U	271	166	183	20 U	20 U	0.62
PP35-12.5	20 U	20 U	20 U	20 U	241	123	137	20 U	20 U	0.50
PP35-15	99 U	99 U	99 U	99 U	2340	1690	1420	99 U	99 U	5.5
PP35-17.5	20 U	20 U	20 U	20 U	94	72 J _p	29	20 U	20 U	0.19
PP36-2.5	994 U	994 U	994 U	994 U	13,800	8010	1870	994 U	994 U	24
PP36-5	20 U	18 J	14 J	20 U	20 U	0.031				
PP36-10	20 U	20 U	20 U	20 U	27	17 J	20 U	20 U	20 U	0.044
PP37-5	20 U	20 U	20 U	20 U	151	86	108	20 U	20 U	0.35
PP37-10	498 U	498 U	498 U	498 U	4700	3410	3610	498 U	498 U	12
PP37-12.5	100 U	100 U	100 U	100 U	985	1140	474	100 U	100 U	2.6
PP37-17.5	20 U	20 U	20 U	20 U	7 J	6 J	20 U	20 U	20 U	0.020 U
PP38-2.5										
PP38-5	199 U	199 U	199 U	199 U	3060	1770 J _p	603 J _p	199 U	199 U	5.4
PP38-10	20 U	20 U	20 U	20 U	169	152	68	20 U	20 U	0.39
PP38-12.5	20 U	20 U	20 U	20 U	333	184	204	20 U	20 U	0.72
PP38-15	20 U	20 U	20 U	20 U	7 J	5 J	20 U	20 U	20 U	0.020 U
PP39-2.5	997 U	997 U	997 U	997 U	16,100 J _p	8910	27,000	997 U	997 U	52
PP39-5	20 U	20 U	20 U	20 U	151	89	101	20 U	20 U	0.34
PP39-7.5	1990 U	1990 U	1990 U	1990 U	13,400	8710	10,900	1990 U	1990 U	33
PP39-10	20 U	20 U	20 U	20 U	112	100	149	20 U	20 U	0.36
PP40-2.5	20 U	20 U	20 U	20 U	140	208	142	20 U	20 U	0.49
PP40-5	20 U	0.02 U								
PP40-10	20 U	0.02 U								

J = estimate associated with value less than the verifiable lower quantitation limit.

J_p = estimated value due to noncompliance with all criteria for identification and/or chemical interference.

U = nondetected at the associated lower reporting limit.

**APPENDIX D
PHOTOGRAPHS
EMBAYMENT SEDIMENT SAMPLING – SEPTEMBER 2020**

**HOT-SPOT CHARACTERIZATION
ICS/NWC
SEATTLE, WASHINGTON**

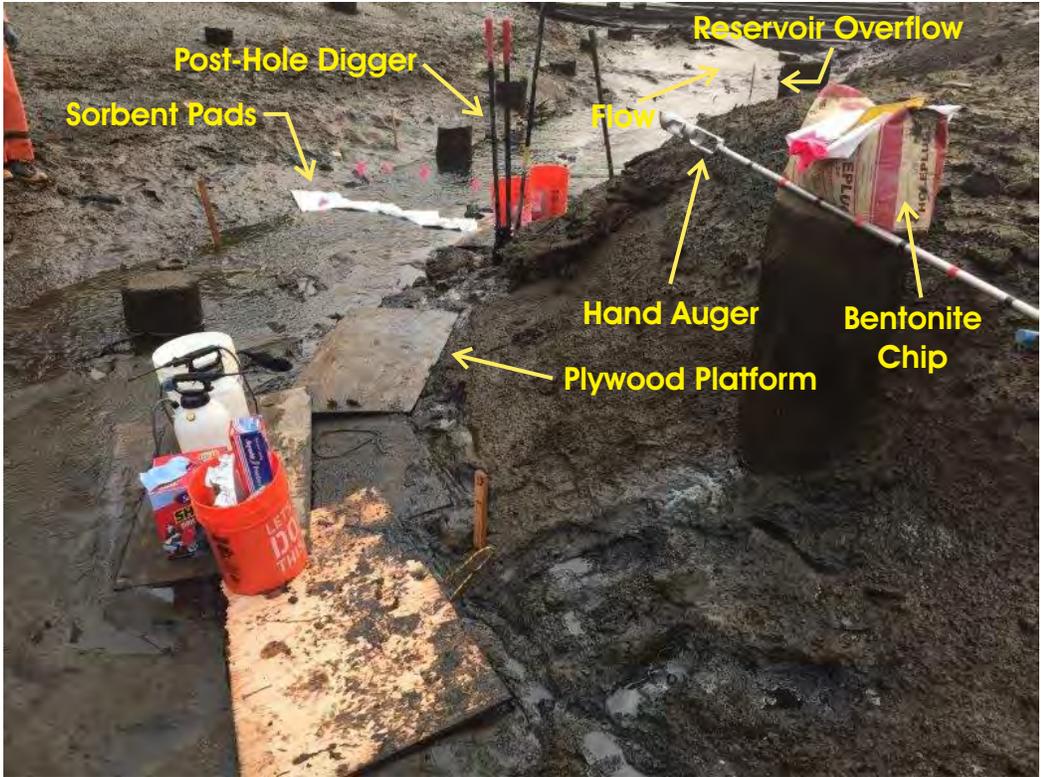


Fig. D-1a - Sampling Station - Preparation for Sampling - View to Mouth of Embayment



Fig. D-1b - Sampling Station Platform - View to Head of Embayment

ICS/NW Cooperage Site
Seattle, Washington

**Sediment Sampling
Photographs**

SUM-008-03FS **FIGURE D-1** May 2021
Dalton, Olmsted & Fuglevand, Inc.



Fig. D-2a - Station After Sampling (typical)



Fig. D-2b - Water Surface During Flood w/ Booms In-Place (After sampling 9-16-20 - view to east - mouth)

ICS/NW Cooperage Site
Seattle, Washington

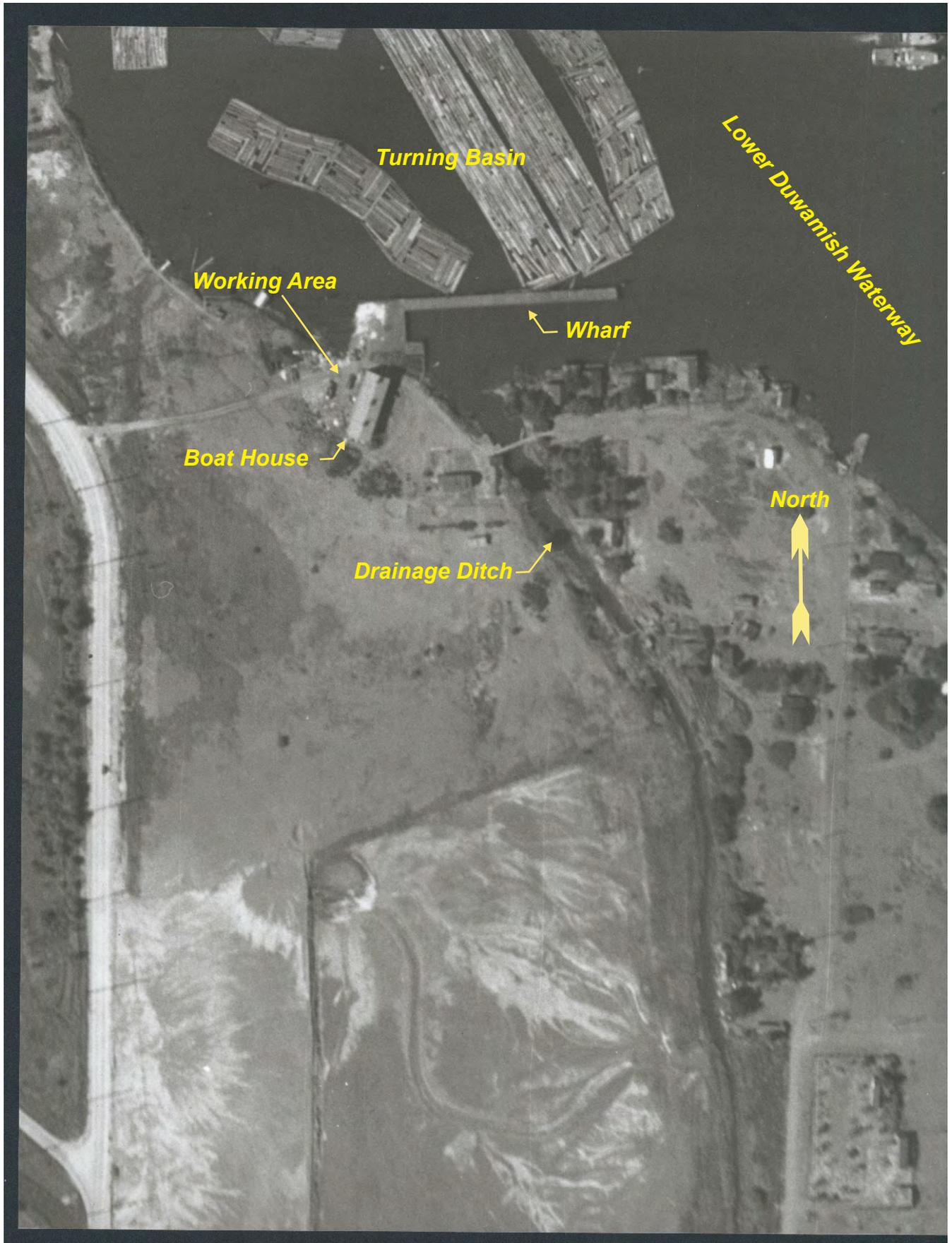
**Sediment Sampling
Photographs**

SUM-008-03FS **FIGURE D-2** May 2021
Dalton, Olmsted & Fuglevand, Inc.

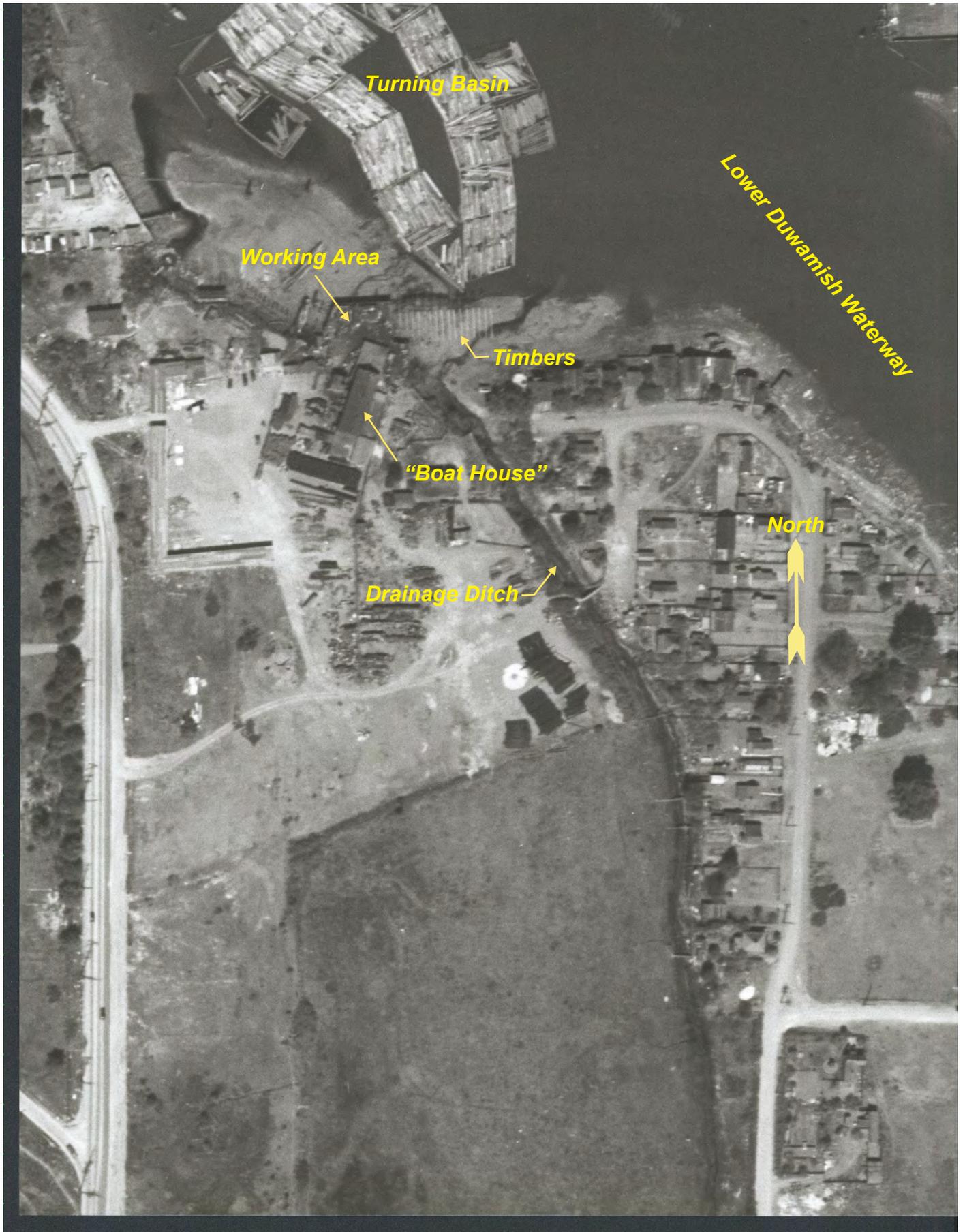
**APPENDIX E
HISTORIC AIR PHOTOGRAPHS**

**HOT-SPOT CHARACTERIZATION
ICS/NWC
SEATTLE, WASHINGTON**

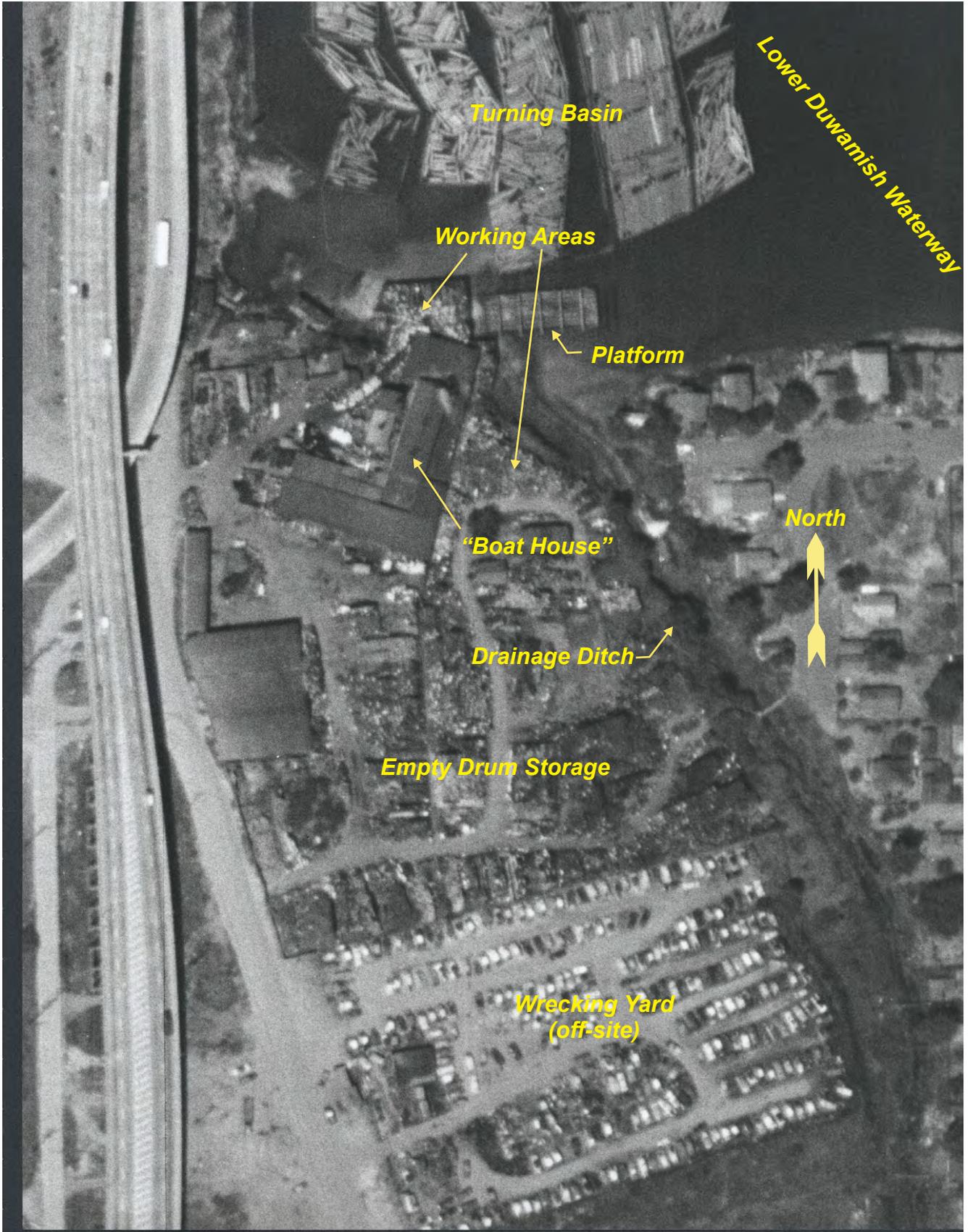
- 1936
- 1946
- 1960
- 1969
- 1980
- 1990



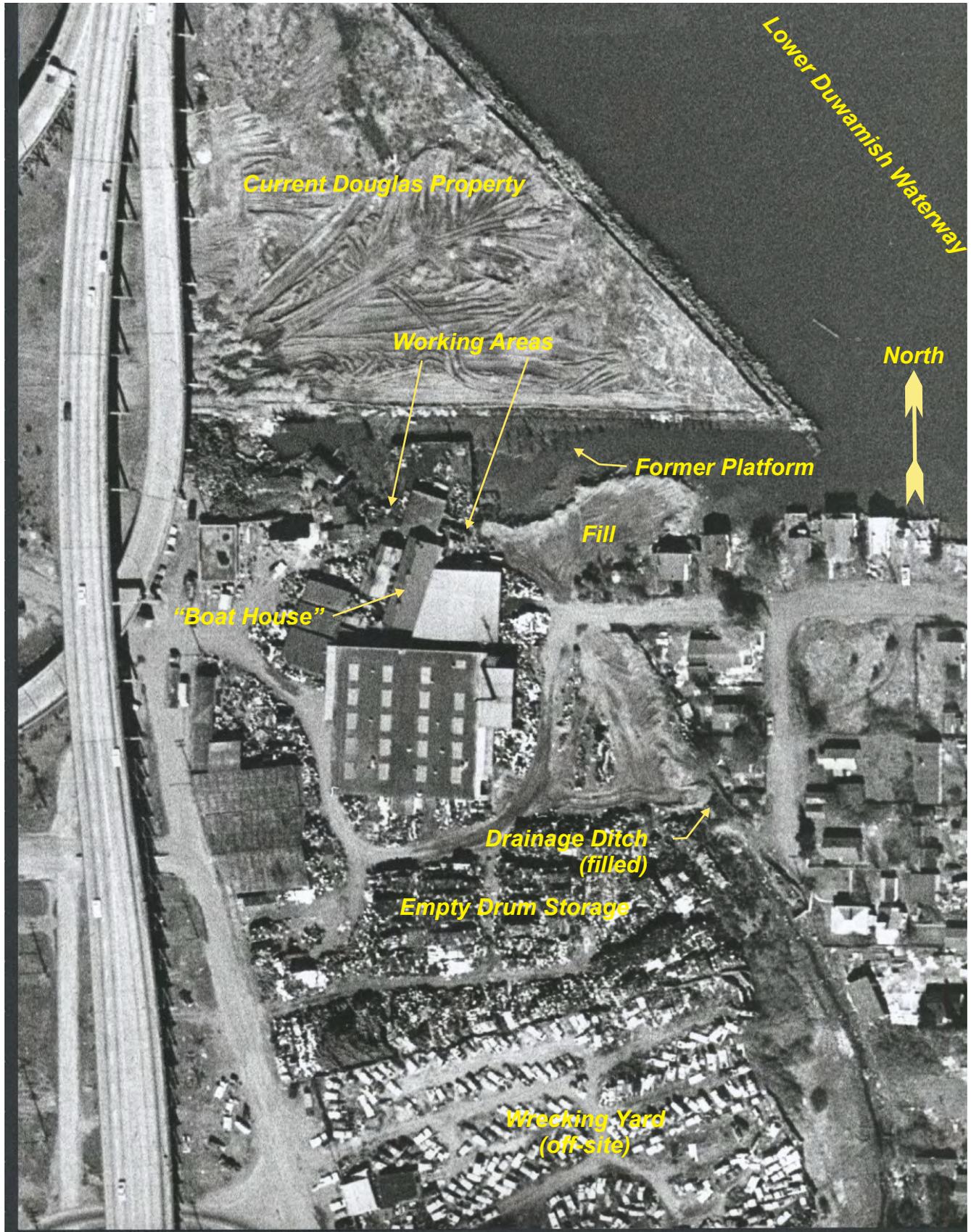
Date: 1936 Figure E-1 ICS-NWC RI
Dalton, Olmsted & Fuglevand Inc.



Date: 1946 Figure E-2 ICS-NWC RI
Dalton, Olmsted & Fuglevand Inc.



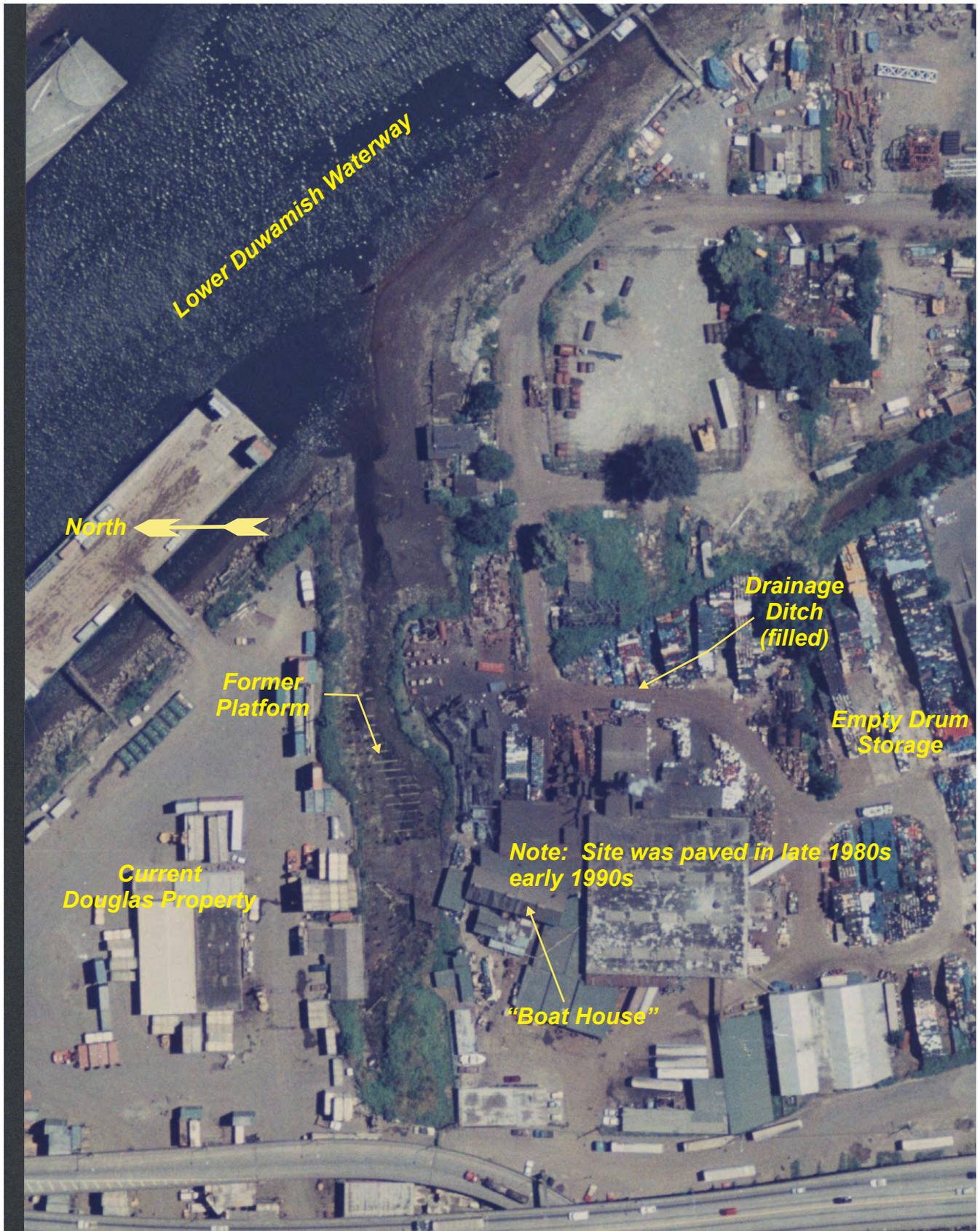
Date: June 23, 1960 Figure E-3 ICS-NWC RI
Dalton, Olmsted & Fuglevand Inc. 



Date: March 25, 1969 Figure E-4 ICS-NWC RI
Dalton, Olmsted & Fuglevand Inc.



Date: May 4, 1980 Figure E-5 ICS-NWC RI
Dalton, Olmsted & Fuglevand Inc.



Date: July 10, 1990 Figure E-6 ICS-NWC RI
Dalton, Olmsted & Fuglevand Inc.

**APPENDIX F
MTCA- Stat Output**

**HOT-SPOT CHARACTERIZATION
ICS/NWC
SEATTLE, WASHINGTON**

PCBs in Upland Soil (ug/kg)

ICS-NWC Site
Seatt,e.Washington

	A	B	C	D	E	F	G	H
2	129500	P8-20N	<i>MTCASat 97 Site Module</i>					
3	119000	P-8	Number of samples	332	Uncensored values			
4	118000	P-1	Uncensored		Mean	7876.726		
5	70070	PP-18*	Censored		Lognormal mean	27975.795		
6	64280	P8-30NW	Detection limit or PQL	0	Std. devn.	23232.888		
7	52010	PP-39	Method detection limit		Median	288.05		
8	40620	PP-24	TOTAL	332	Min.	3.1		
9	40200	PP-8*	ENTER DATA		Max	209300		
10	40120	PP-30	<i>Distribution Decision</i>					
11	30810	PP-23						
12	30760	P8-20NW	Probability plot method		W test	D'Agostino's test		
13	25760	P8-10NE						
14	25590	PP-27*	Lognormal distribution?		Normal distribution?			
15	23680	PP-36	r-squared is: 0.959		r-squared is: 0.371			
16	23600	PP-35*	<i>Recommendations:</i>					
17	18890	P8-10SE	Use lognormal distribution.					
18	17830	PP-17						
19	15870	P8-30N						
20	15120	PP-16						
21	15060	P8-10N	<i>Upper Confidence Limit (UCL)</i>					
22	13530	PP-31						
23	11659	LP3-20W						
24	11190	P8-10NW	UCL (Land's method) is 56250.1940912312					
25	10640	PP-12						
26	8690	P8-15SW						
27	7242	P8-10S						
28	3800	P-25						
29	3428	P830NW						
30	3030	HC-B1						
31	2785	LP3-10E						
32	2598	P8-7W						
33	2478	LP3-20N						
34	2233	P8-10E	PCBs in ug/kg					
35	1952	PP-33	ICS Upland Soil Samples 0 to 15' Deep					
36	1700	LP3-10W						
37	1670	HC-B2						
38	1572	PP-19						
39	1528	PP-28						
40	1507	PP-9						
41	1214	LP3-10N						
42	787	P8-20N						
43	740	HC-B4						
44	671	PP-22						
45	520	P-23						
46	490	PP-40*						
47	279	PP-34*						
48	268	P8-10S						
49	194	PP-37						
50	124.5	PP-7						
51	76	P8-10SE						
52	62.6	PP-3						
53	47.6	PP-5						
54	40	P-27						
55	38	PP-10						
56	32 U	P-9						
57	30 U	HC-B5						
58	30 U	HC-B5						
59	20 U	PP-21						
60	20 U	PP-11						
61	18	PP-15						
62	11.9	PP-4						
63	5.4	P-28						
64	5.1	P-20						
65	5	PP-13						
66	3.9 U	DOF-MW2						
67	3.8 U	DOF-MW3						
68	39800	MW-Ju						
69	32300	P-29						
70	5520	P-18						
71	3300	LP-3						

Sort data

Calculate UCL

Lognormal

Normal

Neither

Clear messages

Clear all

Histogram

5 10 20

Create report

Sample size

Finished

Exit
MTCASat

PCBs in Upland Soil (ug/kg)

ICS-NWC Site
Seatt,e.Washington

	A	B	C	D	E	F	G	H
72	1610	P-13						
73	1450	P-19						
74	890	DOF-MW7						
75	470	DOF-MW6						
76	470	DOF-MW1						
77	411	LP-11						
78	283	P-22						
79	183	P-16						
80	128	P-26						
81	100	P-24						
82	94	P-14						
83	92	LP-1						
84	49	LP-2						
85	25.9	P-15						
86	8.4	DOF-MW8						
87	5.3	P-12						
88	3.8 U	P-31						
89	3.8 U	DOF-MW4						
90	3.7 U	DOF-MW5						
91	3.1	P-11						
92	209300	LP3-10W						
93	170700	LP3-20S						
94	113000	LP-3						
95	96800	LP3-10S						
96	86360	LP3-10N						
97	76500	SA-MW1						
98	60900	LP3-20N						
99	54700	LP-12						
100	48180	LP3-20W						
101	34000	P-17						
102	33010	PP-39						
103	28100	P-3						
104	23210	LP3-10S						
105	22400	LP-10						
106	20200	P-2						
107	19110	LP-11						
108	15300	HC-B2						
109	15300	LP-4						
110	12700	P-5						
111	10600	LP-1						
112	9330	LP-14						
113	9200	P-21						
114	8510	LP-10						
115	8420	PP-9*						
116	8400	P-17						
117	8230	LP-5						
118	6580	HC-B1						
119	5484	HC-B1						
120	5433	PP-38						
121	5070	HC-B1						
122	4850	LP-13						
123	4460	LP3-20S						
124	4322	HC-B2						
125	4190	PP-32						
126	4080	LP-18						
127	3645	LP-6						
128	3506	PP-12*						
129	3095	LP3-10E						
130	2800	P-24						
131	2733	PP-16						
132	2072	PP-23*						
133	2026	LP-12						
134	1785	PP-18						
135	1634	PP-8						
136	1476	LP-5						
137	1460	DOF-MW6						
138	1190	PP-26						
139	1166	LP-15						
140	1150	P-22						
141	1070	P-29						

PCBs in Upland Soil (ug/kg)

ICS-NWC Site
Seatt,e.Washington

	A	B	C	D	E	F	G	H
142	1056	LP-14						
143	1033	PP-31						
144	980	P-30						
145	923	PP-23						
146	861	PP-34						
147	859	PP-19*						
148	844	PP-18*						
149	844	PP-25						
150	800	P-19						
151	762	HC-B2						
152	725	LP-16						
153	520	P-25						
154	391	PP-12						
155	369	P-18						
156	351	P8-10NE						
157	344	P8-30NW						
158	341	PP-39						
159	331	PP-33						
160	329	PP-35						
161	315	PP-19						
162	293	P8-10NW						
163	211	SA-MW2						
164	206	PP-4						
165	199	P8-20N						
166	192	P-6						
167	191	P8-7W						
168	181	P8-15SW						
169	178	P8-20NW						
170	176	P8-10SE						
171	173	P8-10S						
172	170	P-9						
173	168	LP-9						
174	162	P8-10E						
175	153	LP-17						
176	141	P-7						
177	141	P8-10N						
178	118	PP-17*						
179	112	PP-27						
180	105	PP-24*						
181	105	PP-7						
182	97 U	P-4						
183	87	PP-9						
184	85	LP-18						
185	57	P-8						
186	55	PP-17						
187	54.5	PP-30						
188	54	PP-8*						
189	48	P-22						
190	47	PP-28*						
191	46	LP-15						
192	41.9	DOF-MW6						
193	41	PP-20						
194	37	PP-36						
195	36	PP-1						
196	33 U	P-10						
197	32	LP-16						
198	30 U	HC-B4						
199	30 U	HC-B5						
200	30 U	HC-B4						
201	30 U	HC-B5						
202	22	PP-13						
203	22	P-17						
204	20 U	PP-22*						
205	20 U	PP-40						
206	20 U	PP-21						
207	20 U	PP-22						
208	20 U	PP-16						
209	20 U	PP-24						
210	20 U	PP-11						
211	20 U	PP-10						

PCBs in Upland Soil (ug/kg)

ICS-NWC Site
Seatt,e.Washington

	A	B	C	D	E	F	G	H
212	19	P8-30N						
213	19 U	PP-5						
214	18 U	PP-2						
215	16 U	PP-2						
216	15.6	DOF-MW1						
217	11	PP-15						
218	9.6	DOF-MW7						
219	6	LP-9						
220	5.2	P-15						
221	5.1	P-28						
222	5	PP-31*						
223	5	PP-1						
224	4.9 U	DOF-MW8						
225	4	PP-3						
226	4.0 U	P-12						
227	4.0 U	P-13						
228	3.9 U	P-15						
229	3.9 U	P-16						
230	3.9 U	MW-Ap						
231	3.9 U	MW-Bp						
232	3.9 U	MW-Du						
233	3.9 U	P-26						
234	3.8 U	LP-2						
235	3.8 U	P-14						
236	3.8 U	P-16						
237	3.8 U	P-26						
238	3.8 U	DOF-MW4						
239	3.8 U	DOF-MW5						
240	3.8 U	DOF-MW2						
241	3.8 U	LP-2						
242	3.8 U	MW-Cp						
243	3.8 U	P-31						
244	3.7 U	DOF-MW3						
245	3.4	P-27						
246	52000	LP-6						
247	32130	LP-11						
248	17000	PP-28						
249	15580	LP3-10W						
250	11720	PP-37						
251	11700	P-18						
252	8970	LP-13						
253	7670	LP-8						
254	6300	P-9						
255	5830	PP-32						
256	4300	P-21						
257	3420	P-6						
258	3397	LP3-20W						
259	2783	LP-6						
260	2599	PP-37*						
261	2540	P-8						
262	2420	P-3						
263	2150	LP-4						
264	2070	LP-3						
265	2061	LP3-20N						
266	1962	LP-14						
267	1652	PP-18						
268	1565	PP-25						
269	1483	LP-10						
270	1423	LP3-10N						
271	1160	P-30						
272	996	LP3-20S						
273	899	PP-26						
274	770	SA-MW2						
275	760	PP-26*						
276	721	PP-38*						
277	648	LP-8						
278	631	LP3-10S						
279	620	PP-35						
280	501	PP-35*						
281	461	LP-12						

PCBs in Upland Soil (ug/kg)

ICS-NWC Site
Seatt,e.Washington

	A	B	C	D	E	F	G	H
282	456	LP-13						
283	389	PP-38						
284	362	SA-MW1						
285	361	PP-39						
286	281	LP-17						
287	242	LP-5						
288	214	PP-34						
289	134	LP3-10W						
290	110	LP-9						
291	107	MW-Ju						
292	103	LP3-10E						
293	102	P-2						
294	75	PP-28*						
295	65	P-23						
296	64	LP-4						
297	50.7	PP-30						
298	46	PP-27						
299	44	PP-36						
300	37	P-20						
301	34	LP-1						
302	32.4	DOF-MW1						
303	32 U	P-5						
304	32 U	P-7						
305	32 U	P-4						
306	32 U	P-9						
307	31 U	P-10						
308	27	PP-31*						
309	24	PP-8						
310	20 U	LP-18						
311	20 U	PP-20						
312	20 U	PP-40						
313	20 U	LP-15						
314	20 U	LP-17						
315	20 U	PP-31*						
316	20 U	PP-33						
317	20 U	PP-28						
318	9.8 U	P-11						
319	8.2	DOF-MW7						
320	5.4	DOF-MW4						
321	5 U	SA-MW3						
322	4.1	P-22						
323	4	LP-16						
324	3.9 U	P-14						
325	3.9 U	P-12						
326	3.9 U	P-20						
327	3.9 U	P-24						
328	3.8 U	P-13						
329	3.8 U	DOF-MW8						
330	3.8 U	DOF-MW2						
331	3.8 U	P-12						
332	3.8 U	P-17						
333	3.8 U	P-25						

DRO+RRO in Upland Soil (mg/kg)

	A	B	C	D	E	F	G	H
2	53400	PP-39	<i>MTCASat 97 Site Module</i>					
3	39790	P8-20N	Number of samples		Uncensored values			
4	35000	P-8	Uncensored	302	Mean	4127.520		
5	33200	PP-24	Censored		Lognormal mean	6701.734		
6	32470	PP-18*	Detection limit or PQL		Std. devn.	9867.262		
7	21710	PP-17	Method detection limit		Median	303		
8	21340	PP-38	TOTAL	302	Min.	5.2		
9	20390	P8-20NW	ENTER DATA		Max	65000		
10	18450	P8-30NW	<i>Distribution Decision</i>					
11	16950	P8-10NW						
12	16400	P8-7W	Probability plot method		W test	D'Agostino's test		
13	16250	PP-27*						
14	13920	PP-28	Lognormal distribution?		Normal distribution?			
15	13740	PP-12	r-squared is: 0.958		r-squared is: 0.472			
16	9970	P8-30N	<i>Recommendations:</i>					
17	8030	PP-13	Use lognormal distribution.					
18	7990	LP3-20W						
19	7860	PP-36						
20	7710	PP-16						
21	7590	P8-10E	<i>Upper Confidence Limit (UCL)</i>					
22	6260	P8-10NE						
23	6240	P8-15SW						
24	6010	PP-23	UCL (Land's method) is 11074.2708634597					
25	5510	PP-35*						
26	5180	PP-22						
27	4710	PP-8*						
28	4600	P8-10S						
29	4419	PP-10						
30	4378	PP-3						
31	3650	PP-19						
32	3430	P8-10SE						
33	3405	PP-31						
34	2930	P8-10N						
35	1650	PP-33						
36	1310	P-1						
37	854	P8-10S						
38	734	LP3-20N						
39	438	PP-34*						
40	420	LP3-10W						
41	370	PP-21						
42	284	LP3-10E						
43	279	PP-37						
44	210	PP-40*						
45	122	PP-15						
46	98	LP3-10N						
47	93.5	PP-5						
48	80	P-25						
49	56	P-9						
50	48	PP-11						
51	44	PP-9						
52	43	P-27						
53	27	P-23						
54	22	PP-4						
55	22	P-20						
56	17	PP-7						
57	13	P-28						
58	11 U	DOF-MW3						
59	10 U	DOF-MW2						
60	65000	P-29						
61	46000	MW-Ju						
62	19000	DOF-MW6						
63	1790	DOF-MW7						
64	1580	P-18						
65	1400	P-19						
66	618	LP-11						
67	420	P-15						
68	132	LP-3						
69	114	P-26						
70	93	LP-1						
71	56	P-22						

Sort data

Calculate UCL

Lognormal

Normal

Neither

Clear messages

Clear all

Histogram

5 10 20

Create report

Sample size

Finished

Exit
MTCASat

DRO+RRO in Upland Soil (mg/kg)

ICS-NWC Site
Seatt,e.Washington

	A	B	C	D	E	F	G	H
72	45	DOF-MW5						
73	38	LP-2						
74	35	P-14						
75	32	P-24						
76	24	DOF-MW1						
77	13 U	P-31						
78	11 U	P-16						
79	10 U	P-11						
80	8.4	DOF-MW4						
81	6.9	P-12						
82	5	DOF-MW8						
83	64000	SA-MW1						
84	37500	LP3-10S						
85	35800	LP3-20S						
86	33500	LP3-10N						
87	31800	LP3-10W						
88	30600	LP3-20N						
89	28400	P-29						
90	24800	P-3						
91	17200	LP-3						
92	15840	LP-12						
93	14880	LP-10						
94	13200	P-2						
95	12760	LP3-20W						
96	12000	DOF-MW6						
97	9210	PP-39						
98	8482	PP-12*						
99	8330	LP-18						
100	7900	P-5						
101	6330	PP-31						
102	6220	LP-14						
103	4370	LP-15						
104	4000	SA-MW2						
105	3962	PP-38						
106	3310	PP-18						
107	3300	P-30						
108	2810	P-24						
109	2520	LP-1						
110	2360	P-13						
111	1920	LP-4						
112	1904	LP-11						
113	1865	LP-6						
114	1808	LP3-10S						
115	1782	P8-10E						
116	1739	LP-10						
117	1697	PP-28*						
118	1240	P-17						
119	1211	PP-26						
120	1054	LP-13						
121	953	PP-23*						
122	840	P-6						
123	782	P8-15SW						
124	770	P-21						
125	698	LP-5						
126	679	P8-10SE						
127	678	PP-23						
128	620	P-18						
129	609	P8-10NW						
130	598	P8-10NE						
131	594	PP-19*						
132	590	P-7						
133	584	PP-18*						
134	567	PP-21						
135	566	PP-32						
136	562	P8-20NW						
137	465	PP-17*						
138	464	PP-34						
139	420	P-4						
140	411	PP-25						
141	406	P8-20N						

DRO+RRO in Upland Soil (mg/kg)

ICS-NWC Site
Seatt,e.Washington

	A	B	C	D	E	F	G	H
142	393	LP-16						
143	368	LP-12						
144	360	P-30						
145	358	LP3-20S						
146	343	LP-14						
147	330	P-8						
148	330	P-29						
149	330	PP-8						
150	328	PP-16						
151	327	PP-35						
152	320	P8-10S						
153	314.1	PP-39						
154	308	P8-10N						
155	298	P-9						
156	289	P8-30NW						
157	257	LP-18						
158	249	LP-17						
159	235	PP-9						
160	230.4	P8-7W						
161	227	LP-15						
162	226	LP3-10E						
163	209	PP-17						
164	174	LP-5						
165	153	PP-33						
166	149	PP-24*						
167	117	PP-22*						
168	111	PP-27						
169	103	P-15						
170	94.8	PP-36						
171	93	PP-19						
172	91	PP-15						
173	79	P-19						
174	78	PP-11						
175	76.2	PP-30						
176	74	DOF-MW6						
177	64	PP-12						
178	62	PP-10*						
179	58	PP-7						
180	51	P-25						
181	50.4	PP-31*						
182	48	MW-Du						
183	47	DOF-MW5						
184	46	PP-20						
185	45	PP-24						
186	43	PP-10						
187	42.4	P8-30N						
188	41	PP-13						
189	39	DOF-MW3						
190	36	MW-Cp						
191	35	PP-22						
192	33	DOF-MW4						
193	28	P-22						
194	27	LP-9						
195	25	PP-4						
196	25	P-28						
197	20	LP-16						
198	19.0	PP-5						
199	18.9	PP-1						
200	16	LP-9						
201	16	P-17						
202	15.6	PP-1						
203	14.2	PP-2						
204	14 U	LP-2						
205	14 U	DOF-MW1						
206	14 U	LP-2						
207	14 U	P-16						
208	14 U	MW-Ap						
209	14 U	P-26						
210	14 U	P-27						
211	14 U	P-31						

DRO+RRO in Upland Soil (mg/kg)

ICS-NWC Site
Seatt,e.Washington

	A	B	C	D	E	F	G	H
212	13	P-10						
213	13 U	PP-3						
214	13 U	PP-40						
215	13 U	PP-2						
216	13 U	DOF-MW7						
217	13 U	DOF-MW8						
218	13 U	MW-Bp						
219	10 U	DOF-MW2						
220	33440	LP-6						
221	32500	PP-28						
222	29100	LP-13						
223	10930	LP3-10W						
224	8400	P-18						
225	4900	P-8						
226	4040	P-9						
227	3640	PP-37						
228	3300	LP-17						
229	2766	PP-37*						
230	2011	LP-11						
231	1980	P-6						
232	1387	PP-18						
233	1200	LP-4						
234	1102	PP-39						
235	1042	LP3-10N						
236	1040	P-30						
237	980	P-21						
238	875	LP3-10W						
239	864	LP-8						
240	804	PP-32						
241	802	PP-38*						
242	670	LP3-20N						
243	559	PP-35*						
244	548	LP3-20W						
245	540	P-9						
246	479	PP-38						
247	475	LP3-20S						
248	423	LP-14						
249	356	LP-6						
250	327	PP-26						
251	290	LP-3						
252	287	LP-13						
253	280	P-3						
254	271	SA-MW2						
255	258	PP-25						
256	229	MW-Ju						
257	218	LP3-10S						
258	217	PP-28*						
259	212.1	LP-10						
260	205	LP-12						
261	145	LP-8						
262	145	LP-15						
263	139	PP-35						
264	126	PP-26*						
265	121	P-2						
266	119	LP-16						
267	103	PP-34						
268	100 U	SA-MW3						
269	100 U	SA-MW1						
270	95	LP-18						
271	87.3	PP-28						
272	87	LP-17						
273	84.8	PP-30						
274	82	PP-33						
275	79	LP-5						
276	75	LP3-10E						
277	55	P-5						
278	49.4	PP-31*						
279	44	DOF-MW4						
280	40.3	PP-31*						
281	39.2	P-7						

DRO+RRO in Upland Soil (mg/kg)

ICS-NWC Site
Seatt,e.Washington

	A	B	C	D	E	F	G	H
282	37.9	PP-27						
283	34.3	PP-36						
284	32	LP-9						
285	28	LP-4						
286	26	LP-1						
287	25	PP-8						
288	21	PP-20						
289	19	P-10						
290	17	P-11						
291	16	P-4						
292	14 U	P-20						
293	14 U	P-23						
294	14 U	P-12						
295	14 U	DOF-MW1						
296	14 U	P-12						
297	13 U	P-13						
298	13 U	P-14						
299	13 U	PP-40						
300	13 U	DOF-MW7						
301	13 U	DOF-MW8						
302	13 U	DOF-MW2						
303	12 U	P-23						
304								
305								
306								
307								
308								
309								
310								
311								
312								
313								
314								
315								
316								
317								
318								
319								
320								
321								
322								
323								
324								
325								
326								
327								
328								
329								
330								
331								
332								
333								

Lead in Upland Soil (mg/kg)

	A	B	C	D	E	F	G	H
2	11800	PP-16	<i>MTCASat 97 Site Module</i>					
3	6710	P8-10NE	Number of samples		Uncensored values			
4	6270	PP-18*	Uncensored	295	Mean	284.647		
5	3780	P8-20N	Censored		Lognormal mean	209.842		
6	2170	PP-39	Detection limit or PQL		Std. devn.	1068.046		
7	1440	P8-30N	Method detection limit		Median	17.2		
8	943	PP-17	TOTAL	295	Min.	0.5		
9	689	PP-36	ENTER DATA		Max	11800		
10	687	P-8	<i>Distribution Decision</i>					
11	586	LP3-20N						
12	388	P-27	Probability plot method		W test	D'Agostino's test		
13	386	PP-19						
14	294	P8-10NW	Lognormal distribution?		Normal distribution?			
15	226	P8-20NW	r-squared is: 0.943		r-squared is: 0.270			
16	212	P8-15SW	<i>Recommendations:</i>					
17	154	PP-31	Use lognormal distribution.					
18	153.0	LP3-10N						
19	150	LP3-10W						
20	148	P8-10E						
21	134	LP3-10E	<i>Upper Confidence Limit (UCL)</i>					
22	113	LP3-20W						
23	88	PP-3						
24	78	P8-10N	UCL (Land's method) is 313.955493113834					
25	76	P-23						
26	74.9	P8-30NW						
27	57	HC-B1						
28	55	PP-15						
29	52	PP-33						
30	50	P-1						
31	48	PP-37						
32	42	P-25						
33	42	PP-22						
34	32	PP-21						
35	31	P8-7W						
36	27	PP-38						
37	26	PP-13						
38	23	HC-B4						
39	20	PP-28						
40	19	PP-5						
41	16	PP-12						
42	16	PP-24						
43	15	P8-10S						
44	14	PP-9						
45	12	P8-10SE						
46	7	HC-B2						
47	5.7	PP-11						
48	4.1	PP-4						
49	4	P-9						
50	3.4	DOF-MW3						
51	2.9	PP-7						
52	2.6	P-20						
53	2.4	PP-10						
54	2.2	P-28						
55	1.8	DOF-MW2						
56	0.9 J	PP-23						
57	1	HC-B5						
58	1	HC-B5						
59	4590	P-29						
60	403	LP-1						
61	147	P-13						
62	110	LP-3						
63	106	LP-2						
64	76	P-26						
65	61	P-19						
66	49	MW-Ju						
67	49	P-14						
68	46	P-15						
69	42	P-22						
70	38	P-18						
71	21	P-24						

Sort data

Calculate UCL

Lognormal

Normal

Neither

Clear messages

Clear all

Histogram

5 10 20

Create report

Sample size

Finished

Exit
MTCASat

Lead in Upland Soil (mg/kg)

ICS-NWC Site
Seatt,e.Washington

	A	B	C	D	E	F	G	H
72	18.5	LP-11						
73	11	DOF-MW1						
74	8.4	DOF-MW7						
75	6.6	P-31						
76	4.9	P-11						
77	2.6	DOF-MW6						
78	2.3	DOF-MW5						
79	2.1	P-16						
80	2.1	DOF-MW4						
81	1.7	P-12						
82	1.5	DOF-MW8						
83	5070	LP3-10S						
84	3600	LP-3						
85	3570	P-2						
86	3100	LP3-10W						
87	2890	LP3-20S						
88	2410	PP-18						
89	2370	LP3-20N						
90	1580	LP3-20W						
91	836	SA-MW1						
92	748	LP-4						
93	669.0	LP3-10N						
94	448	LP-1						
95	447	LP-18						
96	444	HC-B2						
97	370	LP-18						
98	311	LP-10						
99	296	PP-39						
100	219	P-6						
101	210	LP-6						
102	207	P8-20NW						
103	179	LP-12						
104	178	P-7						
105	171	HC-B1						
106	158	HC-B2						
107	158	HC-B1						
108	144	LP-11						
109	127	P-21						
110	119	LP-10						
111	112	P8-7W						
112	88	LP3-10E						
113	86	P8-10S						
114	77	SA-MW2						
115	71	P-30						
116	69	LP-17						
117	69	P-18						
118	68	P8-20N						
119	62	PP-36						
120	61	PP-32						
121	60	LP-16						
122	58	PP-39						
123	55	P8-10NW						
124	53	LP3-10S						
125	52	P-27						
126	52	HC-B1						
127	50	P8-10NE						
128	48	LP-15						
129	47	PP-35						
130	46	LP3-20S						
131	46	PP-24						
132	43	PP-38						
133	42	LP-14						
134	40	LP-13						
135	39	P-8						
136	36	PP-33						
137	34	P-24						
138	33	PP-21						
139	31	P8-10N						
140	28	HC-B2						
141	26	P8-10SE						

Lead in Upland Soil (mg/kg)

ICS-NWC Site
Seatt,e.Washington

	A	B	C	D	E	F	G	H
142	25	P-9						
143	23	PP-18*						
144	23	P8-10E						
145	23	PP-17*						
146	22	PP-34						
147	22	LP-15						
148	18	PP-30						
149	18	PP-8						
150	17	P8-15SW						
151	17	PP-1						
152	15	PP-3						
153	14	PP-31						
154	13	P-29						
155	13	LP-16						
156	10	PP-15						
157	10	LP-5						
158	9.8	PP-1						
159	9	P-4						
160	9	P-15						
161	8.2	P-29						
162	8.1	PP-19						
163	8.1	PP-20						
164	8	P-17						
165	8	P-5						
166	7	P-3						
167	7	LP-12						
168	5.8	P-25						
169	5.7	P8-30NW						
170	6	LP-5						
171	5.5	PP-13						
172	4.7	PP-11						
173	4.5	P8-30N						
174	4	LP-14						
175	4.3	LP-2						
176	4.2	DOF-MW6						
177	4.1	PP-16						
178	4.1	MW-Cp						
179	4.1	PP-26						
180	4	P-10						
181	4	P-27						
182	3.9	DOF-MW4						
183	3.6	P-17						
184	3.4	LP-2						
185	3.4	P-28						
186	3.2	PP-5						
187	3.1	LP-9						
188	3.0	PP-17						
189	3.0	DOF-MW1						
190	3.0	DOF-MW7						
191	3.0	DOF-MW8						
192	3.0	MW-Du						
193	2.9	LP-9						
194	2.9	DOF-MW2						
195	2.9	P-19						
196	2.8	DOF-MW3						
197	2.8	P-22						
198	2.8	P-26						
199	2.7 J	PP-9						
200	2.5	MW-Ap						
201	2.3 J	PP-2						
202	2.3 J	PP-2						
203	2.3	DOF-MW6						
204	2.3 J	PP-7						
205	2.2	P-16						
206	2.2	MW-Bp						
207	2.0 J	PP-22						
208	1.9	DOF-MW5						
209	1.9	P-31						
210	1.8 J	PP-40						
211	2	HC-B5						

Lead in Upland Soil (mg/kg)

ICS-NWC Site
Seatt,e.Washington

	A	B	C	D	E	F	G	H
212	1.7 J	PP-23						
213	1.7 J	PP-25						
214	1.7 J	PP-27						
215	1.6 J	PP-10						
216	1.4 J	PP-12						
217	1.3 J	PP-4						
218	1	HC-B4						
219	1	HC-B4						
220	1090	PP-28						
221	950	P-18						
222	892	LP-6						
223	827	PP-39						
224	401	MW-Ju						
225	381	LP-11						
226	294	PP-32						
227	238	LP-17						
228	161	P-8						
229	153	PP-37						
230	150	P-6						
231	118	LP-4						
232	80	LP3-10W						
233	69	LP-13						
234	64	LP3-20N						
235	56	P-18						
236	56	LP-18						
237	52	P-9						
238	52	P-9						
239	48	PP-38						
240	46	PP-34						
241	42	P-30						
242	36	PP-35						
243	31	LP-8						
244	25	SA-MW2						
245	24	P-21						
246	13	P-2						
247	13	PP-18						
248	12	LP3-10W						
249	11	PP-40						
250	10	PP-30						
251	7.6	LP-10						
252	7	LP3-20W						
253	6.5	LP-6						
254	6.4	SA-MW1						
255	6.4	PP-36						
256	6.3	LP3-10N						
257	6.3	DOF-MW4						
258	6.0	PP-33						
259	6	LP-14						
260	4.9	LP3-20S						
261	4.7	DOF-MW2						
262	5	LP-15						
263	4	LP3-10S						
264	4.2	P-11						
265	4.2	LP-3						
266	4	LP3-10E						
267	4	P-5						
268	4	P-7						
269	3.4	P-14						
270	3.1	P-12						
271	3.1	PP-8						
272	3	LP-12						
273	3	P-3						
274	3	P-10						
275	3	P-4						
276	2.8	P-12						
277	2.6	P-23						
278	2.6 J	LP-5						
279	2.5	LP-1						
280	2.5 J	PP-20						
281	2.4	DOF-MW7						

Lead in Upland Soil (mg/kg)

ICS-NWC Site
Seatt,e.Washington

	A	B	C	D	E	F	G	H
282	2.4	DOF-MW8						
283	2.4 J	PP-25						
284	2.3	LP-9						
285	2.3	P-20						
286	2.3	LP-8						
287	2.1 J	PP-26						
288	2.0 J	LP-13						
289	2.0	DOF-MW1						
290	1.9 J	LP-16						
291	1.9 J	PP-28						
292	1.8	SA-MW3						
293	1.8	P-13						
294	1.7 J	PP-27						
295	1.6	LP-4						
296	0.99 J	LP-17						
297								
298								
299								
300								
301								
302								
303								
304								
305								
306								
307								
308								
309								
310								
311								
312								
313								
314								
315								
316								
317								
318								
319								
320								
321								
322								
323								
324								
325								
326								
327								
328								
329								
330								
331								
332								
333								

Mercury in Upland Soil (mg/kg)

ICS-NWC Site
Seatt,e.Washington

	A	B	C	D	E	F	G	H
2	5.0	PP-39	<i>MTCASat 97 Site Module</i>					
3	4.0	PP-36	Number of samples		Uncensored values			
4	3.1	P8-20N	Uncensored	272	Mean	0.574		
5	2.7	P8-15SW	Censored		Lognormal mean	0.307		
6	1.1	PP-24	Detection limit or PQL		Std. devn.	2.244		
7	1.1	P8-20NW	Method detection limit		Median	0.0595		
8	0.97	LP3-10N	TOTAL	272	Min.	0.00668		
9	0.74	PP-19	ENTER DATA		Max	27.8		
10	0.70	P8-30N	<i>Distribution Decision</i>					
11	0.52	P8-10NE						
12	0.52	P8-30NW	Probability plot method		W test	D'Agostino's test		
13	0.48	P8-10S						
14	0.40	P8-10NW	Lognormal distribution?		Normal distribution?			
15	0.38	P-25	r-squared is: 0.904		r-squared is: 0.237			
16	0.38	LP3-20N	<i>Recommendations:</i>					
17	0.36	P8-10E	Use lognormal distribution.					
18	0.31	LP3-10W						
19	0.24	P-27						
20	0.24	PP-33						
21	0.23	LP3-10E	<i>Upper Confidence Limit (UCL)</i>					
22	0.15	PP-31						
23	0.13	PP-16						
24	0.13	PP-17	UCL (Land's method) is 0.394406715454565					
25	0.12	PP-21						
26	0.12	HC-B4						
27	0.10	PP-12						
28	0.09	PP-37						
29	0.08	PP-15						
30	0.07	P8-10N						
31	0.06	PP-38						
32	0.06	P8-7W						
33	0.06	PP-3						
34	0.05	HC-B1						
35	0.05	PP-5						
36	0.04	PP-9						
37	0.04	PP-13						
38	0.03	PP-4						
39	0.03 U	P-28						
40	0.03	HC-B5						
41	0.03	P-20						
42	0.03	P-23						
43	0.03 U	DOF-MW3						
44	0.03	P8-10SE						
45	0.02	PP-11						
46	0.02	PP-22						
47	0.02	LP3-20W						
48	0.02	HC-B2						
49	0.02	HC-B5						
50	0.02 U	DOF-MW2						
51	0.0182 U	PP-23						
52	0.01 J	PP-28						
53	0.01 J	PP-10						
54	0.01 J	PP-7						
55	5.3	P-29						
56	0.37	LP-3						
57	0.30 U	P-12						
58	0.2	P-18						
59	0.18	LP-2						
60	0.17	P-13						
61	0.14	LP-1						
62	0.1	P-19						
63	0.10	MW-Ju						
64	0.07	P-14						
65	0.07	P-15						
66	0.07	LP-11						
67	0.06	P-31						
68	0.06	P-22						
69	0.06	P-26						
70	0.05	P-11						
71	0.05	P-24						

Sort data

Calculate UCL

Lognormal

Normal

Neither

Clear messages

Clear all

Finished

Exit
MTCASat

Histogram

5 10 20

Create report

Sample size

Mercury in Upland Soil (mg/kg)

ICS-NWC Site
Seatt,e.Washington

	A	B	C	D	E	F	G	H
72	0.04	DOF-MW6						
73	0.04	DOF-MW1						
74	0.03	DOF-MW7						
75	0.02 U	P-16						
76	0.02 U	DOF-MW4						
77	0.02 U	DOF-MW5						
78	0.02 U	DOF-MW8						
79	12	LP3-20W						
80	8.7	LP-3						
81	6.0	LP3-10W						
82	5.8	LP3-20S						
83	4.9	LP3-20N						
84	4.1	LP3-10S						
85	3.1	LP-1						
86	2.2	HC-B2						
87	2.1	P-24						
88	2.0	SA-MW1						
89	1.5	LP3-10N						
90	0.74	LP-4						
91	0.71	P8-20NW						
92	0.47	PP-18						
93	0.41	LP-14						
94	0.35	LP-18						
95	0.33	P8-7W						
96	0.33	PP-39						
97	0.31	LP-15						
98	0.30 U	P-26						
99	0.28	LP-16						
100	0.26	HC-B2						
101	0.26	P-30						
102	0.23	P-21						
103	0.23	DOF-MW2						
104	0.22	PP-26						
105	0.22	HC-B1						
106	0.22	P-18						
107	0.22	LP-6						
108	0.19	LP-12						
109	0.19	HC-B1						
110	0.19	P8-10N						
111	0.18 J	PP-1						
112	0.18	P8-20N						
113	0.17	LP-5						
114	0.17	P8-10S						
115	0.16	LP3-10S						
116	0.16	PP-33						
117	0.16	P8-10NE						
118	0.15	PP-38						
119	0.15	LP-14						
120	0.15	LP-11						
121	0.15	PP-34						
122	0.15	P8-10NW						
123	0.14	PP-19*						
124	0.14	LP-13						
125	0.13	LP-18						
126	0.12	LP-10						
127	0.12	PP-32						
128	0.12	P8-10SE						
129	0.12	LP-16						
130	0.12	PP-5						
131	0.09	LP-10						
132	0.09	PP-15						
133	0.08	P8-10E						
134	0.08	LP-12						
135	0.08	PP-25						
136	0.08	P8-15SW						
137	0.07	LP-5						
138	0.07	PP-19						
139	0.06	P-17						
140	0.06	LP-2						
141	0.06	HC-B2						

Mercury in Upland Soil (mg/kg)

ICS-NWC Site
Seattle, Washington

	A	B	C	D	E	F	G	H
142	0.06	HC-B1						
143	0.06	P-27						
144	0.06	PP-8						
145	0.06	PP-21						
146	0.05	PP-35						
147	0.05	DOF-MW1						
148	0.05	P-15						
149	0.05	P-25						
150	0.05	PP-39						
151	0.05	PP-31						
152	0.05	PP-3						
153	0.05	LP-15						
154	0.05	LP-17						
155	0.04	PP-13						
156	0.04	LP3-20S						
157	0.04 U	P-28						
158	0.04 U	DOF-MW6						
159	0.04	P8-30NW						
160	0.04	LP3-10E						
161	0.04	PP-17						
162	0.04	PP-36						
163	0.04	PP-22						
164	0.04	PP-24						
165	0.03 J	PP-16						
166	0.03 U	DOF-MW4						
167	0.03	DOF-MW7						
168	0.03	DOF-MW8						
169	0.03	LP-2						
170	0.03	P-16						
171	0.03 U	P-19						
172	0.03 U	P-29						
173	0.03 U	MW-Ap						
174	0.03	MW-Cp						
175	0.03	MW-Du						
176	0.03	P-17						
177	0.03	P-22						
178	0.03 U	P-31						
179	0.03 J	LP-9						
180	0.03	PP-11						
181	0.03 J	LP-9						
182	0.03 J	PP-24*						
183	0.03 J	PP-9						
184	0.03 U	P8-30N						
185	0.02	HC-B4						
186	0.02	HC-B5						
187	0.02 U	DOF-MW6						
188	0.02 U	DOF-MW3						
189	0.02 U	DOF-MW5						
190	0.02	HC-B5						
191	0.02 U	MW-Bp						
192	0.02 J	PP-23						
193	0.02 J	PP-1						
194	0.02	SA-MW2						
195	0.02 J	PP-27						
196	0.02 J	PP-40						
197	0.02 J	PP-30						
198	0.02	PP-20						
199	0.01 J	PP-4						
200	0.01	PP-10						
201	0.01 J	PP-12						
202	0.01 J	PP-2						
203	0.01 J	PP-28*						
204	0.01 J	PP-7						
205	0.01	HC-B4						
206	0.01	PP-2						
207	28	LP-6						
208	14	PP-28						
209	4.8	P-18						
210	2.9	P-21						
211	2.1	LP-4						

Mercury in Upland Soil (mg/kg)

ICS-NWC Site
Seatt,e.Washington

	A	B	C	D	E	F	G	H
212	0.89	LP-17						
213	0.85	LP-13						
214	0.77	SA-MW1						
215	0.58	PP-39						
216	0.38	LP3-10W						
217	0.38	LP-11						
218	0.32	PP-32						
219	0.30 U	LP-1						
220	0.25	PP-37						
221	0.17	LP-10						
222	0.15	LP-8						
223	0.15	PP-38						
224	0.14	LP3-10W						
225	0.13	LP-3						
226	0.11	LP3-10N						
227	0.10	LP3-20N						
228	0.09 J	PP-30						
229	0.08	P-30						
230	0.07	MW-Ju						
231	0.07	LP3-20W						
232	0.06	LP-14						
233	0.06	LP3-10S						
234	0.06	LP-15						
235	0.06	SA-MW2						
236	0.05	PP-25						
237	0.05	P-14						
238	0.05	LP-6						
239	0.05	LP-12						
240	0.05	PP-35						
241	0.04	LP3-10E						
242	0.04 U	P-11						
243	0.04	P-12						
244	0.04	DOF-MW4						
245	0.04	DOF-MW2						
246	0.04	LP-16						
247	0.04	PP-8						
248	0.03	LP-8						
249	0.03	PP-20						
250	0.03	PP-28*						
251	0.03	LP3-20S						
252	0.03	PP-18						
253	0.03	PP-34						
254	0.03 U	P-13						
255	0.03	P-20						
256	0.03 U	P-23						
257	0.03	DOF-MW1						
258	0.03 U	DOF-MW7						
259	0.03 U	DOF-MW8						
260	0.03	P-12						
261	0.03 U	LP-4						
262	0.03 U	LP-17						
263	0.03 J	LP-18						
264	0.02 J	PP-26						
265	0.02 J	LP-13						
266	0.02 J	PP-36						
267	0.02 J	LP-5						
268	0.02	SA-MW3						
269	0.02 J	PP-33						
270	0.02 J	PP-28						
271	0.01 J	LP-9						
272	0.01 J	PP-27						
273	0.01 J	PP-40						
274								
275								
276								
277								
278								
279								
280								
281								

Mercury in Upland Soil (mg/kg)

ICS-NWC Site
Seattle, Washington

	A	B	C	D	E	F	G	H
282								
283								
284								
285								
286								
287								
288								
289								
290								
291								
292								
293								
294								
295								
296								
297								
298								
299								
300								
301								
302								
303								
304								
305								
306								
307								
308								
309								
310								
311								
312								
313								
314								
315								
316								
317								
318								
319								
320								
321								
322								
323								
324								
325								
326								
327								
328								
329								
330								
331								
332								
333								

**APPENDIX G
REFINED EXTENT OF PRECIPITATE CAP**

**HOT-SPOT CHARACTERIZATION
ICS/NWC
SEATTLE, WASHINGTON**

Memorandum to Vicki Sutton (Ecology) from Matt Dalton (DOF), Re: Extent of Precipitate Cap, Embayment, ICS/NWC RI/FS, June 30, 2021.

6034 N. Star Rd., Ferndale, Washington 98248
Telephone (cell) – (206) 498-6616

MEMORANDUM

TO: Vicki Sutton – Department of Ecology

FROM: Matt Dalton

DATE: June 30, 2021

SUBJECT: Extent of Precipitate Cap
Embayment
ICS/NWC RI/FS

REF. NO: SUM-008-03FS

CC: Ralph Palumbo
Steve Thiele
Ken Bloch
Adam Trotsky
Dave Cooper
Joel Massmann

Reconnaissance of the embayment in 2010 as part of completing the draft Remedial Investigation (RI) report identified a relatively harder, erosion resistant material that appeared to cap underlying sediment (see Appendix A of the DOF February 2020 draft RI report). The harder material was observed to be composed of two distinct material types including waste concrete and a chemical precipitate that appeared to have cemented together sand and finer grained sediment. The waste concrete flows were present along the north bank near the neck of the embayment. The stratigraphy of the flows suggested multiple releases to the embayment.

During the seasonal low tides in June 2021 when the bottom of the embayment was exposed, DOF mapped the extent of the cap using a DGPS. The extent of the cap is based on visual observation, supplemented with shallow probing using a ½” solid hand-probe. DGPS observation locations are shown on Figure 1. The extent of the cap is generally visible on the Figure 1 aerial photograph.

Most of the cap appears to be silica cemented material that was created by the discharge of relatively higher pH concrete wash water into the embayment. The high pH water dissolved silica and the silica precipitated when mixing occurred with lower pH marine water. The refined extent of the precipitate cap is presented on attached Figures 1 and 2. The eastern end of the cap appears to be a combination of silica cemented materials and waste concrete flows.

The precipitate cap was generally hard and impenetrable by hand-tool methods. In areas where it was penetrated by previously completed cores (HS-6, Core B, Core G), the thickness ranged from

1.5 to 2.0 feet. The precipitate is covered with a thin sediment layer less than a centimeter thick. Near the toe there is a varying thickness of sediment over the cap, approximately 3- to 6-inches thick. Near the east end of the ecology block wall, where the wall turns northward, the cap appears to be covered with more than 3-feet of softer sediment. It is possible the cap is missing from this small area.

Attachments

Figure 1 – DGPS Measurement Locations

Figure 2 – Refined Extent of Precipitate Cap

Figure 2 – Refined Extent of Precipitate Cap and Sampling Locations

ALASKA MARINE LINES



DUWAMISH WATERWAY

RESERVOIR
OVERFLOW
OUTFALL

OUTFALL

TROTSKY
PROPERTY

S Orchard St

OCCIDENTAL
AVE S.

NOTES

1. Topographic and feature survey performed by Bush, Roed & Hitchings, Inc. - July 2018
2. Horizontal Datum: NAD 83/91 Washington State Plane Coordinates, North Zone (US feet).
3. Vertical Datum: NAVD88 (feet). Difference from NAVD 88 to MLLW = 2.39'
4. Background image source: Google Earth Pro 2020. Use for visual reference only.

LEGEND

-  DGPS Observation Location
-  Trotsky Property Boundary



ICS/NW Cooperage Site
Seattle, Washington
Feasibility Study

**DGPS OBSERVATION LOCATIONS
PRECIPITATE CAP**



FIGURE
1

PLOT TIME: 6/30/2021 8:46 AM MOD TIME: 6/30/2021 8:45 AM USER: Lee Barras DWG: P:\ICS-NW Cooperage\Figures\2021-06\FS\2021-06-30 ICS Precipitate Cap.dwg

ALASKA MARINE LINES



DUWAMISH WATERWAY

RESERVOIR OVERFLOW
OUTFALL

REFINED
PRECIPITATE
EXTENT

+3' OF SOFTER
SEDIMENT

OUTFALL

TROTSKY
PROPERTY

S Orchard St

OCCIDENTAL
AVE S.

PLOT TIME: 6/30/2021 8:46 AM MOD TIME: 6/30/2021 8:45 AM USER: Lee Barras DWG: P:\ICS-NW Cooperage\Figures\2021-06\FS\2021-06-30 ICS Precipitate Cap.dwg

NOTES

1. Topographic and feature survey performed by Bush, Roed & Hitchings, Inc. - July 2018
2. Horizontal Datum: NAD 83/91 Washington State Plane Coordinates, North Zone (US feet).
3. Vertical Datum: NAVD88 (feet). Difference from NAVD 88 to MLLW = 2.39'
4. Background image source: Google Earth Pro 2020. Use for visual reference only.

LEGEND

-  Refined Extent of Precipitate Cap
-  +3' of Softer Sediment
-  Trotsky Property Boundary

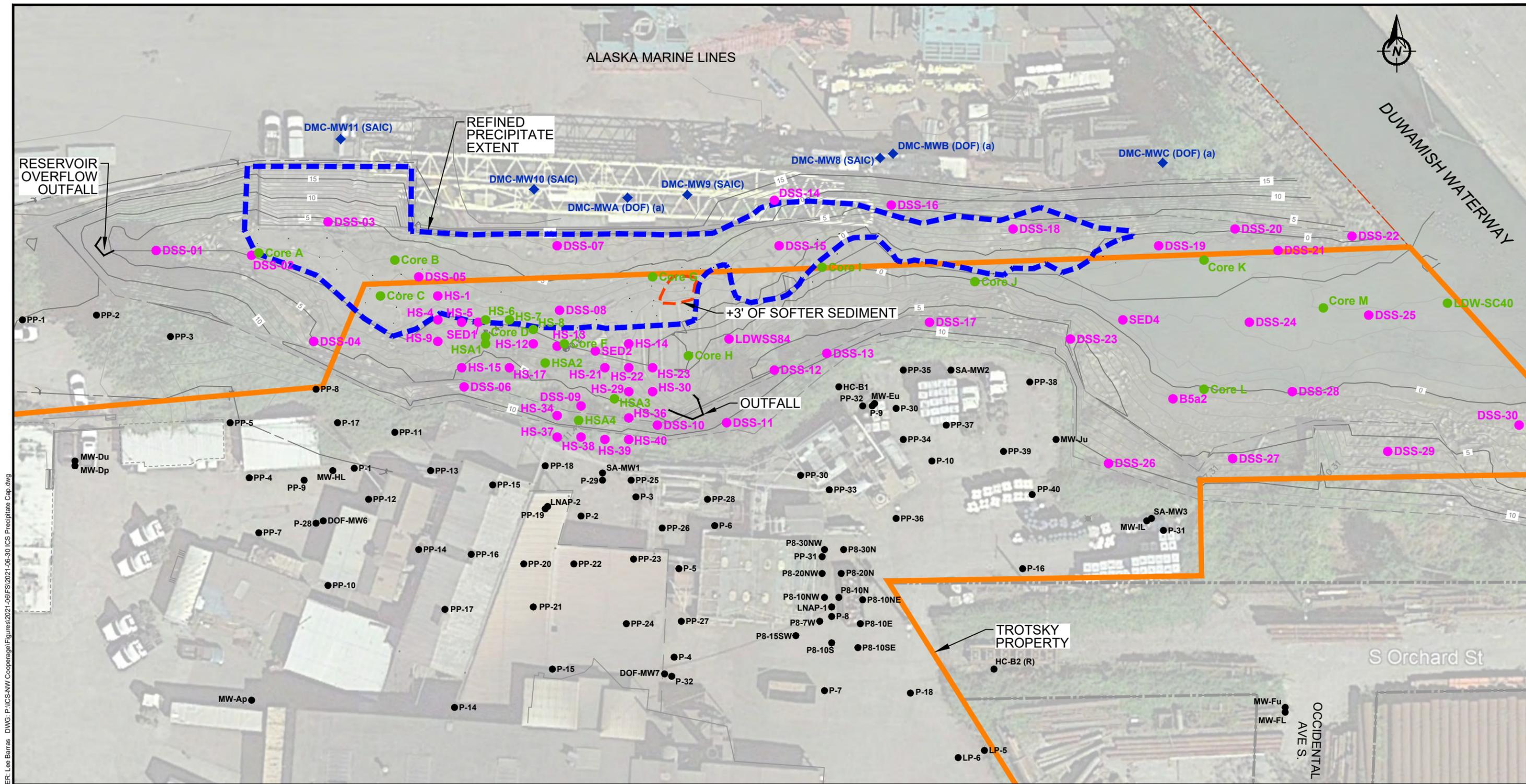


ICS/NW Cooperage Site
Seattle, Washington
Feasibility Study

REFINED EXTENT OF PRECIPITATE CAP



FIGURE
2



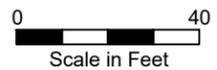
PLOT TIME: 6/30/2021 8:46 AM MOD TIME: 6/30/2021 8:45 AM USER: Lee Barras DWG: P:\ICS-NW Coorage\Figures\2021-06\FS\2021-06-30 ICS Precipitate Cap.dwg

NOTES

1. Topographic and feature survey performed by Bush, Roed & Hitchings, Inc. - July 2018
2. Horizontal Datum: NAD 83/91 Washington State Plane Coordinates, North Zone (US feet).
3. Vertical Datum: NAVD88 (feet). Difference from NAVD 88 to MLLW = 2.39'
4. Background image source: Google Earth Pro 2020. Use for visual reference only.

LEGEND

- ▬▬▬ Refined Extent of Precipitate Cap
- - - +3' of Softer Sediment
- DSS-11 Surface Sediment Sample Location & ID
- Core I Sediment Core Location & ID
- ◆ DMC-MWB (x) Well Location & ID
- PP-27 Push-Probe Location & ID
- ▬▬▬ Trotsky Property Boundary



ICS/NW Coorage Site
Seattle, Washington
Feasibility Study

**REFINED EXTENT OF PRECIPITATE CAP
WITH SAMPLING LOCATIONS**



FIGURE
3

SUM-008-03FS 06/30/2021