



July 20, 2017

Alexis Blue
Coastal Geologic Services
1711 Ellis St, #103
Bellingham, WA 98225

Cc: Analiese Burns, City of Bellingham
Freeman Anthony, PE, City of Bellingham

Re: Subsurface Investigation Summary Report
Little Squalicum Estuary Project
Bellingham, Washington
Aspect Project No. 150409

Dear Ms. Blue:

Aspect Consulting, LLC (Aspect) has prepared this summary report to document the results of the subsurface investigation conducted at the site of the proposed Little Squalicum Estuary (LSE) project in Little Squalicum Park in Bellingham, Washington. The investigation was conducted to determine the presence or absence of contaminants of potential concern (COPCs) in soil associated with historical operations on and adjacent to the Park. This report provides a brief description of the site location and background, a summary of the soil investigation activities, and a discussion of the results.

Based on the results of this investigation, chemical concentrations in soil representing the future constructed surface of the LSE are below Washington State Sediment Management Standards (SMS) Marine Sediment Cleanup Objectives (SCOs), except that the laboratory did not achieve the SMS-required practical quantitation limit (PQL) for carcinogenic polycyclic aromatic hydrocarbons¹ (cPAHs). However, given that there are no exceedances of SCOs for any other chemicals, the slight difference between the laboratory PQL and the calculated risk-based SCO, and the history of the Project site, it is unlikely that the analytical results for total cPAHs would exceed the SCO if the appropriate PQL were achieved by the lab.

Conversely, sample AB-06-0-2, located within the LSE excavation footprint but on the banks of Little Squalicum Creek upstream of the planned LSE, contained nickel, lead, and total polycyclic aromatic hydrocarbons (PAHs) at concentrations above the SMS Freshwater SCOs.

Detected COPC concentrations in samples of soil to be excavated and disposed or reused off-site comply with Washington State Model Toxics Cleanup Act (MTCA) Method A Soil Cleanup Levels for Unrestricted Use.

¹ Calculated as total toxic equivalent concentration of benzo(a)pyrene (TEQ) in accordance with MTCA.

Site Background

The proposed LSE encompasses two areas where contaminated soil has previously been reported. One location is in the historical creek channel that, following the U.S. Environmental Protection Agency's (EPA) Little Squalicum Creek removal action, contained residual PAH contamination attributable to runoff from the Oeser site (CH2M Hill, 2012). The other location is in an isolated area that the Washington State Department of Ecology (Ecology) found to have diesel-range total petroleum hydrocarbon (TPH) contamination attributable to historical industrial use of the site, but not related to the Oeser site (Ecology, 2013). In subsequent analysis of samples collected at the locations and depths where Ecology found diesel-range TPHs, no TPH contamination was detected, either in laboratory analysis or field screening (Herrenkohl, 2013).

Investigation Activities

On February 17, 2017, ten soil borings were advanced in the footprint of the proposed LSE (Figure 1). The borings were advanced with a track-mounted direct-push rig operated by Cascade Drilling, LLC, under subcontract to Aspect. Eight of the ten borings were in locations distributed across the vertical and horizontal extent of the soil prism proposed to be excavated during estuary construction. One boring, AB-06, was located in Little Squalicum Creek upstream of the proposed estuary, where CH2M Hill found Oeser-attributed PAHs above cleanup levels for the Oeser site. Another boring, AB-01, was located where Ecology found TPHs above cleanup levels (Ecology, 2013).

One or more soil samples were collected from each boring, for a total of 20 samples. In each boring, a composite sample was collected at the depth where the surface will be exposed after LSE construction. Additionally, in all borings except AB-06, composite samples were also collected at depths intermediate between the current ground surface and the proposed postconstruction surface, thus representing soil to be excavated. The soil samples were submitted to Edge Analytical, an Ecology-accredited laboratory in Burlington, Washington, for analysis of COPCs (metals, diesel- and oil-range TPHs, and semivolatile organic compounds [SVOCs]).

All soil from the borings was field-screened for petroleum contamination with a photoionization detector (PID), a sheen test, and by odor, and the soil was classified by a licensed Aspect geologist using the Unified Soil Classification System (USCS). The boring logs documenting the subsurface conditions and results of field screening are included as Attachment 1.

The analytical results for each soil sample were compared against applicable regulatory criteria. Data from soil samples representing material that will be excavated and will require off-site disposal, or other beneficial reuse, were compared against MTCA Method A Soil Cleanup Levels for Unrestricted Land Use (Table 1). Data from samples of soil representing the bottom surface of the future LSE that will be exposed to marine waters were compared against SMS Marine SCOs based on protection of both benthic organisms and humans (Table 2). Data from the single sample (AB-06-0-2) representing soil that is in Little Squalicum Creek upstream of the future estuary, and would be exposed to freshwater, were compared against SMS Freshwater SCOs based on protection of both benthic organisms and humans (Table 3). The SCOs based on benthic protection are from WAC 173-204-562 Table III (marine) and WAC 173-204-563 Table IV (freshwater). For bioaccumulative chemicals, SCOs based on protection of human health are the higher of a calculated risk-based concentration, or natural background marine sediment concentrations (from Table 10-1 of Ecology, 2017), or the analytical practical quantitation limit (PQL; Table 11-1 of

Ecology, 2017) for the data set in accordance with Ecology (2017). Based on discussion with Ecology, the analytical results for total cPAHs (TEQ) were compared against the calculated risk-based value derived for the I&J Waterway cleanup site located near the Project site (Anchor QEA, 2015). The laboratory's analytical reports are included as Attachment 2.

Results

The analytical results for the samples from the nine locations representing soil to be left in place as the future LSE sediment surface are below SMS Marine SCOs, except that the laboratory did not achieve the SMS-required PQL for total cPAHs. Therefore, the reported nondetect values at the PQL are slightly higher than the calculated risk-based SCO (Table 2). However, given that there are no exceedances of SCO for any other chemicals, the slight difference between the PQL and the SCO, and the history of the Project site, it is unlikely that the analytical results for total cPAHs would exceed SCO if the appropriate PQL were achieved by the lab.

Analytical results from samples in those same locations but at shallower depths, representing soil that will be excavated during construction, comply with MTCA Method A Soil Cleanup Levels for Unrestricted Land Use (Table 1).

In the composite sample from the surface to 3 feet below ground surface in boring AB-09, near the southwest corner of the LSE footprint, oil-range TPH was detected at 1,450 milligrams per kilogram (mg/kg), below the 2,000 mg/kg unrestricted soil cleanup level that is based on preventing accumulation of petroleum free product on groundwater. No free product was observed during drilling. No hydrocarbons were detected deeper in the same boring, either by the analytical lab or by field screening. We consider that it is likely the oil in the soil represented by sample AB-09-0-3 is from a small surface release related to the historical industrial use of the Park. Note that, while that detected TPH concentration meets the MTCA unrestricted soil cleanup level, it exceeds reuse criteria for petroleum-contaminated soil identified by Ecology (2016) guidance. Under those Ecology guidelines, the soil represented by that sample is reusable only for asphalt manufacturing or as landfill daily cover. To comply with Ecology's guidance, the soil represented by sample AB-09-0-3 must be segregated during excavation and disposed of at a Subtitle D landfill.

In the Little Squalicum Creek (freshwater) location upstream of the planned estuary, sample AB-06-0-2 contained COPCs above SMS Freshwater SCOs (Table 3). Nickel and lead were also detected in this sample at concentrations of 33.5 mg/kg and 69.3 mg/kg, respectively, which exceed the most restrictive Freshwater SCOs. However, the detected nickel concentration (and the benthic-based SCO) is below natural background concentrations for upland soil (48 mg/kg) and marine sediment (50 mg/kg) as determined by Ecology (1994 and 2017, respectively). Boring AB-06 was advanced at the location of CH2M Hill's 2012 sample CCS-T06-RTWALL, in which total PAHs were detected at 11.5 mg/kg. CH2M Hill's result is comparable to the 22.2 mg/kg measured in sample AB-06-0-2 during this investigation. Both results are above EPA's site-specific soil cleanup level (3.6 mg/kg) for the Oeser Property and Little Squalicum Creek Area (CH2M Hill, 2012), and the current result is above the SMS Freshwater SCO for benthic protection (17 mg/kg). The concentration of total cPAH (TEQ) in this sample (2.4 mg/kg) also exceeds the human health-based SCO (0.061 mg/kg).

During construction of the LSE, when soil is excavated from the area near the AB-06-0-2 sample, the excavated material should be stockpiled separately from other soil. The stockpiled material

should be sampled and characterized for disposal. The area near AB-06-0-2 should be overexcavated 2 to 3 feet, laterally and vertically, beyond the designed grade. Then, as required by the EPA (EPA, 2017), three post-excavation surface samples should be collected in the area of deepest excavation near the location of AB-06—one sample taken from the creek bed, and one sample from each creek bank—to document the residual soil quality prior to backfill. Clean backfill will be placed in the overexcavated area to achieve the design grade, which will effectively cap the excavated surface in this area.

References

- Anchor QEA, 2015, Remedial Investigation and Feasibility Study Report, I&J Waterway Site, February 2015.
- CH2M Hill, 2012, Little Squalicum Creek Removal Action Construction Completion Report, U.S. Environmental Protection Agency, Region 10, ES10 – Task Order 063-VO-BB-10HP.
- Herrenkohl Consulting (Herrenkohl), 2013, Environmental Site Characterization, Little Squalicum Creek Estuary Project. June 27, 2013.
- U.S. Environmental Protection Agency (EPA), 2017, Email from Justine Barton to Randel Perry and Joe Wallace, January 05, 2017, 4:31PM, subject: NWS-2016-764 EPA CERCLA Coordination Comments, Bellingham Public Works, Little Squalicum Creek Estuary.
- Washington State Department of Ecology (Ecology), 1994, Natural Background Soil Metals Concentrations in Washington State, Washington Department of Ecology, Toxics Cleanup Program, Olympia, Washington, Publication No. 94-115.
- Washington State Department of Ecology (Ecology), 2013, Little Squalicum Creek Estuary Soil and Groundwater Characterization, Washington State Department of Ecology, Environmental Assessment Program, Olympia, Washington, Publication No. 13-03-011.
- Washington State Department of Ecology (Ecology), 2016, Guidance for Remediation of Petroleum Contaminated Sites, Toxics Cleanup Program publication number 10-09-057, Revised June 2016.
- Washington State Department of Ecology (Ecology), 2017, Sediment Cleanup User's Manual II, Toxics Cleanup Program publication number 12-09-057, Public comment review draft, Revised April 2017.

Limitations

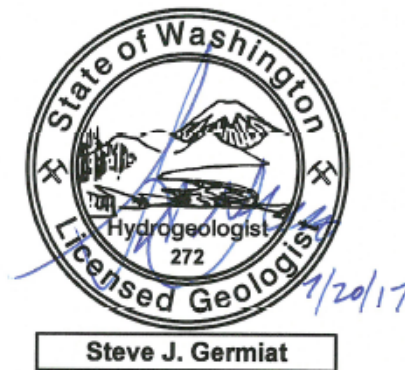
Work for this project was performed for Coastal Geologic Services (Client), and this report was prepared in accordance with generally accepted professional practices for the nature and conditions of work completed in the same or similar localities, at the time the work was performed. This letter does not represent a legal opinion. No other warranty, expressed or implied, is made.

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Sincerely,

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Attachments

- Table 1 Analytical Data for Soil To Be Excavated from Estuary
- Table 2 Analytical Data for Soil Representing Future Estuary Sediment Surface
- Table 3 Analytical Data for Upstream Freshwater Location
- Figure 1 Exploration Locations and Sample Results
- Attachment 1 Exploration Logs
- Attachment 2 Laboratory Analytical Reports

TABLES

Table 1 - Analytical Data for Soil To Be Excavated from Estuary

Project No. 150409, Little Squalicum Estuary Project, Bellingham, WA

			Samples Representing Soil to be Excavated									
Analyte	Units	MTCA Method A Unrestricted Soil Cleanup Level	AB-01 5 - 8 ft	AB-02 5 - 8 ft	AB-03 5 - 7 ft	AB-04 1 - 4 ft	AB-05 1 - 3 ft	AB-07 0 - 3 ft	AB-08 5 - 7 ft	AB-09 0 - 3 ft	AB-10 5 - 10 ft	AB-10 10 - 13 ft
Conventionals												
Total Organic Carbon	mg/kg		4900	7000	5100	6200	2700	13000	3700	86000	3200	3100
Metals												
Arsenic	mg/kg	20	4.49	2.04	1.37	5.14	0.92 U	2.21	1.43	2.24	0.91 U	0.93 U
Cadmium	mg/kg	2	0.93 U	0.85 U	0.90 U	0.88 U	0.92 U	0.86 U	0.94 U	1.00 U	0.91 U	0.93 U
Chromium	mg/kg		23.7	40.3	44.4	33.7	50.2	25.5	27.1	23.8	31	7.55
Copper	mg/kg		23.3	24.3	14.6	40	16.6	27.1	20.8	18.1	23.2	10.9
Lead	mg/kg	250	1.23	1.16	0.90 U	0.88 U	1.46	5.99	1.23	10.1	1.57	0.93 U
Mercury	mg/kg	2	0.0303	0.0240	0.0301	0.0768	0.0182	0.0478	0.0322	0.0186	0.0354	0.0236
Silver	mg/kg		0.93 U	0.85 U	0.90 U	0.88 U	0.92 U	0.86 U	0.94 U	1.00 U	0.91 U	0.93 U
Zinc	mg/kg		35.1	53.7	30.7	65	27.5	58.3	33.9	41.6	26.9	15.8
Organics (Dry Weight-Based Concentrations)												
Diesel Range Organics	mg/kg	2000	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U
Motor Oil Range Organics	mg/kg	2000	50 U	50 U	50 U	50 U	50 U	50 U	50 U	1450	50 U	50 U
N-Nitrosodiethylamine	mg/kg		0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,2,4-Trichlorobenzene	mg/kg		0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
1,2-Dichlorobenzene	mg/kg		0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U
1,4-Dichlorobenzene	mg/kg		0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U
2,4-Dimethylphenol	mg/kg		0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U
2-Methylphenol	mg/kg		0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
4-Methylphenol	mg/kg		0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
Benzoic acid	mg/kg		0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Benzyl alcohol	mg/kg		0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
Benzyl butyl phthalate	mg/kg		0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U
Bis(2-ethylhexyl) phthalate	mg/kg		0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U
Dibenzofuran	mg/kg		0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Diethyl phthalate	mg/kg		0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Dimethyl phthalate	mg/kg		0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Di-n-butyl phthalate	mg/kg		0.41 U	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U
Di-n-octyl phthalate	mg/kg		0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U
Hexachlorobenzene	mg/kg		0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Hexachlorobutadiene	mg/kg		0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Pentachlorophenol	mg/kg		0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
Phenol	mg/kg		0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
2-Methylnaphthalene	mg/kg		0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U
Acenaphthene	mg/kg		0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U
Acenaphthylene	mg/kg		0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U
Anthracene	mg/kg		0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U
Benz(a)anthracene	mg/kg		0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U
Benzo(a)pyrene	mg/kg		0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U
Benzo(g,h,i)perylene	mg/kg		0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U
Chrysene	mg/kg		0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.27	0.06 U	0.06 U
Dibenzo(a,h)anthracene	mg/kg		0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U
Fluoranthene	mg/kg		0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.24	0.06 U	0.06 U
Fluorene	mg/kg		0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U
Indeno(1,2,3-cd)pyrene	mg/kg		0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U
Naphthalene	mg/kg	5	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U
Phenanthrene	mg/kg		0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.12	0.06 U	0.06 U
Pyrene	mg/kg		0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.2	0.06 U	0.06 U
Total Benzofluoranthenes	mg/kg		0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U
Total cPAHs TEQ (ND = 1/2 RDL)	mg/kg	0.1	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U	0.045	0.085 U	0.085 U

Notes

- Bold - detected.
- Highlighted - exceeds Unrestricted Soil Cleanup Level.

Table 2 - Analytical Data for Soil Representing Future Estuary Sediment Surface

Project No. 150409, Little Squalicum Estuary Project, Bellingham, WA

		Marine Sediment Cleanup Objectives		Samples Representing Future Estuary Sediment Surface								
Analyte	Units	Human Health Protection	Benthic Protection	AB-01 10 - 13 ft	AB-02 10 - 12 ft	AB-03 10 - 13 ft	AB-04 5 - 9 ft	AB-05 6 - 8 ft	AB-07 9 - 10 ft	AB-08 10 - 13 ft	AB-09 8 - 9 ft	AB-10 15 - 17 ft
Conventionals												
Total Organic Carbon	mg/kg			16000	3800	4000	4900	3100	5600	5000	5800	3800
Fractional Total Organic Carbon (foc)	-			0.016	0.0038	0.004	0.0049	0.0031	0.0056	0.005	0.0058	0.0038
Metals												
Arsenic	mg/kg	11	57	1.81	1.01 U	2.88	5.53	2.76	9.33	1.05 U	0.65	0.85 U
Cadmium	mg/kg		5.1	0.92 U	1.01 U	1.02 U	1.04 U	1.02 U	0.97 U	1.05 U	0.33 U	0.85 U
Chromium	mg/kg		260	42.9	28.4	37	36.1	43.7	42.8	22.6	119	48
Copper	mg/kg		390	22.9	24.3	25.5	30.8	25.4	28	26.1	20.6	14.7
Lead	mg/kg	21	450	0.52	1.01 U	1.02 U	1.04 U	1.03	0.97 U	1.42	0.64	0.85 U
Mercury	mg/kg	0.2	0.41	0.0385	0.0375	0.0519	0.0629	0.0367	0.0458	0.0467	0.0263	0.0147
Silver	mg/kg		6.1	0.92 U	1.01 U	1.02 U	1.04 U	1.02 U	0.97 U	1.05 U	0.33 U	0.85 U
Zinc	mg/kg		410	32.6	44.5	46.5	68	41.3	22.3	60.9	20.2	34
Organics (Dry Weight-Based Concentrations)												
Diesel Range Organics	mg/kg			50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U
Motor Oil Range Organics	mg/kg			50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U
N-Nitrosodiethylamine	mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,2,4-Trichlorobenzene	mg/kg			0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
1,2-Dichlorobenzene	mg/kg			0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U
1,4-Dichlorobenzene	mg/kg			0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U
2,4-Dimethylphenol	mg/kg		0.029	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U
2-Methylphenol	mg/kg		0.063	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
4-Methylphenol	mg/kg		0.67	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
Benzoic acid	mg/kg		0.65	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Benzyl alcohol	mg/kg		0.057	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
Benzyl butyl phthalate	mg/kg			0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U
Bis(2-ethylhexyl) phthalate	mg/kg			0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U
Dibenzofuran	mg/kg			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Diethyl phthalate	mg/kg			0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Dimethyl phthalate	mg/kg			0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Di-n-butyl phthalate	mg/kg			0.41 U	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U
Di-n-octyl phthalate	mg/kg			0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U
Hexachlorobenzene	mg/kg			0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Hexachlorobutadiene	mg/kg			0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Pentachlorophenol	mg/kg		0.36	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
Phenol	mg/kg		0.42	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
2-Methylnaphthalene	mg/kg			0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U
Acenaphthene	mg/kg			0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U
Acenaphthylene	mg/kg			0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U
Anthracene	mg/kg			0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U
Benz(a)anthracene	mg/kg			0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U
Benzo(a)pyrene	mg/kg			0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U
Benzo(g,h,i)perylene	mg/kg			0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U
Chrysene	mg/kg			0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U
Dibenzo(a,h)anthracene	mg/kg			0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U

Table 2 - Analytical Data for Soil Representing Future Estuary Sediment Surface

Project No. 150409, Little Squalicum Estuary Project, Bellingham, WA

		Samples Representing Future Estuary Sediment Surface										
		Marine Sediment Cleanup Objectives		AB-01	AB-02	AB-03	AB-04	AB-05	AB-07	AB-08	AB-09	AB-10
Analyte	Units	Human Health Protection	Benthic Protection	10 - 13 ft	10 - 12 ft	10 - 13 ft	5 - 9 ft	6 - 8 ft	9 - 10 ft	10 - 13 ft	8 - 9 ft	15 - 17 ft
Fluoranthene	mg/kg			0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U
Fluorene	mg/kg			0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U
Indeno(1,2,3-cd)pyrene	mg/kg			0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U
Naphthalene	mg/kg			0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U
Phenanthrene	mg/kg			0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U
Pyrene	mg/kg			0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U
Total Benzofluoranthenes	mg/kg			0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U
Total cPAHs TEQ (ND = 1/2 RDL)	mg/kg	0.061		0.085 U	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U
Organics (Normalized for Organic Carbon Content, for Compounds with OC-based SCOs)												
1,2,4-Trichlorobenzene	mg/kg-OC		0.81	1.5 U	6.3 U	6.0 U	4.9 U	7.7 U	4.3 U	4.8 U	4.1 U	6.3 U
1,2-Dichlorobenzene	mg/kg-OC		2.3	1.9 U	7.9 U	7.5 U	6.1 U	9.7 U	5.4 U	6.0 U	5.2 U	7.9 U
1,4-Dichlorobenzene	mg/kg-OC		3.1	1.9 U	7.9 U	7.5 U	6.1 U	9.7 U	5.4 U	6.0 U	5.2 U	7.9 U
Benzyl butyl phthalate	mg/kg-OC		4.9	13.9 U	58.4 U	55.5 U	45.3 U	71.6 U	39.6 U	44.4 U	38.3 U	58.4 U
Bis(2-ethylhexyl) phthalate	mg/kg-OC		47	13.9 U	58.4 U	55.5 U	45.3 U	71.6 U	39.6 U	44.4 U	38.3 U	58.4 U
Dibenzofuran	mg/kg-OC		15	3.4 U	14.2 U	13.5 U	11.0 U	17.4 U	9.6 U	10.8 U	9.3 U	14.2 U
Diethyl phthalate	mg/kg-OC		61	12.4 U	52.1 U	49.5 U	40.4 U	63.9 U	35.4 U	39.6 U	34.1 U	52.1 U
Dimethyl phthalate	mg/kg-OC		53	11.6 U	48.9 U	46.5 U	38.0 U	60.0 U	33.2 U	37.2 U	32.1 U	48.9 U
Di-n-butyl phthalate	mg/kg-OC		220	25.9 U	109 U	104 U	84 U	134 U	73.9 U	83 U	71.4 U	109 U
Di-n-octyl phthalate	mg/kg-OC		58	13.9 U	58.4 U	55.5 U	45.3 U	71.6 U	39.6 U	44.4 U	38.3 U	58.4 U
Hexachlorobenzene	mg/kg-OC		0.38	1.1 U	4.7 U	4.5 U	3.7 U	5.8 U	3.2 U	3.6 U	3.1 U	4.7 U
Hexachlorobutadiene	mg/kg-OC		3.9	0.8 U	3.2 U	3.0 U	2.4 U	3.9 U	2.1 U	2.4 U	2.1 U	3.2 U
2-Methylnaphthalene	mg/kg-OC		38	3.8 U	15.8 U	15.0 U	12.2 U	19.4 U	10.7 U	12.0 U	10.3 U	15.8 U
Acenaphthene	mg/kg-OC		16	3.8 U	15.8 U	15.0 U	12.2 U	19.4 U	10.7 U	12.0 U	10.3 U	15.8 U
Acenaphthylene	mg/kg-OC		66	3.8 U	15.8 U	15.0 U	12.2 U	19.4 U	10.7 U	12.0 U	10.3 U	15.8 U
Anthracene	mg/kg-OC		220	3.8 U	15.8 U	15.0 U	12.2 U	19.4 U	10.7 U	12.0 U	10.3 U	15.8 U
Benz(a)anthracene	mg/kg-OC		110	3.8 U	15.8 U	15.0 U	12.2 U	19.4 U	10.7 U	12.0 U	10.3 U	15.8 U
Benzo(a)pyrene	mg/kg-OC		99	3.8 U	15.8 U	15.0 U	12.2 U	19.4 U	10.7 U	12.0 U	10.3 U	15.8 U
Benzo(g,h,i)perylene	mg/kg-OC		31	3.8 U	15.8 U	15.0 U	12.2 U	19.4 U	10.7 U	12.0 U	10.3 U	15.8 U
Chrysene	mg/kg-OC		110	3.8 U	15.8 U	15.0 U	12.2 U	19.4 U	10.7 U	12.0 U	10.3 U	15.8 U
Dibenzo(a,h)anthracene	mg/kg-OC		12	3.8 U	15.8 U	15.0 U	12.2 U	19.4 U	10.7 U	12.0 U	10.3 U	15.8 U
Fluoranthene	mg/kg-OC		160	3.8 U	15.8 U	15.0 U	12.2 U	19.4 U	10.7 U	12.0 U	10.3 U	15.8 U
Fluorene	mg/kg-OC		23	3.8 U	15.8 U	15.0 U	12.2 U	19.4 U	10.7 U	12.0 U	10.3 U	15.8 U
Indeno(1,2,3-cd)pyrene	mg/kg-OC		34	3.8 U	15.8 U	15.0 U	12.2 U	19.4 U	10.7 U	12.0 U	10.3 U	15.8 U
Naphthalene	mg/kg-OC		99	3.8 U	15.8 U	15.0 U	12.2 U	19.4 U	10.7 U	12.0 U	10.3 U	15.8 U
Phenanthrene	mg/kg-OC		100	3.8 U	15.8 U	15.0 U	12.2 U	19.4 U	10.7 U	12.0 U	10.3 U	15.8 U
Pyrene	mg/kg-OC		1000	3.8 U	15.8 U	15.0 U	12.2 U	19.4 U	10.7 U	12.0 U	10.3 U	15.8 U
Total Benzofluoranthenes	mg/kg-OC		230	3.8 U	15.8 U	15.0 U	12.2 U	19.4 U	10.7 U	12.0 U	10.3 U	15.8 U
Total HPAHs	mg/kg-OC		960	22.5 U	94.7 U	90.0 U	73.5 U	116 U	64.3 U	72.0 U	62.1 U	94.7 U
Total LPAHs	mg/kg-OC		370	33.8 U	142 U	135 U	110 U	174 U	96.4 U	108 U	93.1 U	142 U

Notes
Bold - Detected. Highlighted - Not detected, but analytical practical quantitation level (PQL) is greater than the Marine Sediment Cleanup Objective (SCO).
Benthic protection SCOs from WAC 173-204-562 Table III.
Human health SCOs (for bioaccumulative compounds only) are the higher of a calculated risk-based concentration, the natural background sediment value, or the PQL.
2015).

Table 3 - Analytical Data for Upstream Freshwater Location

Project No. 150409, Little Squalicum Estuary Project, Bellingham, WA

		Freshwater Sediment Cleanup Objectives		AB-06 0 - 2 ft
Analyte	Units	Human Health Protection	Benthic Protection	
Conventionals				
Sulfide	mg/kg		39	0.79 U
Metals				
Arsenic	mg/kg	11	14	5.89
Cadmium	mg/kg		2.1	1.00 U
Chromium	mg/kg		72	44.1
Copper	mg/kg		400	378
Lead	mg/kg	21	360	69.3
Mercury	mg/kg	0.2	0.66	0.1312
Nickel	mg/kg		26	33.5
Selenium	mg/kg		11	2.56
Silver	mg/kg		0.57	1.00 U
Zinc	mg/kg		3200	162
Organics (Dry Weight-Based Concentrations)				
Diesel Range Organics	mg/kg		340	100 U
Motor Oil Range Organics	mg/kg		3600	99
1-Methylnaphthalene	mg/kg			0.08 J
2-Methylnaphthalene	mg/kg			0.1
Acenaphthene	mg/kg			0.04 J
Acenaphthylene	mg/kg			0.78
Anthracene	mg/kg			1.04
Benz(a)anthracene	mg/kg			0.59
Benzo(a)pyrene	mg/kg			1.56
Benzo(b)fluoranthene	mg/kg			2.21
Benzo(g,h,i)perylene	mg/kg			4.95
Benzo(k)fluoranthene	mg/kg			0.78
Chrysene	mg/kg			2.77
Dibenzo(a,h)anthracene	mg/kg			0.65
Fluoranthene	mg/kg			0.35
Fluorene	mg/kg			0.12
Indeno(1,2,3-cd)pyrene	mg/kg			4.26
Naphthalene	mg/kg			0.15
Phenanthrene	mg/kg			0.34
Pyrene	mg/kg			0.45
Total cPAHs TEQ (ND = 1/2 RDL)	mg/kg	0.061		2.44
Total PAHs	mg/kg		17	21.2

Notes:

Bold - Detected.

Highlighted - Exceeds Freshwater Sediment Cleanup Objectives.

Table 3

Aspect Consulting

7/20/2017

V:\150409 Little Squalicum Estuary\Deliverables\Subsurface Investigation\FINAL\Table 3 - Creek Freshwater Sediment Data -REV.xlsx

Subsurface Investigation Summary Report

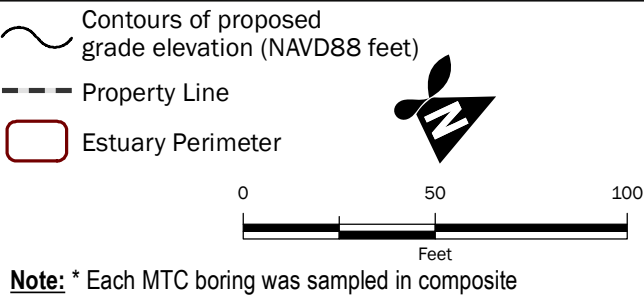
Page 1 of 1

FIGURE



- Exploration (Responsible Party, Year)**
- Boring (Ecology, 2013)
 - Boring (Herrenkohl, 2013)
 - ▲ Boring (MTC*, 2017)
 - Soil Sample (CH2MHill, 2012)
 - Boring (Aspect, 2017)

- Previous Investigations' Sampling Results**
- Above MTCA Method A Unrestricted Soil Cleanup Level
 - Below MTCA Method A Unrestricted Soil Cleanup Level
- Aspect Consulting Sampling Results**
- Above Freshwater Sediment Cleanup Objectives
 - Below MTCA Method A Unrestricted Soil Cleanup Level and Below Marine Sediment Cleanup Objectives



Site and Exploration Plan

Subsurface Investigation Summary Report
Little Squalicum Estuary
Whatcom County, Washington

	MAY-2017	BY: MAV / EAC / KES	FIGURE NO. 1
	PROJECT NO. 150409	REVISED BY: ---	

ATTACHMENT 1

Exploration Logs

Coarse-Grained Soils - More than 50% ⁽¹⁾ Retained on No. 200 Sieve		Gravels - More than 50% ⁽¹⁾ of Coarse Fraction Retained on No. 4 Sieve			GW	Well-graded gravel and gravel with sand, little to no fines
					GP	Poorly-graded gravel and gravel with sand, little to no fines
					GM	Silty gravel and silty gravel with sand
					GC	Clayey gravel and clayey gravel with sand
Sands - 50% ⁽¹⁾ or More of Coarse Fraction Passes No. 4 Sieve		≤5% Fines ⁽⁵⁾			SW	Well-graded sand and sand with gravel, little to no fines
					SP	Poorly-graded sand and sand with gravel, little to no fines
					SM	Silty sand and silty sand with gravel
					SC	Clayey sand and clayey sand with gravel
Fine-Grained Soils - 50% ⁽¹⁾ or More Passes No. 200 Sieve		Silt and Clays Liquid Limit Less than 50			ML	Silt, sandy silt, gravelly silt, silt with sand or gravel
					CL	Clay of low to medium plasticity; silty, sandy, or gravelly clay, lean clay
					OL	Organic clay or silt of low plasticity
					MH	Elastic silt, clayey silt, silt with micaceous or diatomaceous fine sand or silt
					CH	Clay of high plasticity, sandy or gravelly clay, fat clay with sand or gravel
Silt and Clays Liquid Limit 50 or More					OH	Organic clay or silt of medium to high plasticity
					PT	Peat, muck and other highly organic soils
Highly Organic Soils						

Terms Describing Relative Density and Consistency			
Coarse-Grained Soils	<u>Density</u>	<u>SPT ⁽²⁾ blows/foot</u>	<u>Test Symbols</u> FC = Fines Content GS = Grain Size MC = Moisture Content AL = Atterberg Limits C = Consolidation DD = Dry Density K = Permeability Str = Shear Strength Env = Environmental PiD = Photoionization Detector
	Very Loose	0 to 4	
	Loose	4 to 10	
	Medium Dense	10 to 30	
	Dense	30 to 50	
Fine-Grained Soils	<u>Consistency</u>	<u>SPT ⁽²⁾ blows/foot</u>	
	Very Soft	0 to 2	
	Soft	2 to 4	
	Medium Stiff	4 to 8	
	Stiff	8 to 15	
	Very Stiff	15 to 30	
	Hard	>30	

Component Definitions	
<u>Descriptive Term</u>	<u>Size Range and Sieve Number</u>
Boulders	Larger than 12"
Cobbles	3" to 12"
Gravel	3" to No. 4 (4.75 mm)
Coarse Gravel	3" to 3/4"
Fine Gravel	3/4" to No. 4 (4.75 mm)
Sand	No. 4 (4.75 mm) to No. 200 (0.075 mm)
Coarse Sand	No. 4 (4.75 mm) to No. 10 (2.00 mm)
Medium Sand	No. 10 (2.00 mm) to No. 40 (0.425 mm)
Fine Sand	No. 40 (0.425 mm) to No. 200 (0.075 mm)
Silt and Clay	Smaller than No. 200 (0.075 mm)

⁽³⁾ Estimated Percentage		Moisture Content
<u>Percentage by Weight</u>	<u>Modifier</u>	
<5	Trace	Dry - Absence of moisture, dusty, dry to the touch
5 to 15	Slightly (sandy, silty, clayey, gravelly)	Slightly Moist - Perceptible moisture
15 to 30	Sandy, silty, clayey, gravelly)	Moist - Damp but no visible water
30 to 49	Very (sandy, silty, clayey, gravelly)	Very Moist - Water visible but not free draining
		Wet - Visible free water, usually from below water table

Symbols	
	<u>Blows/6" or portion of 6"</u>
2.0" OD Split-Spoon Sampler (SPT)	<u>Sampler Type Description</u>
	Continuous Push
	Non-Standard Sampler
Bulk sample	
Grab Sample	3.0" OD Thin-Wall Tube Sampler (including Shelby tube)
	Portion not recovered

	⁽⁴⁾ Depth of groundwater	ATD = At time of drilling	BGS = below ground surface
		Static water level (date)	

⁽⁵⁾ Combined USCS symbols used for fines between 5% and 15% as estimated in General Accordance with Standard Practice for Description and Identification of Soils (ASTM D-2488)			
--	--	--	--

Classifications of soils in this report are based on visual field and/or laboratory observations, which include density/consistency, moisture condition, grain size, and plasticity estimates and should not be construed to imply field or laboratory testing unless presented herein. Visual-manual and/or laboratory classification methods of ASTM D-2487 and D-2488 were used as an identification guide for the Unified Soil Classification System.



Little Squalicum Estuary - 150409

Environmental Exploration Log

Project Address & Site Specific Location

Coordinates (Lat, Lon WGS84)

Exploration Number

640 Marine Dr., Bellingham, NE corner, estuary footprint

48.766, -122.516 (est)

AB-01

Contractor

Equipment

Sampling Method

Ground Surface (GS) Elev.

Cascade Drilling

Geoprobe 7800

Percussion hammer

NA

Operator

Exploration Method(s)

Work Start/Completion Dates

Top of Casing Elev.

Depth to Water (Below GS)

Jeremiah

Direct push

02/17/2017

NA

5' (ATD)

Depth (feet)	Elev. (feet)	Exploration Completion and Notes	Sample Type/ID	Analytical Sample Number & Lab Test(s)	Field Tests	Material Type	Description	Depth (ft)
					PID= 0 Sheen= None HC-like odor= None		Moist, brown, gravelly silty SAND (SM); organics common 0.0 - 0.5 ft, wet 1.0-2.0 ft	
			S1		PID= 0 Sheen= None HC-like odor= None			
		Borehole backfilled with bentonite chips			PID= 0 Sheen= None HC-like odor= None			
5		02/17/2017			PID= 0 Sheen= None HC-like odor= None		Wet, grey, sandy silty GRAVEL (GM); medium to coarse sand, fine and coarse gravel	5
			S2		PID= 0 Sheen= None HC-like odor= None		Wet, brown, silty SAND (SM)	
10					PID= 0 Sheen= None HC-like odor= None		Wet, gray SAND (SP); fine to medium sand, trace silt	10
			S3		PID= 0 Sheen= None HC-like odor= None		Wet, gray SILT (ML)	
					PID= 0 Sheen= None HC-like odor= None		Bottom of exploration at 13 ft. bgs.	
15					PID= 0 Sheen= None HC-like odor= None		Note: *HC = Hydrocarbons	15

Legend

- ☐ No Soil Sample Recovery
- ☐ Continuous core 1.85" ID

Water Level

Water Level ATD

See Exploration Log Key for explanation of symbols

Logged by: Mv
Approved by: Mv

Exploration Log
AB-01

Sheet 1 of 1



Little Squalicum Estuary - 150409

Environmental Exploration Log

Project Address & Site Specific Location

Coordinates (Lat,Lon WGS84)

Exploration Number

640 Marine Dr., Bellingham, stream inlet into estuary footprint

48.765, -122.517 (est)

AB-03

Contractor

Equipment

Sampling Method

Ground Surface (GS) Elev.

Cascade Drilling

Geoprobe 7800

Percussion hammer

NA

Operator

Exploration Method(s)

Work Start/Completion Dates

Top of Casing Elev.

Depth to Water (Below GS)

Jeremiah

Direct push

02/17/2017

NA

5' (ATD)

Depth (feet)	Elev. (feet)	Exploration Completion and Notes	Sample Type/ID	Analytical Sample Number & Lab Test(s)	Field Tests	Material Type	Description	Depth (ft)
					PID= 0 Sheen= None HC-like odor= None		Moist, dark brown SILT (ML); organics common	
					PID= 0 Sheen= None HC-like odor= None		Moist, grey GRAVEL (GP); coarse gravel	
					PID= 0 Sheen= None HC-like odor= None		Moist, brown, silty GRAVEL (GM); coarse gravel	
					PID= 0 Sheen= None HC-like odor= None		Moist, brown, silty SAND (SM); fine to medium sand	
5		Borehole backfilled with bentonite chips 02/17/2017	S1		PID= 0 Sheen= None HC-like odor= None		Becomes gray, wet	5
			S2		PID= 0 Sheen= None HC-like odor= None			
10			S3		PID= 0 Sheen= None HC-like odor= None			10
					PID= 0 Sheen= None HC-like odor= None			
					PID= 0 Sheen= None HC-like odor= None			
15					PID= 0 Sheen= None HC-like odor= None		Bottom of exploration at 13 ft. bgs. Note: *HC = Hydrocarbons	15

Legend

- ☐ No Soil Sample Recovery
- ☒ Continuous core 1.85" ID

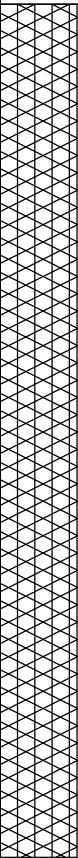
Water Level ATD

See Exploration Log Key for explanation of symbols

Logged by: Mv
Approved by: Mv

Exploration Log
AB-03

Sheet 1 of 1

		Little Squalicum Estuary - 150409 <i>Project Address & Site Specific Location</i> 640 Marine Dr., Bellingham, S edge, estuary footprint			Environmental Exploration Log <i>Coordinates (Lat, Lon WGS84)</i> 48.765, -122.516 (est)		<i>Exploration Number</i> AB-05	
		<i>Contractor</i> Cascade Drilling	<i>Equipment</i> Geoprobe 7800	<i>Sampling Method</i> Percussion hammer	<i>Ground Surface (GS) Elev.</i> NA	<i>Top of Casing Elev.</i> NA	<i>Depth to Water (Below GS)</i> 0.5' (ATD)	
<i>Operator</i> Jeremiah		<i>Exploration Method(s)</i> Direct push	<i>Work Start/Completion Dates</i> 02/17/2017					
Depth (feet)	Elev. (feet)	Exploration Completion and Notes	Sample Type/ID	Analytical Sample Number & Lab Test(s)	Field Tests	Material Type	Description	Depth (ft)
		 02/17/2017 Borehole backfilled with bentonite chips			PID= 0 Sheen= None HC*-like odor= None PID= 0 Sheen= None HC-like odor= None PID= 0 Sheen= None HC-like odor= None		Moist, dark brown, silty SAND (SM); organics common Becomes wet, gravelly	
5			S1		PID= 0 Sheen= None HC-like odor= None		Wet, gray, SAND (SW); trace silt	5
					PID= 0 Sheen= None HC-like odor= None		Wet, gray, sandy, silty GRAVEL (GM)	
			S2		PID= 0 Sheen= None HC-like odor= None PID= 0 Sheen= None HC-like odor= None			
10							Bottom of exploration at 10 ft. bgs. Note: *HC = Hydrocarbons	10
15								15

Legend

 No Soil Sample Recovery

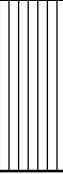
 Continuous core 1.85" ID

 Water Level ATD

See Exploration Log Key for explanation of symbols

Logged by: Mv
Approved by: Mv

Exploration Log
AB-05
Sheet 1 of 1

		Little Squalicum Estuary - 150409 <i>Project Address & Site Specific Location</i> 640 Marine Dr., Bellingham, LS Creek, upstream from culvert				Environmental Exploration Log <i>Coordinates (Lat,Lon WGS84)</i> 48.766, -122.517 (est)		<i>Exploration Number</i> AB-06	
		<i>Contractor</i> Aspect		<i>Equipment</i> Hand		<i>Sampling Method</i> Grab		<i>Ground Surface (GS) Elev.</i> NA	
<i>Operator</i> Mv		<i>Exploration Method(s)</i> Hand tools		<i>Work Start/Completion Dates</i> 02/17/2017		<i>Top of Casing Elev.</i> NA		<i>Depth to Water (Below GS)</i> 1' (ATD)	
Depth (feet)	Elev. (feet)	Exploration Completion and Notes	Sample Type/ID	Analytical Sample Number & Lab Test(s)	Field Tests	Material Type	Description		Depth (ft)
		 02/17/2017 Hand auger hole backfilled with spoils	 5'		PID= 0 HC*-like odor= None Sheen= None PID= 0 HC-like odor= None Sheen= None		Wet, dark brown SILT (ML); abundant organics, with cobbles Bottom of exploration at 2 ft. bgs. Note: *HC = Hydrocarbons		
5									5
10									10
15									15

Legend
 Grab Sample

 Water Level ATD

See Exploration Log Key for explanation of symbols

 Logged by: Mv
 Approved by: Mv

Exploration Log AB-06
 Sheet 1 of 1

		Little Squalicum Estuary - 150409 <i>Project Address & Site Specific Location</i> 640 Marine Dr., Bellingham, NW corner, estuary footprint			Environmental Exploration Log <i>Coordinates (Lat, Lon WGS84)</i> 48.765, -122.517 (est)		<i>Exploration Number</i> AB-07		
		<i>Contractor</i> Cascade Drilling		<i>Equipment</i> Geoprobe 7800	<i>Sampling Method</i> Percussion hammer		<i>Ground Surface (GS) Elev.</i> NA		
<i>Operator</i> Jeremiah		<i>Exploration Method(s)</i> Direct push		<i>Work Start/Completion Dates</i> 02/17/2017		<i>Top of Casing Elev.</i> NA		<i>Depth to Water (Below GS)</i> 2' (ATD)	

Depth (feet)	Elev. (feet)	Exploration Completion and Notes	Sample Type/ID	Analytical Sample Number & Lab Test(s)	Field Tests	Material Type	Description	Depth (ft)
		02/17/2017 Borehole backfilled with bentonite chips	S1 S2		PID= 0 Sheen= None HC-like odor= None		Moist, brown, silty SAND (SM)	
				PID= 0 Sheen= None HC-like odor= None				
				PID= 0 Sheen= None HC-like odor= None			Wet, brown, sandy, silty GRAVEL (GM)	
				PID= 0 Sheen= None HC-like odor= None				
5				PID= 0 Sheen= None HC-like odor= None			Wet, brown, slightly silty SAND (SW-SM); sand coarsens with depth	5
				PID= 0 Sheen= None HC-like odor= None			Becomes gray	
				PID= 0 Sheen= None HC-like odor= None			Wet, brown, silty GRAVEL (GM)	
				PID= 0 Sheen= None HC-like odor= None			Becomes red-brown	
10				PID= 0 Sheen= None HC-like odor= None			Bottom of exploration at 10 ft. bgs.	10
							Note: *HC = Hydrocarbons	
15								15

Legend ☐ No Soil Sample Recovery ☒ Continuous core 1.85" ID	Water Level  Water Level ATD	See Exploration Log Key for explanation of symbols Logged by: Mv Approved by: Mv	Exploration Log AB-07 Sheet 1 of 1

ASPECT STANDARD EXPLORATION LOG TEMPLATE P:\GINT\PROJECTS\SE-150409.GPJ 2017 May 01

Little Squalicum Estuary - 150409
Project Address & Site Specific Location
640 Marine Dr., Bellingham, center, estuary outlet

Environmental Exploration Log
Coordinates (Lat,Lon WGS84)
48.765, -122.517 (est)

Exploration Number
AB-08

<i>Contractor</i> Cascade Drilling		<i>Equipment</i> Geoprobe 7800		<i>Sampling Method</i> Percussion hammer		<i>Ground Surface (GS) Elev.</i> NA		AB-08
<i>Operator</i> Jeremiah		<i>Exploration Method(s)</i> Direct push		<i>Work Start/Completion Dates</i> 02/17/2017		<i>Top of Casing Elev.</i> NA		
<i>Depth (feet)</i>	<i>Elev. (feet)</i>	<i>Exploration Completion and Notes</i>	<i>Sample Type/ID</i>	<i>Analytical Sample Number & Lab Test(s)</i>	<i>Field Tests</i>	<i>Material Type</i>	<i>Description</i>	<i>Depth (ft)</i>
		02/17/2017 Borehole backfilled with bentonite chips	S1		PID= 0 Sheen= None HC-like odor= None		Moist, dark brown SILT (ML); trace sand, abundant organics Moist, brown, gravelly, silty SAND (SM) Becomes wet	
5			S2		PID= 0 Sheen= None HC-like odor= None		Wet, gray, SAND (SW) Wet, brown, silty GRAVEL (GM)	5
10			S3		PID= 0 Sheen= None HC-like odor= None		Wet, gray SILT (ML) Becomes sandy, rapid dilatency	10
15					PID= 0 Sheen= None HC-like odor= None		Bottom of exploration at 13 ft. bgs. Note: *HC = Hydrocarbons	15

Legend

No Soil Sample Recovery

Continuous core 1.85" ID

Water Level

Water Level ATD

See Exploration Log Key for explanation of symbols

Logged by: Mv
Approved by: Mv

Exploration Log AB-08
Sheet 1 of 1

ASPECT STANDARD EXPLORATION LOG TEMPLATE P:\GINT\PROJECTS\SE-150409.GPJ 2017 May 01

Aspect CONSULTING		Little Squalicum Estuary - 150409			Environmental Exploration Log					
Contractor		Equipment			Sampling Method		Coordinates (Lat, Lon WGS84)		Exploration Number	
Cascade Drilling		Geoprobe 7800			Percussion hammer		48.765, -122.516 (est)		AB-09	
Operator		Exploration Method(s)			Work Start/Completion Dates		Ground Surface (GS) Elev.		Top of Casing Elev.	
Jeremiah		Direct push			02/17/2017		NA		2.5' (ATD)	
Depth (feet)	Elev. (feet)	Exploration Completion and Notes	Sample Type/ID	Analytical Sample Number & Lab Test(s)	Field Tests	Material Type	Description	Depth (ft)		
					PID= 0 Sheen= None HC-like odor= None		Moist, dark brown, sandy SILT (ML); abundant organics			
					PID= 0 Sheen= None HC-like odor= None					
		02/17/2017	S1		PID= 0 Sheen= None HC-like odor= None		Wet, gray and brown, silty GRAVEL (GM)			
		Borehole backfilled with bentonite chips			PID= 0 Sheen= None HC-like odor= None					
5					PID= 0 Sheen= None HC-like odor= None		Wet, gray and brown silty SAND (SM)	5		
			S2		PID= 0 Sheen= None HC-like odor= None		Wet, gray, SAND (SW)			
					PID= 0 Sheen= None HC-like odor= None		Wet, brown silty GRAVEL (GM)			
10					PID= 0 Sheen= None HC-like odor= None		Bottom of exploration at 10 ft. bgs. Note: *HC = Hydrocarbons	10		
15								15		

Legend

No Soil Sample Recovery

Continuous core 1.85" ID

Water Level

Water Level ATD

See Exploration Log Key for explanation of symbols

Logged by: Mv

Approved by: Mv

Exploration Log AB-09

Sheet 1 of 1



Little Squalicum Estuary - 150409

Environmental Exploration Log

Project Address & Site Specific Location

Coordinates (Lat, Lon WGS84)

Exploration Number

640 Marine Dr., Bellingham, center of estuary footprint

48.765, -122.517 (est)

AB-10

Contractor

Equipment

Sampling Method

Ground Surface (GS) Elev.

Cascade Drilling

Geoprobe 7800

Percussion hammer

NA

Operator

Exploration Method(s)

Work Start/Completion Dates

Top of Casing Elev.

Depth to Water (Below GS)

Jeremiah

Direct push

02/17/2017

NA

2.5' (Static)

Depth (feet)	Elev. (feet)	Exploration Completion and Notes	Sample Type/ID	Analytical Sample Number & Lab Test(s)	Field Tests	Material Type	Description	Depth (ft)
					PID= 0 Sheen= None HC-like odor= None		Moist, dark brown SILT (ML); organics common	
					PID= 0 Sheen= None HC-like odor= None		Moist, gray GRAVEL (GW)	
					PID= 0 Sheen= None HC-like odor= None		Moist, brown, silty GRAVEL (GM)	
		02/17/2017	S1		PID= 0 Sheen= None HC-like odor= None			
		Borehole backfilled with bentonite chips			PID= 0 Sheen= None HC-like odor= None			
5		02/17/2017			PID= 0 Sheen= None HC-like odor= None		Becomes wet	5
			S2		PID= 0 Sheen= None HC-like odor= None			
					PID= 0 Sheen= None HC-like odor= None			
10					PID= 0 Sheen= None HC-like odor= None		Becomes sandy	10
			S3		PID= 0 Sheen= None HC-like odor= None			
					PID= 0 Sheen= None HC-like odor= None			
					PID= 0 Sheen= None HC-like odor= None			
					PID= 0 Sheen= None HC-like odor= None		Wet, gray, SAND (SP); fine to medium sand	
15					PID= 0 Sheen= None HC-like odor= None			15
			S4		PID= 0 Sheen= None HC-like odor= None			
					PID= 0 Sheen= None HC-like odor= None			
					PID= 0 Sheen= None HC-like odor= None		Bottom of exploration at 17 ft. bgs.	
					PID= 0 Sheen= None HC-like odor= None		Note: *HC = Hydrocarbons	

Legend

- No Soil Sample Recovery
- Continuous core 1.85" ID

Water Level

- Static Water Level
- Water Level ATD

See Exploration Log Key for explanation of symbols

Logged by: Mv
Approved by: Mv

Exploration Log
AB-10

Sheet 1 of 1

ATTACHMENT 2

Laboratory Analytical Report



Burlington, WA	Corporate Laboratory (a)	1620 S Walnut St.	Burlington, WA 98233	800.755.9295 • 360.757.1400
Bellingham, WA	Microbiology (b)	805 Orchard Dr Ste 4	Bellingham, WA 98225	360.715.1212
Portland, OR	Microbiology/Chemistry (c)	9150 SW Pioneer Ct Ste W	Wilsonville, OR 97070	503.682.7802
Corvallis, OR	Microbiology (d)	540 SW Third Street	Corvallis, OR 97333	541.753.4946

June 28, 2017

Page 1 of 1

Matthew Von Der Ahe
Aspect Consulting, LLC
401 2nd Ave S Suite 201
Seattle, WA 98104

RE: 17-03594 - LSE

Dear Matthew Von Der Ahe,

Your project: LSE, was received on Tuesday February 21, 2017.

All samples were analyzed within the accepted holding times and were appropriately preserved and analyzed according to approved analytical protocols, unless noted in the data or QC reports. The quality control data was within laboratory acceptance limits, unless specified in the data or QC reports.

If you have questions phone us at 800 755-9295.

Respectfully

Bryce Jensen
Chief Inorganic Chemist

Enclosures: Data Report
QC Reports
Chain of Custody



Burlington, WA	Corporate Laboratory (a)	1620 S Walnut St	Burlington, WA 98233	800.755.9295 • 360.757.1400
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Corvallis, OR	Microbiology (d)	540 SW Third Street	Corvallis, OR 97333	541.753.4946

June 28, 2017

Page 1 of 2

Case Narrative

Reference: **17-03594**

Project Notes

	Analytical Method	Notes	Created by
Project Note	NWTPH-Dx	NWTPH-DX Samples for project 17-03594 were treated with acid/silica gel cleanup prior to analysis.	HY

Lab Sample ID Sample Information

8518 **AB-01-10-13 - AB-01-10-13**

Analytical Method	Notes	Created by
8270D	This surrogate has greater variability in recovery for solid samples. The light phenols; phenol and methyl phenols if detected would be biased low. There were no trace detections so the compounds were not qualified.	CO

Lab Sample ID Sample Information

8527 **AB-06-0-2 - AB-06-0-2**

Analytical Method	Notes	Created by
8270D	Detected in the analysis is Pentachlorophenol at 1.8 mg/Kg. The sample was re-reported on 4/27/2017 to include Total PAH and the units were changed to ug/Kg on the sample report. co 4/27/2017	CO

Lab Sample ID Sample Information

8530 **AB-08-5-7 - AB-08-5-7**

Analytical Method	Notes	Created by
8270D	The reporting limit for the compound was increased due to a cross-contamination with a sample extracted within the batch (not from this project) that had a significant amount of this compound. A QC matrix spike, of this sample, for PCB was also extracted with this batch. This extract was analyzed for the compound and was not detected and confirmed the contamination. The 8270D and 8082 are extracted with the same extraction method.	CO

Case Narrative

Reference: 17-03594



8270D

The reporting limit for the compound was increased due to a cross-contamination with a sample extracted within the batch (not from this project) that had a significant amount of this compound. A QC matrix spike, of this sample, for PCB was also extracted with this batch. The 8270D and 8082 are extracted with the same extraction method. This extract was analyzed for the compound and was not detected and confirmed the contamination.

Page 2 of 2

CO



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Bellingham, WA *Microbiology (b)*
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Bend, OR *Microbiology (e)*
20332 Empire Blvd Ste 4 - Bend, OR 97701 - 541.639.8425

Page 1 of 3

Data Report

Client Name: Aspect Consulting, LLC
401 2nd Ave S Suite 201
Seattle, WA 98104

Reference Number: **17-03594**
Project: LSE

Report Date: 3/21/17

Date Received: 2/21/17

Approved by: anp,bj,fn

Authorized by:

Bryce Jensen
Chief Inorganic Chemist

Sample Description: AB-01-5-8										Sample Date: 2/17/17 12:00 pm			
Lab Number: 8517		Sample Comment:								Collected By: MV			
CAS ID#	Parameter	Result	PQL	MDL	Units	DF	Method	Lab	Analyzed	Analyst	Batch	Comment	

E-10195	TOTAL ORGANIC CARBON	4900		0.5	mg/kg	1.0	9060		3/6/17	MKW	SPEC9060_170306		
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Sample Description: AB-01-10-13										Sample Date: 2/17/17 12:05 pm			
Lab Number: 8518		Sample Comment:								Collected By: MV			
CAS ID#	Parameter	Result	PQL	MDL	Units	DF	Method	Lab	Analyzed	Analyst	Batch	Comment	

E-10195	TOTAL ORGANIC CARBON	16000		0.5	mg/kg	1.0	9060		3/6/17	MKW	SPEC9060_170306		
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Sample Description: AB-02-5-8										Sample Date: 2/17/17 1:35 pm			
Lab Number: 8519		Sample Comment:								Collected By: MV			
CAS ID#	Parameter	Result	PQL	MDL	Units	DF	Method	Lab	Analyzed	Analyst	Batch	Comment	

E-10195	TOTAL ORGANIC CARBON	7000		0.5	mg/kg	1.0	9060		3/6/17	MKW	SPEC9060_170306		
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Sample Description: AB-02-10-12										Sample Date: 2/17/17 1:40 pm			
Lab Number: 8520		Sample Comment:								Collected By: MV			
CAS ID#	Parameter	Result	PQL	MDL	Units	DF	Method	Lab	Analyzed	Analyst	Batch	Comment	

E-10195	TOTAL ORGANIC CARBON	3800		0.5	mg/kg	1.0	9060		3/6/17	MKW	SPEC9060_170306		
---------	----------------------	------	--	-----	-------	-----	------	--	--------	-----	-----------------	--	--

Sample Description: AB-03-5-7										Sample Date: 2/17/17 11:05 am			
Lab Number: 8521		Sample Comment:								Collected By: MV			
CAS ID#	Parameter	Result	PQL	MDL	Units	DF	Method	Lab	Analyzed	Analyst	Batch	Comment	

E-10195	TOTAL ORGANIC CARBON	5100		0.5	mg/kg	1.0	9060		3/6/17	MKW	SPEC9060_170306		
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Sample Description: AB-03-10-13										Sample Date: 2/17/17 11:10 am			
Lab Number: 8522		Sample Comment:								Collected By: MV			
CAS ID#	Parameter	Result	PQL	MDL	Units	DF	Method	Lab	Analyzed	Analyst	Batch	Comment	

Notes:

ND = Not detected above the listed practical quantitation limit (PQL) or not above the Method Detection Limit (MDL), if requested.
PQL = Practical Quantitation Limit is the lowest level that can be achieved within specified limits of precision and accuracy during routine laboratory operating conditions.
D.F. = Dilution Factor

If you have any questions concerning this report contact us at the above phone number.

Form: cRslt_2.rpt

Data Report

E-10195 **TOTAL ORGANIC CARBON** 4000 0.5 mg/kg 1.0 9060 3/6/17 MKW SPEC9060_170306

Sample Description: AB-04-1-4									Sample Date: 2/17/17 2:00 pm			
Lab Number: 8523			Sample Comment:						Collected By: MV			
CAS ID#	Parameter	Result	PQL	MDL	Units	DF	Method	Lab	Analyzed	Analyst	Batch	Comment

E-10195 **TOTAL ORGANIC CARBON** 6200 0.5 mg/kg 1.0 9060 3/6/17 MKW SPEC9060_170306

Sample Description: AB-04-5-9									Sample Date: 2/17/17 2:05 pm			
Lab Number: 8524			Sample Comment:						Collected By: MV			
CAS ID#	Parameter	Result	PQL	MDL	Units	DF	Method	Lab	Analyzed	Analyst	Batch	Comment

E-10195 **TOTAL ORGANIC CARBON** 4900 0.5 mg/kg 1.0 9060 3/6/17 MKW SPEC9060_170306

Sample Description: AB-05-1-3									Sample Date: 2/17/17 2:20 pm			
Lab Number: 8525			Sample Comment:						Collected By: MV			
CAS ID#	Parameter	Result	PQL	MDL	Units	DF	Method	Lab	Analyzed	Analyst	Batch	Comment

E-10195 **TOTAL ORGANIC CARBON** 2700 0.5 mg/kg 1.0 9060 3/6/17 MKW SPEC9060_170306

Sample Description: AB-05-6-8									Sample Date: 2/17/17 2:25 pm			
Lab Number: 8526			Sample Comment:						Collected By: MV			
CAS ID#	Parameter	Result	PQL	MDL	Units	DF	Method	Lab	Analyzed	Analyst	Batch	Comment

E-10195 **TOTAL ORGANIC CARBON** 3100 0.5 mg/kg 1.0 9060 3/6/17 MKW SPEC9060_170306

Sample Description: AB-06-0-2									Sample Date: 2/17/17 4:30 pm			
Lab Number: 8527			Sample Comment:						Collected By: MV			
CAS ID#	Parameter	Result	PQL	MDL	Units	DF	Method	Lab	Analyzed	Analyst	Batch	Comment

7439-97-6	MERCURY	0.1312	0.0083		mg/Kg	1.0	7471A	a	2/24/17	RHF	7471A_170224	
18496-25-8	HYDROGEN SULFIDE	ND	0.79		mg/Kg	1.0	Plumb (1981)	a	3/20/17	RHF	H2S_170320	5.03g Distilled to 50mL
7440-38-2	ARSENIC	5.89	1.00		mg/Kg	1.0	6010B/3051	a	3/1/17	ANP	6010B_170228a	
7440-43-9	CADMIUM	ND	1.00		mg/Kg	1.0	6010B/3051	a	3/1/17	ANP	6010B_170228a	
7440-47-3	CHROMIUM	44.1	1.00		mg/Kg	1.0	6010B/3051	a	3/1/17	ANP	6010B_170228A	
7440-50-8	COPPER	378	1.00		mg/Kg	1.0	6010B/3051	a	3/1/17	ANP	6010B_170228a	
7439-92-1	LEAD	69.3	1.00		mg/Kg	1.0	6010B/3051	a	3/1/17	ANP	6010B_170228a	
7440-02-0	NICKEL	33.5	1.00		mg/Kg	1.0	6010B/3051	a	3/1/17	ANP	6010B_170228a	
7782-49-2	SELENIUM	2.56	1.00		mg/Kg	1.0	6010B/3051	a	3/1/17	ANP	6010B_170228a	
7440-22-4	SILVER	ND	1.00		mg/Kg	1.0	6010B/3051	a	3/1/17	ANP	6010B_170228a	
7440-66-6	ZINC	162	1.00		mg/Kg	1.0	6010B/3051	a	3/1/17	ANP	6010B_170228a	

Sample Description: AB-07-0-3									Sample Date: 2/17/17 11:25 am			
Lab Number: 8528			Sample Comment:						Collected By: MV			
CAS ID#	Parameter	Result	PQL	MDL	Units	DF	Method	Lab	Analyzed	Analyst	Batch	Comment

E-10195 **TOTAL ORGANIC CARBON** 13000 0.5 mg/kg 1.0 9060 3/6/17 MKW SPEC9060_170306

Notes:

ND = Not detected above the listed practical quantitation limit (PQL) or not above the Method Detection Limit (MDL), if requested.
PQL = Practical Quantitation Limit is the lowest level that can be achieved within specified limits of precision and accuracy during routine laboratory operating conditions.
D.F. = Dilution Factor

Data Report

Sample Description: AB-07-9-10 Lab Number: 8529 Sample Comment:										Sample Date: 2/17/17 11:30 am Collected By: MV			
CAS ID#	Parameter	Result	PQL	MDL	Units	DF	Method	Lab	Analyzed	Analyst	Batch	Comment	
E-10195	TOTAL ORGANIC CARBON	5600		0.5	mg/kg	1.0	9060		3/6/17	MKW	SPEC9060_170306		

Sample Description: AB-08-10-13 Lab Number: 8531 Sample Comment:										Sample Date: 2/17/17 12:15 pm Collected By: MV			
CAS ID#	Parameter	Result	PQL	MDL	Units	DF	Method	Lab	Analyzed	Analyst	Batch	Comment	
E-10195	TOTAL ORGANIC CARBON	5000		0.5	mg/kg	1.0	9060		3/6/17	MKW	SPEC9060_170306		

Sample Description: AB-09-0-3 Lab Number: 8532 Sample Comment:										Sample Date: 2/17/17 12:40 pm Collected By: MV			
CAS ID#	Parameter	Result	PQL	MDL	Units	DF	Method	Lab	Analyzed	Analyst	Batch	Comment	
E-10195	TOTAL ORGANIC CARBON	86000		0.5	mg/kg	1.0	9060		3/6/17	MKW	SPEC9060_170306		

Sample Description: AB-09-8-9 Lab Number: 8533 Sample Comment:										Sample Date: 2/17/17 12:45 pm Collected By: MV			
CAS ID#	Parameter	Result	PQL	MDL	Units	DF	Method	Lab	Analyzed	Analyst	Batch	Comment	
E-10195	TOTAL ORGANIC CARBON	5800		0.5	mg/kg	1.0	9060		3/6/17	MKW	SPEC9060_170306		

Sample Description: AB-10-5-10 Lab Number: 8534 Sample Comment:										Sample Date: 2/17/17 9:35 am Collected By: MV			
CAS ID#	Parameter	Result	PQL	MDL	Units	DF	Method	Lab	Analyzed	Analyst	Batch	Comment	
E-10195	TOTAL ORGANIC CARBON	3200		0.5	mg/kg	1.0	9060		3/6/17	MKW	SPEC9060_170306		

Sample Description: AB-10-10-13 Lab Number: 8535 Sample Comment:										Sample Date: 2/17/17 9:40 am Collected By: MV			
CAS ID#	Parameter	Result	PQL	MDL	Units	DF	Method	Lab	Analyzed	Analyst	Batch	Comment	
E-10195	TOTAL ORGANIC CARBON	3100		0.5	mg/kg	1.0	9060		3/6/17	MKW	SPEC9060_170306		

Sample Description: AB-10-15-17 Lab Number: 8536 Sample Comment:										Sample Date: 2/17/17 9:45 am Collected By: MV			
CAS ID#	Parameter	Result	PQL	MDL	Units	DF	Method	Lab	Analyzed	Analyst	Batch	Comment	
E-10195	TOTAL ORGANIC CARBON	3800		0.5	mg/kg	1.0	9060		3/6/17	MKW	SPEC9060_170306		

Notes:

ND = Not detected above the listed practical quantitation limit (PQL) or not above the Method Detection Limit (MDL), if requested.
PQL = Practical Quantitation Limit is the lowest level that can be achieved within specified limits of precision and accuracy during routine laboratory operating conditions.
D.F. = Dilution Factor



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540 SW Third Street - Corvallis, OR 97333 - 541.753.4946
Bend, OR *Microbiology (e)*
20332 Empire Blvd Ste 4 - Bend, OR 97701 - 541.639.8425

WSDOE Lab C567

DATA REPORT

Page 1 of 1

Client Name: Aspect Consulting, LLC
401 2nd Ave S Suite 201
Seattle, WA 98104

Reference Number: **17-03594**
Project: LSE

Lab Number: 08517
Field ID: AB-01-5-8
Sample Description: AB-01-5-8
Matrix: Soil
Sample Date: 2/17/17
Extraction Date: 2/21/17
Extraction Method: 3540C

Report Date: 6/28/17
Date Analyzed: 2/27/17
Analyst: CO
Analytical Method: 8270D
Batch: PAH_S170221
Approved By: nml,pdm

Authorized by:


Bryce Jensen
Chief Inorganic Chemist

CAS	Compound	RESULT	Flag	UNITS	Lab QL	Permit QL	MDL	D.F.	Lab	COMMENT
	Total PAHs									
	TOTAL PAH	ND		mg/Kg				1.10	a	
91-57-6	2-METHYLNAPHTHALENE	ND		mg/Kg	0.06	0.05		1.10	a	
208-96-8	ACENAPHTHYLENE	ND		mg/Kg	0.06	0.05		1.10	a	
83-32-9	ACENAPTHENE	ND		mg/Kg	0.06	0.05		1.10	a	
120-12-7	ANTHRACENE	ND		mg/Kg	0.06	0.05		1.10	a	
56-55-3	BENZ[A]ANTHRACENE	ND		mg/Kg	0.06	0.05		1.10	a	cPAH
50-32-8	BENZO[A]PYRENE	ND		mg/Kg	0.06	0.05		1.10	a	cPAH
205-99-2	BENZO[B/J]FLUORANTHENE	ND		mg/Kg	0.06	0.05		1.10	a	cPAH
191-24-2	BENZO[G,H,I]PERYLENE	ND		mg/Kg	0.06	0.05		1.10	a	
207-08-9	BENZO[K]FLUORANTHENE	ND		mg/Kg	0.06	0.05		1.10	a	cPAH
218-01-9	CHRYSENE	ND		mg/Kg	0.06	0.05		1.10	a	cPAH
53-70-3	DIBENZ[A,H]ANTHRACENE	ND		mg/Kg	0.06	0.05		1.10	a	cPAH
206-44-0	FLUORANTHENE	ND		mg/Kg	0.06	0.05		1.10	a	
86-73-7	FLUORENE	ND		mg/Kg	0.06	0.05		1.10	a	
193-39-5	INDENO[1,2,3,C,D]PYRENE	ND		mg/Kg	0.06	0.05		1.10	a	cPAH
91-20-3	NAPHTHALENE	ND		mg/Kg	0.06	0.05		1.10	a	
85-01-8	PHENANTHRENE	ND		mg/Kg	0.06	0.05		1.10	a	
129-00-0	PYRENE	ND		mg/Kg	0.06	0.05		1.10	a	

Notes:

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Bend, OR *Microbiology (e)*
20332 Empire Blvd Ste 4 - Bend, OR 97701 - 541.639.8425

WSDOE Lab C567

DATA REPORT

Page 1 of 1

Client Name: Aspect Consulting, LLC
401 2nd Ave S Suite 201
Seattle, WA 98104

Reference Number: **17-03594**
Project: LSE

Lab Number: 08518
Field ID: AB-01-10-13
Sample Description: AB-01-10-13
Matrix: Soil
Sample Date: 2/17/17
Extraction Date: 2/17/17
Extraction Method: 3540C

Report Date: 6/28/17
Date Analyzed: 2/27/17
Analyst: CO
Analytical Method: 8270D
Batch: PAH_S170221
Approved By: nml,pdm

Authorized by:


Bryce Jensen
Chief Inorganic Chemist

CAS	Compound	RESULT	Flag	UNITS	Lab QL	Permit QL	MDL	D.F.	Lab	COMMENT
	Total PAHs									
	TOTAL PAH	ND		mg/Kg				1.20	a	
91-57-6	2-METHYLNAPHTHALENE	ND		mg/Kg	0.06	0.05		1.20	a	
208-96-8	ACENAPHTHYLENE	ND		mg/Kg	0.06	0.05		1.20	a	
83-32-9	ACENAPTHENE	ND		mg/Kg	0.06	0.05		1.20	a	
120-12-7	ANTHRACENE	ND		mg/Kg	0.06	0.05		1.20	a	
56-55-3	BENZ[A]ANTHRACENE	ND		mg/Kg	0.06	0.05		1.20	a	cPAH
50-32-8	BENZO[A]PYRENE	ND		mg/Kg	0.06	0.05		1.20	a	cPAH
205-99-2	BENZO[B/J]FLUORANTHENE	ND		mg/Kg	0.06	0.05		1.20	a	cPAH
191-24-2	BENZO[G,H,I]PERYLENE	ND		mg/Kg	0.06	0.05		1.20	a	
207-08-9	BENZO[K]FLUORANTHENE	ND		mg/Kg	0.06	0.05		1.20	a	cPAH
218-01-9	CHRYSENE	ND		mg/Kg	0.06	0.05		1.20	a	cPAH
53-70-3	DIBENZ[A,H]ANTHRACENE	ND		mg/Kg	0.06	0.05		1.20	a	cPAH
206-44-0	FLUORANTHENE	ND		mg/Kg	0.06	0.05		1.20	a	
86-73-7	FLUORENE	ND		mg/Kg	0.06	0.05		1.20	a	
193-39-5	INDENO[1,2,3,C,D]PYRENE	ND		mg/Kg	0.06	0.05		1.20	a	cPAH
91-20-3	NAPHTHALENE	ND		mg/Kg	0.06	0.05		1.20	a	
85-01-8	PHENANTHRENE	ND		mg/Kg	0.06	0.05		1.20	a	
129-00-0	PYRENE	ND		mg/Kg	0.06	0.05		1.20	a	

Notes:

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DATA REPORT

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Client Name: Aspect Consulting, LLC
401 2nd Ave S Suite 201
Seattle, WA 98104

Reference Number: **17-03594**
Project: LSE

Lab Number: 08519
Field ID: AB-02-5-8
Sample Description: AB-02-5-8
Matrix: Soil
Sample Date: 2/17/17
Extraction Date: 2/21/17
Extraction Method: 3540C

Report Date: 6/28/17
Date Analyzed: 2/27/17
Analyst: CO
Analytical Method: 8270D
Batch: PAH_S170221
Approved By: nml,pdm

Authorized by:


Bryce Jensen
Chief Inorganic Chemist

CAS	Compound	RESULT	Flag	UNITS	Lab QL	Permit QL	MDL	D.F.	Lab	COMMENT
	Total PAHs									
	TOTAL PAH	ND		mg/Kg				1.20	a	
91-57-6	2-METHYLNAPHTHALENE	ND		mg/Kg	0.06	0.05		1.20	a	
208-96-8	ACENAPHTHYLENE	ND		mg/Kg	0.06	0.05		1.20	a	
83-32-9	ACENAPTHENE	ND		mg/Kg	0.06	0.05		1.20	a	
120-12-7	ANTHRACENE	ND		mg/Kg	0.06	0.05		1.20	a	
56-55-3	BENZ[A]ANTHRACENE	ND		mg/Kg	0.06	0.05		1.20	a	cPAH
50-32-8	BENZO[A]PYRENE	ND		mg/Kg	0.06	0.05		1.20	a	cPAH
205-99-2	BENZO[B/J]FLUORANTHENE	ND		mg/Kg	0.06	0.05		1.20	a	cPAH
191-24-2	BENZO[G,H,I]PERYLENE	ND		mg/Kg	0.06	0.05		1.20	a	
207-08-9	BENZO[K]FLUORANTHENE	ND		mg/Kg	0.06	0.05		1.20	a	cPAH
218-01-9	CHRYSENE	ND		mg/Kg	0.06	0.05		1.20	a	cPAH
53-70-3	DIBENZ[A,H]ANTHRACENE	ND		mg/Kg	0.06	0.05		1.20	a	cPAH
206-44-0	FLUORANTHENE	ND		mg/Kg	0.06	0.05		1.20	a	
86-73-7	FLUORENE	ND		mg/Kg	0.06	0.05		1.20	a	
193-39-5	INDENO[1,2,3,C,D]PYRENE	ND		mg/Kg	0.06	0.05		1.20	a	cPAH
91-20-3	NAPHTHALENE	ND		mg/Kg	0.06	0.05		1.20	a	
85-01-8	PHENANTHRENE	ND		mg/Kg	0.06	0.05		1.20	a	
129-00-0	PYRENE	ND		mg/Kg	0.06	0.05		1.20	a	

Notes:

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DATA REPORT

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Client Name: Aspect Consulting, LLC
401 2nd Ave S Suite 201
Seattle, WA 98104

Reference Number: **17-03594**
Project: LSE

Lab Number: 08520
Field ID: AB-02-10-12
Sample Description: AB-02-10-12
Matrix: Soil
Sample Date: 2/17/17
Extraction Date: 2/21/17
Extraction Method: 3540C

Report Date: 6/28/17
Date Analyzed: 2/27/17
Analyst: CO
Analytical Method: 8270D
Batch: PAH_S170221
Approved By: nml,pdm

Authorized by:


Bryce Jensen
Chief Inorganic Chemist

CAS	Compound	RESULT	Flag	UNITS	Lab QL	Permit QL	MDL	D.F.	Lab	COMMENT
	Total PAHs									
	TOTAL PAH	ND		mg/Kg				1.10	a	
91-57-6	2-METHYLNAPHTHALENE	ND		mg/Kg	0.06	0.05		1.10	a	
208-96-8	ACENAPHTHYLENE	ND		mg/Kg	0.06	0.05		1.10	a	
83-32-9	ACENAPTHENE	ND		mg/Kg	0.06	0.05		1.10	a	
120-12-7	ANTHRACENE	ND		mg/Kg	0.06	0.05		1.10	a	
56-55-3	BENZ[A]ANTHRACENE	ND		mg/Kg	0.06	0.05		1.10	a	cPAH
50-32-8	BENZO[A]PYRENE	ND		mg/Kg	0.06	0.05		1.10	a	cPAH
205-99-2	BENZO[B/J]FLUORANTHENE	ND		mg/Kg	0.06	0.05		1.10	a	cPAH
191-24-2	BENZO[G,H,I]PERYLENE	ND		mg/Kg	0.06	0.05		1.10	a	
207-08-9	BENZO[K]FLUORANTHENE	ND		mg/Kg	0.06	0.05		1.10	a	cPAH
218-01-9	CHRYSENE	ND		mg/Kg	0.06	0.05		1.10	a	cPAH
53-70-3	DIBENZ[A,H]ANTHRACENE	ND		mg/Kg	0.06	0.05		1.10	a	cPAH
206-44-0	FLUORANTHENE	ND		mg/Kg	0.06	0.05		1.10	a	
86-73-7	FLUORENE	ND		mg/Kg	0.06	0.05		1.10	a	
193-39-5	INDENO[1,2,3,C,D]PYRENE	ND		mg/Kg	0.06	0.05		1.10	a	cPAH
91-20-3	NAPHTHALENE	ND		mg/Kg	0.06	0.05		1.10	a	
85-01-8	PHENANTHRENE	ND		mg/Kg	0.06	0.05		1.10	a	
129-00-0	PYRENE	ND		mg/Kg	0.06	0.05		1.10	a	

Notes:

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WSDOE Lab C567

DATA REPORT

Page 1 of 1

Client Name: Aspect Consulting, LLC
401 2nd Ave S Suite 201
Seattle, WA 98104

Reference Number: **17-03594**
Project: LSE

Lab Number: 08521
Field ID: AB-03-5-7
Sample Description: AB-03-5-7
Matrix: Soil
Sample Date: 2/17/17
Extraction Date: 2/21/17
Extraction Method: 3540C

Report Date: 6/28/17
Date Analyzed: 2/27/17
Analyst: CO
Analytical Method: 8270D
Batch: PAH_S170221
Approved By: nml,pdm

Authorized by:


Bryce Jensen
Chief Inorganic Chemist

CAS	Compound	RESULT	Flag	UNITS	Lab QL	Permit QL	MDL	D.F.	Lab	COMMENT
	Total PAHs									
	TOTAL PAH	ND		mg/Kg				1.20	a	
91-57-6	2-METHYLNAPHTHALENE	ND		mg/Kg	0.06	0.05		1.20	a	
208-96-8	ACENAPHTHYLENE	ND		mg/Kg	0.06	0.05		1.20	a	
83-32-9	ACENAPTHENE	ND		mg/Kg	0.06	0.05		1.20	a	
120-12-7	ANTHRACENE	ND		mg/Kg	0.06	0.05		1.20	a	
56-55-3	BENZ[A]ANTHRACENE	ND		mg/Kg	0.06	0.05		1.20	a	cPAH
50-32-8	BENZO[A]PYRENE	ND		mg/Kg	0.06	0.05		1.20	a	cPAH
205-99-2	BENZO[B/J]FLUORANTHENE	ND		mg/Kg	0.06	0.05		1.20	a	cPAH
191-24-2	BENZO[G,H,I]PERYLENE	ND		mg/Kg	0.06	0.05		1.20	a	
207-08-9	BENZO[K]FLUORANTHENE	ND		mg/Kg	0.06	0.05		1.20	a	cPAH
218-01-9	CHRYSENE	ND		mg/Kg	0.06	0.05		1.20	a	cPAH
53-70-3	DIBENZ[A,H]ANTHRACENE	ND		mg/Kg	0.06	0.05		1.20	a	cPAH
206-44-0	FLUORANTHENE	ND		mg/Kg	0.06	0.05		1.20	a	
86-73-7	FLUORENE	ND		mg/Kg	0.06	0.05		1.20	a	
193-39-5	INDENO[1,2,3,C,D]PYRENE	ND		mg/Kg	0.06	0.05		1.20	a	cPAH
91-20-3	NAPHTHALENE	ND		mg/Kg	0.06	0.05		1.20	a	
85-01-8	PHENANTHRENE	ND		mg/Kg	0.06	0.05		1.20	a	
129-00-0	PYRENE	ND		mg/Kg	0.06	0.05		1.20	a	

Notes:

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DATA REPORT

Page 1 of 1

Client Name: Aspect Consulting, LLC
401 2nd Ave S Suite 201
Seattle, WA 98104

Reference Number: **17-03594**
Project: LSE

Lab Number: 08522
Field ID: AB-03-10-13
Sample Description: AB-03-10-13
Matrix: Soil
Sample Date: 2/17/17
Extraction Date: 2/21/17
Extraction Method: 3540C

Report Date: 6/28/17
Date Analyzed: 2/27/17
Analyst: CO
Analytical Method: 8270D
Batch: PAH_S170221
Approved By: nml,pdm

Authorized by:


Bryce Jensen
Chief Inorganic Chemist

CAS	Compound	RESULT	Flag	UNITS	Lab QL	Permit QL	MDL	D.F.	Lab	COMMENT
	Total PAHs									
	TOTAL PAH	ND		mg/Kg				1.00	a	
91-57-6	2-METHYLNAPHTHALENE	ND		mg/Kg	0.06	0.05		1.20	a	
208-96-8	ACENAPHTHYLENE	ND		mg/Kg	0.06	0.05		1.20	a	
83-32-9	ACENAPTHENE	ND		mg/Kg	0.06	0.05		1.20	a	
120-12-7	ANTHRACENE	ND		mg/Kg	0.06	0.05		1.20	a	
56-55-3	BENZ[A]ANTHRACENE	ND		mg/Kg	0.06	0.05		1.20	a	cPAH
50-32-8	BENZO[A]PYRENE	ND		mg/Kg	0.06	0.05		1.20	a	cPAH
205-99-2	BENZO[B/J]FLUORANTHENE	ND		mg/Kg	0.06	0.05		1.20	a	cPAH
191-24-2	BENZO[G,H,I]PERYLENE	ND		mg/Kg	0.06	0.05		1.20	a	
207-08-9	BENZO[K]FLUORANTHENE	ND		mg/Kg	0.06	0.05		1.20	a	cPAH
218-01-9	CHRYSENE	ND		mg/Kg	0.06	0.05		1.20	a	cPAH
53-70-3	DIBENZ[A,H]ANTHRACENE	ND		mg/Kg	0.06	0.05		1.20	a	cPAH
206-44-0	FLUORANTHENE	ND		mg/Kg	0.06	0.05		1.20	a	
86-73-7	FLUORENE	ND		mg/Kg	0.06	0.05		1.20	a	
193-39-5	INDENO[1,2,3,C,D]PYRENE	ND		mg/Kg	0.06	0.05		1.20	a	cPAH
91-20-3	NAPHTHALENE	ND		mg/Kg	0.06	0.05		1.20	a	
85-01-8	PHENANTHRENE	ND		mg/Kg	0.06	0.05		1.20	a	
129-00-0	PYRENE	ND		mg/Kg	0.06	0.05		1.20	a	

Notes:

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DATA REPORT

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Client Name: Aspect Consulting, LLC
401 2nd Ave S Suite 201
Seattle, WA 98104

Reference Number: **17-03594**
Project: LSE

Lab Number: 08523
Field ID: AB-04-1-4
Sample Description: AB-04-1-4
Matrix: Soil
Sample Date: 2/17/17
Extraction Date: 2/21/17
Extraction Method: 3540C

Report Date: 6/28/17
Date Analyzed: 2/27/17
Analyst: CO
Analytical Method: 8270D
Batch: PAH_S170221
Approved By: nml,pdm

Authorized by:


Bryce Jensen
Chief Inorganic Chemist

CAS	Compound	RESULT	Flag	UNITS	Lab QL	Permit QL	MDL	D.F.	Lab	COMMENT
	Total PAHs									
	TOTAL PAH	ND		mg/Kg				1.00	a	
91-57-6	2-METHYLNAPHTHALENE	ND		mg/Kg	0.07	0.05		1.30	a	
208-96-8	ACENAPHTHYLENE	ND		mg/Kg	0.07	0.05		1.30	a	
83-32-9	ACENAPTHENE	ND		mg/Kg	0.07	0.05		1.30	a	
120-12-7	ANTHRACENE	ND		mg/Kg	0.07	0.05		1.30	a	
56-55-3	BENZ[A]ANTHRACENE	ND		mg/Kg	0.07	0.05		1.30	a	cPAH
50-32-8	BENZO[A]PYRENE	ND		mg/Kg	0.07	0.05		1.30	a	cPAH
205-99-2	BENZO[B/J]FLUORANTHENE	ND		mg/Kg	0.07	0.05		1.30	a	cPAH
191-24-2	BENZO[G,H,I]PERYLENE	ND		mg/Kg	0.07	0.05		1.30	a	
207-08-9	BENZO[K]FLUORANTHENE	ND		mg/Kg	0.07	0.05		1.30	a	cPAH
218-01-9	CHRYSENE	ND		mg/Kg	0.07	0.05		1.30	a	cPAH
53-70-3	DIBENZ[A,H]ANTHRACENE	ND		mg/Kg	0.07	0.05		1.30	a	cPAH
206-44-0	FLUORANTHENE	ND		mg/Kg	0.07	0.05		1.30	a	
86-73-7	FLUORENE	ND		mg/Kg	0.07	0.05		1.30	a	
193-39-5	INDENO[1,2,3,C,D]PYRENE	ND		mg/Kg	0.07	0.05		1.30	a	cPAH
91-20-3	NAPHTHALENE	ND		mg/Kg	0.07	0.05		1.30	a	
85-01-8	PHENANTHRENE	ND		mg/Kg	0.07	0.05		1.30	a	
129-00-0	PYRENE	ND		mg/Kg	0.07	0.05		1.30	a	

Notes:

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D.F. - Dilution Factor.

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WSDOE Lab C567

DATA REPORT

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Client Name: Aspect Consulting, LLC
401 2nd Ave S Suite 201
Seattle, WA 98104

Reference Number: **17-03594**
Project: LSE

Lab Number: 08524
Field ID: AB-04-5-9
Sample Description: AB-04-5-9
Matrix: Soil
Sample Date: 2/17/17
Extraction Date: 2/21/17
Extraction Method: 3540C

Report Date: 6/28/17
Date Analyzed: 2/27/17
Analyst: CO
Analytical Method: 8270D
Batch: PAH_S170221
Approved By: nml,pdm

Authorized by:


Bryce Jensen
Chief Inorganic Chemist

CAS	Compound	RESULT	Flag	UNITS	Lab QL	Permit QL	MDL	D.F.	Lab	COMMENT
	Total PAHs									
	TOTAL PAH	ND		mg/Kg				1.00	a	
91-57-6	2-METHYLNAPHTHALENE	ND		mg/Kg	0.07	0.05		1.30	a	
208-96-8	ACENAPHTHYLENE	ND		mg/Kg	0.07	0.05		1.30	a	
83-32-9	ACENAPTHENE	ND		mg/Kg	0.07	0.05		1.30	a	
120-12-7	ANTHRACENE	ND		mg/Kg	0.07	0.05		1.30	a	
56-55-3	BENZ[A]ANTHRACENE	ND		mg/Kg	0.07	0.05		1.30	a	cPAH
50-32-8	BENZO[A]PYRENE	ND		mg/Kg	0.07	0.05		1.30	a	cPAH
205-99-2	BENZO[B/J]FLUORANTHENE	ND		mg/Kg	0.07	0.05		1.30	a	cPAH
191-24-2	BENZO[G,H,I]PERYLENE	ND		mg/Kg	0.07	0.05		1.30	a	
207-08-9	BENZO[K]FLUORANTHENE	ND		mg/Kg	0.07	0.05		1.30	a	cPAH
218-01-9	CHRYSENE	ND		mg/Kg	0.07	0.05		1.30	a	cPAH
53-70-3	DIBENZ[A,H]ANTHRACENE	ND		mg/Kg	0.07	0.05		1.30	a	cPAH
206-44-0	FLUORANTHENE	ND		mg/Kg	0.07	0.05		1.30	a	
86-73-7	FLUORENE	ND		mg/Kg	0.07	0.05		1.30	a	
193-39-5	INDENO[1,2,3,C,D]PYRENE	ND		mg/Kg	0.07	0.05		1.30	a	cPAH
91-20-3	NAPHTHALENE	ND		mg/Kg	0.07	0.05		1.30	a	
85-01-8	PHENANTHRENE	ND		mg/Kg	0.07	0.05		1.30	a	
129-00-0	PYRENE	ND		mg/Kg	0.07	0.05		1.30	a	

Notes:

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DATA REPORT

Page 1 of 1

Client Name: Aspect Consulting, LLC
401 2nd Ave S Suite 201
Seattle, WA 98104

Reference Number: **17-03594**
Project: LSE

Lab Number: 08525
Field ID: AB-05-1-3
Sample Description: AB-05-1-3
Matrix: Soil
Sample Date: 2/17/17
Extraction Date: 2/21/17
Extraction Method: 3540C

Report Date: 6/28/17
Date Analyzed: 2/27/17
Analyst: CO
Analytical Method: 8270D
Batch: PAH_S170221
Approved By: nml,pdm

Authorized by:


Bryce Jensen
Chief Inorganic Chemist

CAS	Compound	RESULT	Flag	UNITS	Lab QL	Permit QL	MDL	D.F.	Lab	COMMENT
	Total PAHs									
	TOTAL PAH	ND		mg/Kg				1.00	a	
91-57-6	2-METHYLNAPHTHALENE	ND		mg/Kg	0.06	0.05		1.10	a	
208-96-8	ACENAPHTHYLENE	ND		mg/Kg	0.06	0.05		1.10	a	
83-32-9	ACENAPTHENE	ND		mg/Kg	0.06	0.05		1.10	a	
120-12-7	ANTHRACENE	ND		mg/Kg	0.06	0.05		1.10	a	
56-55-3	BENZ[A]ANTHRACENE	ND		mg/Kg	0.06	0.05		1.10	a	cPAH
50-32-8	BENZO[A]PYRENE	ND		mg/Kg	0.06	0.05		1.10	a	cPAH
205-99-2	BENZO[B/J]FLUORANTHENE	ND		mg/Kg	0.06	0.05		1.10	a	cPAH
191-24-2	BENZO[G,H,I]PERYLENE	ND		mg/Kg	0.06	0.05		1.10	a	
207-08-9	BENZO[K]FLUORANTHENE	ND		mg/Kg	0.06	0.05		1.10	a	cPAH
218-01-9	CHRYSENE	ND		mg/Kg	0.06	0.05		1.10	a	cPAH
53-70-3	DIBENZ[A,H]ANTHRACENE	ND		mg/Kg	0.06	0.05		1.10	a	cPAH
206-44-0	FLUORANTHENE	ND		mg/Kg	0.06	0.05		1.10	a	
86-73-7	FLUORENE	ND		mg/Kg	0.06	0.05		1.10	a	
193-39-5	INDENO[1,2,3,C,D]PYRENE	ND		mg/Kg	0.06	0.05		1.10	a	cPAH
91-20-3	NAPHTHALENE	ND		mg/Kg	0.06	0.05		1.10	a	
85-01-8	PHENANTHRENE	ND		mg/Kg	0.06	0.05		1.10	a	
129-00-0	PYRENE	ND		mg/Kg	0.06	0.05		1.10	a	

Notes:

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DATA REPORT

Page 1 of 1

Client Name: Aspect Consulting, LLC
401 2nd Ave S Suite 201
Seattle, WA 98104

Reference Number: **17-03594**
Project: LSE

Lab Number: 08526
Field ID: AB-05-6-8
Sample Description: AB-05-6-8
Matrix: Soil
Sample Date: 2/17/17
Extraction Date: 2/21/17
Extraction Method: 3540C

Report Date: 6/28/17
Date Analyzed: 2/27/17
Analyst: CO
Analytical Method: 8270D
Batch: PAH_S170221
Approved By: nml,pdm

Authorized by:


Bryce Jensen
Chief Inorganic Chemist

CAS	Compound	RESULT	Flag	UNITS	Lab QL	Permit QL	MDL	D.F.	Lab	COMMENT
	Total PAHs									
	TOTAL PAH	ND		mg/Kg				1.00	a	
91-57-6	2-METHYLNAPHTHALENE	ND		mg/Kg	0.06	0.05		1.20	a	
208-96-8	ACENAPHTHYLENE	ND		mg/Kg	0.06	0.05		1.20	a	
83-32-9	ACENAPTHENE	ND		mg/Kg	0.06	0.05		1.20	a	
120-12-7	ANTHRACENE	ND		mg/Kg	0.06	0.05		1.20	a	
56-55-3	BENZ[A]ANTHRACENE	ND		mg/Kg	0.06	0.05		1.20	a	cPAH
50-32-8	BENZO[A]PYRENE	ND		mg/Kg	0.06	0.05		1.20	a	cPAH
205-99-2	BENZO[B/J]FLUORANTHENE	ND		mg/Kg	0.06	0.05		1.20	a	cPAH
191-24-2	BENZO[G,H,I]PERYLENE	ND		mg/Kg	0.06	0.05		1.20	a	
207-08-9	BENZO[K]FLUORANTHENE	ND		mg/Kg	0.06	0.05		1.20	a	cPAH
218-01-9	CHRYSENE	ND		mg/Kg	0.06	0.05		1.20	a	cPAH
53-70-3	DIBENZ[A,H]ANTHRACENE	ND		mg/Kg	0.06	0.05		1.20	a	cPAH
206-44-0	FLUORANTHENE	ND		mg/Kg	0.06	0.05		1.20	a	
86-73-7	FLUORENE	ND		mg/Kg	0.06	0.05		1.20	a	
193-39-5	INDENO[1,2,3,C,D]PYRENE	ND		mg/Kg	0.06	0.05		1.20	a	cPAH
91-20-3	NAPHTHALENE	ND		mg/Kg	0.06	0.05		1.20	a	
85-01-8	PHENANTHRENE	ND		mg/Kg	0.06	0.05		1.20	a	
129-00-0	PYRENE	ND		mg/Kg	0.06	0.05		1.20	a	

Notes:

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WSDOE Lab C567

DATA REPORT

Page 1 of 1

Client Name: Aspect Consulting, LLC
401 2nd Ave S Suite 201
Seattle, WA 98104

Reference Number: **17-03594**
Project: LSE

Lab Number: 08527
Field ID: AB-06-0-2
Sample Description: AB-06-0-2
Matrix: Soil
Sample Date: 2/17/17
Extraction Date: 2/21/17
Extraction Method: 3540C

Report Date: 6/28/17
Date Analyzed: 2/27/17
Analyst: CO
Analytical Method: 8270D
Batch: pah_s170221
Approved By: nml.pdm

Authorized by:


Bryce Jensen
Chief Inorganic Chemist

CAS	Compound	RESULT	Flag	UNITS	Lab QL	Permit QL	MDL	D.F.	Lab	COMMENT
	Total PAHs									
	TOTAL PAH	21220		ug/Kg				1.00	a	
90-12-0	1-METHYLNAPHTHALENE	80	J	ug/Kg	100	100		1.60	a	
91-57-6	2-METHYLNAPHTHALENE	100		ug/Kg	100	100		1.60	a	
208-96-8	ACENAPHTHYLENE	780		ug/Kg	100	100		1.60	a	
83-32-9	ACENAPHTHENE	40	J	ug/Kg	100	100		1.60	a	
120-12-7	ANTHRACENE	1040		ug/Kg	0.05	0.05		1.60	a	
56-55-3	BENZ[A]ANTHRACENE	590		ug/Kg	100	100		1.60	a	
50-32-8	BENZO[A]PYRENE	1560		ug/Kg	100	100		1.60	a	
205-99-2	BENZO[B/J]FLUORANTHENE	2210		ug/Kg	100	100		1.60	a	
191-24-2	BENZO[G,H,I]PERYLENE	4950		ug/Kg	100	100		1.60	a	
207-08-9	BENZO[K]FLUORANTHENE	780		ug/Kg	100	100		1.60	a	
218-01-9	CHRYSENE	2770		ug/Kg	100	100		1.60	a	
53-70-3	DIBENZ[A,H]ANTHRACENE	650		ug/Kg	100	100		1.60	a	
206-44-0	FLUORANTHENE	350		ug/Kg	100	100		1.60	a	
86-73-7	FLUORENE	120		ug/Kg	100	100		1.60	a	
193-39-5	INDENO[1,2,3,C,D]PYRENE	4260		ug/Kg	100	100		1.60	a	
91-20-3	NAPHTHALENE	150		ug/Kg	100	100		1.60	a	
85-01-8	PHENANTHRENE	340		ug/Kg	100	100		1.60	a	
129-00-0	PYRENE	450		ug/Kg	100	100		1.60	a	

Notes:

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DATA REPORT

Page 1 of 1

Client Name: Aspect Consulting, LLC
401 2nd Ave S Suite 201
Seattle, WA 98104

Reference Number: **17-03594**
Project: LSE

Lab Number: 08528
Field ID: AB-07-0-3
Sample Description: AB-07-0-3
Matrix: Soil
Sample Date: 2/17/17
Extraction Date: 2/21/17
Extraction Method: 3540C

Report Date: 6/28/17
Date Analyzed: 2/27/17
Analyst: CO
Analytical Method: 8270D
Batch: PAH_S170221
Approved By: nml,pdm

Authorized by:


Bryce Jensen
Chief Inorganic Chemist

CAS	Compound	RESULT	Flag	UNITS	Lab QL	Permit QL	MDL	D.F.	Lab	COMMENT
	Total PAHs									
	TOTAL PAH	ND		mg/Kg				1.00	a	
91-57-6	2-METHYLNAPHTHALENE	ND		mg/Kg	0.06	0.05		1.20	a	
208-96-8	ACENAPHTHYLENE	ND		mg/Kg	0.06	0.05		1.20	a	
83-32-9	ACENAPTHENE	ND		mg/Kg	0.06	0.05		1.20	a	
120-12-7	ANTHRACENE	ND		mg/Kg	0.06	0.05		1.20	a	
56-55-3	BENZ[A]ANTHRACENE	ND		mg/Kg	0.06	0.05		1.20	a	cPAH
50-32-8	BENZO[A]PYRENE	ND		mg/Kg	0.06	0.05		1.20	a	cPAH
205-99-2	BENZO[B/J]FLUORANTHENE	ND		mg/Kg	0.06	0.05		1.20	a	cPAH
191-24-2	BENZO[G,H,I]PERYLENE	ND		mg/Kg	0.06	0.05		1.20	a	
207-08-9	BENZO[K]FLUORANTHENE	ND		mg/Kg	0.06	0.05		1.20	a	cPAH
218-01-9	CHRYSENE	ND		mg/Kg	0.06	0.05		1.20	a	cPAH
53-70-3	DIBENZ[A,H]ANTHRACENE	ND		mg/Kg	0.06	0.05		1.20	a	cPAH
206-44-0	FLUORANTHENE	ND		mg/Kg	0.06	0.05		1.20	a	
86-73-7	FLUORENE	ND		mg/Kg	0.06	0.05		1.20	a	
193-39-5	INDENO[1,2,3,C,D]PYRENE	ND		mg/Kg	0.06	0.05		1.20	a	cPAH
91-20-3	NAPHTHALENE	ND		mg/Kg	0.06	0.05		1.20	a	
85-01-8	PHENANTHRENE	ND		mg/Kg	0.06	0.05		1.20	a	
129-00-0	PYRENE	ND		mg/Kg	0.06	0.05		1.20	a	

Notes:

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DATA REPORT

Page 1 of 1

Client Name: Aspect Consulting, LLC
401 2nd Ave S Suite 201
Seattle, WA 98104

Reference Number: **17-03594**
Project: LSE

Lab Number: 08529
Field ID: AB-07-9-10
Sample Description: AB-07-9-10
Matrix: Soil
Sample Date: 2/17/17
Extraction Date: 2/21/17
Extraction Method: 3540C

Report Date: 6/28/17
Date Analyzed: 2/27/17
Analyst: CO
Analytical Method: 8270D
Batch: PAH_S170221
Approved By: nml,pdm

Authorized by:


Bryce Jensen
Chief Inorganic Chemist

CAS	Compound	RESULT	Flag	UNITS	Lab QL	Permit QL	MDL	D.F.	Lab	COMMENT
	Total PAHs									
	TOTAL PAH	ND		mg/Kg				1.00	a	
91-57-6	2-METHYLNAPHTHALENE	ND		mg/Kg	0.06	0.05		1.20	a	
208-96-8	ACENAPHTHYLENE	ND		mg/Kg	0.06	0.05		1.20	a	
83-32-9	ACENAPHTHENE	ND		mg/Kg	0.06	0.05		1.20	a	
120-12-7	ANTHRACENE	ND		mg/Kg	0.06	0.05		1.20	a	
56-55-3	BENZ[A]ANTHRACENE	ND		mg/Kg	0.06	0.05		1.20	a	cPAH
50-32-8	BENZO[A]PYRENE	ND		mg/Kg	0.06	0.05		1.20	a	cPAH
205-99-2	BENZO[B/J]FLUORANTHENE	ND		mg/Kg	0.06	0.05		1.20	a	cPAH
191-24-2	BENZO[G,H,I]PERYLENE	ND		mg/Kg	0.06	0.05		1.20	a	
207-08-9	BENZO[K]FLUORANTHENE	ND		mg/Kg	0.06	0.05		1.20	a	cPAH
218-01-9	CHRYSENE	ND		mg/Kg	0.06	0.05		1.20	a	cPAH
53-70-3	DIBENZ[A,H]ANTHRACENE	ND		mg/Kg	0.06	0.05		1.20	a	cPAH
206-44-0	FLUORANTHENE	ND		mg/Kg	0.06	0.05		1.20	a	
86-73-7	FLUORENE	ND		mg/Kg	0.06	0.05		1.20	a	
193-39-5	INDENO[1,2,3,C,D]PYRENE	ND		mg/Kg	0.06	0.05		1.20	a	cPAH
91-20-3	NAPHTHALENE	ND		mg/Kg	0.06	0.05		1.20	a	
85-01-8	PHENANTHRENE	ND		mg/Kg	0.06	0.05		1.20	a	
129-00-0	PYRENE	ND		mg/Kg	0.06	0.05		1.20	a	

Notes:

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Bend, OR *Microbiology (e)*
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WSDOE Lab C567

DATA REPORT

Page 1 of 1

Client Name: Aspect Consulting, LLC
401 2nd Ave S Suite 201
Seattle, WA 98104

Reference Number: **17-03594**
Project: LSE

Lab Number: 08530
Field ID: AB-08-5-7
Sample Description: AB-08-5-7
Matrix: Soil
Sample Date: 2/17/17
Extraction Date: 2/21/17
Extraction Method: 3540C

Report Date: 6/28/17
Date Analyzed: 2/27/17
Analyst: CO
Analytical Method: 8270D
Batch: PAH_S170221
Approved By: nml,pdm

Authorized by:


Bryce Jensen
Chief Inorganic Chemist

CAS	Compound	RESULT	Flag	UNITS	Lab QL	Permit QL	MDL	D.F.	Lab	COMMENT
	Total PAHs									
	TOTAL PAH	ND		mg/Kg				1.00	a	
91-57-6	2-METHYLNAPHTHALENE	ND		mg/Kg	0.06	0.05		1.20	a	
208-96-8	ACENAPHTHYLENE	ND		mg/Kg	0.06	0.05		1.20	a	
83-32-9	ACENAPTHENE	ND		mg/Kg	0.06	0.05		1.20	a	
120-12-7	ANTHRACENE	ND		mg/Kg	0.06	0.05		1.20	a	
56-55-3	BENZ[A]ANTHRACENE	ND		mg/Kg	0.06	0.05		1.20	a	cPAH
50-32-8	BENZO[A]PYRENE	ND		mg/Kg	0.06	0.05		1.20	a	cPAH
205-99-2	BENZO[B/J]FLUORANTHENE	ND		mg/Kg	0.06	0.05		1.20	a	cPAH
191-24-2	BENZO[G,H,I]PERYLENE	ND		mg/Kg	0.06	0.05		1.20	a	
207-08-9	BENZO[K]FLUORANTHENE	ND		mg/Kg	0.06	0.05		1.20	a	cPAH
218-01-9	CHRYSENE	ND		mg/Kg	0.06	0.05		1.20	a	cPAH
53-70-3	DIBENZ[A,H]ANTHRACENE	ND		mg/Kg	0.06	0.05		1.20	a	cPAH
206-44-0	FLUORANTHENE	ND		mg/Kg	0.06	0.05		1.20	a	
86-73-7	FLUORENE	ND		mg/Kg	0.06	0.05		1.20	a	
193-39-5	INDENO[1,2,3,C,D]PYRENE	ND		mg/Kg	0.06	0.05		1.20	a	cPAH
91-20-3	NAPHTHALENE	ND		mg/Kg	0.06	0.05		1.20	a	
85-01-8	PHENANTHRENE	ND		mg/Kg	0.06	0.05		1.20	a	
129-00-0	PYRENE	ND		mg/Kg	0.06	0.05		1.20	a	

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20332 Empire Blvd Ste 4 - Bend, OR 97701 - 541.639.8425

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DATA REPORT

Page 1 of 1

Client Name: Aspect Consulting, LLC
401 2nd Ave S Suite 201
Seattle, WA 98104

Reference Number: **17-03594**
Project: LSE

Lab Number: 08531
Field ID: AB-08-10-13
Sample Description: AB-08-10-13
Matrix: Soil
Sample Date: 2/17/17
Extraction Date: 2/27/17
Extraction Method: 3540C

Report Date: 6/28/17
Date Analyzed: 3/1/17
Analyst: CO
Analytical Method: 8270D
Batch: PAH_S170227
Approved By: nml.pdm

Authorized by:


Bryce Jensen
Chief Inorganic Chemist

CAS	Compound	RESULT	Flag	UNITS	Lab QL	Permit QL	MDL	D.F.	Lab	COMMENT
	Total PAHs									
	TOTAL PAH	ND		mg/Kg				1.00	a	
91-57-6	2-METHYLNAPHTHALENE	ND		mg/Kg	0.07	0.05		1.30	a	
208-96-8	ACENAPHTHYLENE	ND		mg/Kg	0.07	0.05		1.30	a	
83-32-9	ACENAPTHENE	ND		mg/Kg	0.07	0.05		1.30	a	
120-12-7	ANTHRACENE	ND		mg/Kg	0.07	0.05		1.30	a	
56-55-3	BENZ[A]ANTHRACENE	ND		mg/Kg	0.07	0.05		1.30	a	cPAH
50-32-8	BENZO[A]PYRENE	ND		mg/Kg	0.07	0.05		1.30	a	cPAH
205-99-2	BENZO[B/J]FLUORANTHENE	ND		mg/Kg	0.07	0.05		1.30	a	cPAH
191-24-2	BENZO[G,H,I]PERYLENE	ND		mg/Kg	0.07	0.05		1.30	a	
207-08-9	BENZO[K]FLUORANTHENE	ND		mg/Kg	0.07	0.05		1.30	a	cPAH
218-01-9	CHRYSENE	ND		mg/Kg	0.07	0.05		1.30	a	cPAH
53-70-3	DIBENZ[A,H]ANTHRACENE	ND		mg/Kg	0.07	0.05		1.30	a	cPAH
206-44-0	FLUORANTHENE	ND		mg/Kg	0.07	0.05		1.30	a	
86-73-7	FLUORENE	ND		mg/Kg	0.07	0.05		1.30	a	
193-39-5	INDENO[1,2,3,C,D]PYRENE	ND		mg/Kg	0.07	0.05		1.30	a	cPAH
91-20-3	NAPHTHALENE	ND		mg/Kg	0.07	0.05		1.30	a	
85-01-8	PHENANTHRENE	ND		mg/Kg	0.07	0.05		1.30	a	
129-00-0	PYRENE	ND		mg/Kg	0.07	0.05		1.30	a	

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DATA REPORT

Page 1 of 1

Client Name: Aspect Consulting, LLC
401 2nd Ave S Suite 201
Seattle, WA 98104

Reference Number: **17-03594**
Project: LSE

Lab Number: 08532
Field ID: AB-09-0-3
Sample Description: AB-09-0-3
Matrix: Soil
Sample Date: 2/17/17
Extraction Date: 2/27/17
Extraction Method: 3540C

Report Date: 6/28/17
Date Analyzed: 3/1/17
Analyst: CO
Analytical Method: 8270D
Batch: PAH_S170227
Approved By: nml.pdm

Authorized by:


Bryce Jensen
Chief Inorganic Chemist

CAS	Compound	RESULT	Flag	UNITS	Lab QL	Permit QL	MDL	D.F.	Lab	COMMENT
	Total PAHs									
	TOTAL PAH	0.88		mg/Kg				1.10	a	
91-57-6	2-METHYLNAPHTHALENE	ND		mg/Kg	0.06	0.05		1.10	a	
208-96-8	ACENAPHTHYLENE	ND		mg/Kg	0.06	0.05		1.10	a	
83-32-9	ACENAPTHENE	ND		mg/Kg	0.06	0.05		1.10	a	
120-12-7	ANTHRACENE	ND		mg/Kg	0.06	0.05		1.10	a	
56-55-3	BENZ[A]ANTHRACENE	ND		mg/Kg	0.06	0.05		1.10	a	cPAH
50-32-8	BENZO[A]PYRENE	ND		mg/Kg	0.06	0.05		1.10	a	cPAH
205-99-2	BENZO[B/J]FLUORANTHENE	ND		mg/Kg	0.06	0.05		1.10	a	cPAH
191-24-2	BENZO[G,H,I]PERYLENE	ND		mg/Kg	0.06	0.05		1.10	a	
207-08-9	BENZO[K]FLUORANTHENE	ND		mg/Kg	0.06	0.05		1.10	a	cPAH
218-01-9	CHRYSENE	0.29		mg/Kg	0.06	0.05		1.10	a	cPAH
53-70-3	DIBENZ[A,H]ANTHRACENE	ND		mg/Kg	0.06	0.05		1.10	a	cPAH
206-44-0	FLUORANTHENE	0.25		mg/Kg	0.06	0.05		1.10	a	
86-73-7	FLUORENE	ND		mg/Kg	0.06	0.05		1.10	a	
193-39-5	INDENO[1,2,3,C,D]PYRENE	ND		mg/Kg	0.06	0.05		1.10	a	cPAH
91-20-3	NAPHTHALENE	ND		mg/Kg	0.06	0.05		1.10	a	
85-01-8	PHENANTHRENE	0.13		mg/Kg	0.06	0.05		1.10	a	
129-00-0	PYRENE	0.21		mg/Kg	0.06	0.05		1.10	a	

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DATA REPORT

Page 1 of 1

Client Name: Aspect Consulting, LLC
401 2nd Ave S Suite 201
Seattle, WA 98104

Reference Number: **17-03594**
Project: LSE

Lab Number: 08533
Field ID: AB-09-8-9
Sample Description: AB-09-8-9
Matrix: Soil
Sample Date: 2/17/17
Extraction Date: 2/27/17
Extraction Method: 3540C

Report Date: 6/28/17
Date Analyzed: 3/1/17
Analyst: CO
Analytical Method: 8270D
Batch: PAH_S170227
Approved By: nml.pdm

Authorized by:


Bryce Jensen
Chief Inorganic Chemist

CAS	Compound	RESULT	Flag	UNITS	Lab QL	Permit QL	MDL	D.F.	Lab	COMMENT
	Total PAHs									
	TOTAL PAH	ND		mg/Kg				1.10	a	
90-12-0	1-METHYLNAPHTHALENE	ND		mg/Kg	0.06	0.05		1.10	a	
91-57-6	2-METHYLNAPHTHALENE	ND		mg/Kg	0.06	0.05		1.10	a	
208-96-8	ACENAPHTHYLENE	ND		mg/Kg	0.06	0.05		1.10	a	
83-32-9	ACENAPTHENE	ND		mg/Kg	0.06	0.05		1.10	a	
120-12-7	ANTHRACENE	ND		mg/Kg	0.06	0.05		1.10	a	
56-55-3	BENZ[A]ANTHRACENE	ND		mg/Kg	0.06	0.05		1.10	a	cPAH
50-32-8	BENZO[A]PYRENE	ND		mg/Kg	0.06	0.05		1.10	a	cPAH
205-99-2	BENZO[B/J]FLUORANTHENE	ND		mg/Kg	0.06	0.05		1.10	a	cPAH
191-24-2	BENZO[G,H,I]PERYLENE	ND		mg/Kg	0.06	0.05		1.10	a	
207-08-9	BENZO[K]FLUORANTHENE	ND		mg/Kg	0.06	0.05		1.10	a	cPAH
218-01-9	CHRYSENE	ND		mg/Kg	0.06	0.05		1.10	a	cPAH
53-70-3	DIBENZ[A,H]ANTHRACENE	ND		mg/Kg	0.06	0.05		1.10	a	cPAH
206-44-0	FLUORANTHENE	ND		mg/Kg	0.06	0.05		1.10	a	
86-73-7	FLUORENE	ND		mg/Kg	0.06	0.05		1.10	a	
193-39-5	INDENO[1,2,3,C,D]PYRENE	ND		mg/Kg	0.06	0.05		1.10	a	cPAH
91-20-3	NAPHTHALENE	ND		mg/Kg	0.06	0.05		1.10	a	
85-01-8	PHENANTHRENE	ND		mg/Kg	0.06	0.05		1.10	a	
129-00-0	PYRENE	ND		mg/Kg	0.06	0.05		1.10	a	

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WSDOE Lab C567

DATA REPORT

Page 1 of 1

Client Name: Aspect Consulting, LLC
401 2nd Ave S Suite 201
Seattle, WA 98104

Reference Number: **17-03594**
Project: LSE

Lab Number: 08534
Field ID: AB-10-5-10
Sample Description: AB-10-5-10
Matrix: Soil
Sample Date: 2/17/17
Extraction Date: 2/27/17
Extraction Method: 3540C

Report Date: 6/28/17
Date Analyzed: 3/1/17
Analyst: CO
Analytical Method: 8270D
Batch: PAH_S170227
Approved By: nml.pdm

Authorized by:


Bryce Jensen
Chief Inorganic Chemist

CAS	Compound	RESULT	Flag	UNITS	Lab QL	Permit QL	MDL	D.F.	Lab	COMMENT
	Total PAHs									
	TOTAL PAH	ND		mg/Kg				1.20	a	
91-57-6	2-METHYLNAPHTHALENE	ND		mg/Kg	0.06	0.05		1.20	a	
208-96-8	ACENAPHTHYLENE	ND		mg/Kg	0.06	0.05		1.20	a	
83-32-9	ACENAPTHENE	ND		mg/Kg	0.06	0.05		1.20	a	
120-12-7	ANTHRACENE	ND		mg/Kg	0.06	0.05		1.20	a	
56-55-3	BENZ[A]ANTHRACENE	ND		mg/Kg	0.06	0.05		1.20	a	cPAH
50-32-8	BENZO[A]PYRENE	ND		mg/Kg	0.06	0.05		1.20	a	cPAH
205-99-2	BENZO[B/J]FLUORANTHENE	ND		mg/Kg	0.06	0.05		1.20	a	cPAH
191-24-2	BENZO[G,H,I]PERYLENE	ND		mg/Kg	0.06	0.05		1.20	a	
207-08-9	BENZO[K]FLUORANTHENE	ND		mg/Kg	0.06	0.05		1.20	a	cPAH
218-01-9	CHRYSENE	ND		mg/Kg	0.06	0.05		1.20	a	cPAH
53-70-3	DIBENZ[A,H]ANTHRACENE	ND		mg/Kg	0.06	0.05		1.20	a	cPAH
206-44-0	FLUORANTHENE	ND		mg/Kg	0.06	0.05		1.20	a	
86-73-7	FLUORENE	ND		mg/Kg	0.06	0.05		1.20	a	
193-39-5	INDENO[1,2,3,C,D]PYRENE	ND		mg/Kg	0.06	0.05		1.20	a	cPAH
91-20-3	NAPHTHALENE	ND		mg/Kg	0.06	0.05		1.20	a	
85-01-8	PHENANTHRENE	ND		mg/Kg	0.06	0.05		1.20	a	
129-00-0	PYRENE	ND		mg/Kg	0.06	0.05		1.20	a	

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WSDOE Lab C567

DATA REPORT

Page 1 of 1

Client Name: Aspect Consulting, LLC
401 2nd Ave S Suite 201
Seattle, WA 98104

Reference Number: **17-03594**
Project: LSE

Lab Number: 08535
Field ID: AB-10-10-13
Sample Description: AB-10-10-13
Matrix: Soil
Sample Date: 2/17/17
Extraction Date: 2/27/17
Extraction Method: 3540C

Report Date: 6/28/17
Date Analyzed: 3/1/17
Analyst: CO
Analytical Method: 8270D
Batch: PAH_S170227
Approved By: nml.pdm

Authorized by:


Bryce Jensen
Chief Inorganic Chemist

CAS	Compound	RESULT	Flag	UNITS	Lab QL	Permit QL	MDL	D.F.	Lab	COMMENT
	Total PAHs									
	TOTAL PAH	ND		mg/Kg				1.10	a	
90-12-0	1-METHYLNAPHTHALENE	ND		mg/Kg	0.06	0.05		1.10	a	
91-57-6	2-METHYLNAPHTHALENE	ND		mg/Kg	0.06	0.05		1.10	a	
208-96-8	ACENAPHTHYLENE	ND		mg/Kg	0.06	0.05		1.10	a	
83-32-9	ACENAPTHENE	ND		mg/Kg	0.06	0.05		1.10	a	
120-12-7	ANTHRACENE	ND		mg/Kg	0.06	0.05		1.10	a	
56-55-3	BENZ[A]ANTHRACENE	ND		mg/Kg	0.06	0.05		1.10	a	cPAH
50-32-8	BENZO[A]PYRENE	ND		mg/Kg	0.06	0.05		1.10	a	cPAH
205-99-2	BENZO[B/J]FLUORANTHENE	ND		mg/Kg	0.06	0.05		1.10	a	cPAH
191-24-2	BENZO[G,H,I]PERYLENE	ND		mg/Kg	0.06	0.05		1.10	a	
207-08-9	BENZO[K]FLUORANTHENE	ND		mg/Kg	0.06	0.05		1.10	a	cPAH
218-01-9	CHRYSENE	ND		mg/Kg	0.06	0.05		1.10	a	cPAH
53-70-3	DIBENZ[A,H]ANTHRACENE	ND		mg/Kg	0.06	0.05		1.10	a	cPAH
206-44-0	FLUORANTHENE	ND		mg/Kg	0.06	0.05		1.10	a	
86-73-7	FLUORENE	ND		mg/Kg	0.06	0.05		1.10	a	
193-39-5	INDENO[1,2,3,C,D]PYRENE	ND		mg/Kg	0.06	0.05		1.10	a	cPAH
91-20-3	NAPHTHALENE	ND		mg/Kg	0.06	0.05		1.10	a	
85-01-8	PHENANTHRENE	ND		mg/Kg	0.06	0.05		1.10	a	
129-00-0	PYRENE	ND		mg/Kg	0.06	0.05		1.10	a	

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Bellingham, WA *Microbiology (b)*
805 Orchard Dr Ste 4 - Bellingham, WA 98225 - 360.715.1212

Portland, OR *Microbiology/Chemistry (c)*
9150 SW Pioneer Ct Ste W - Wilsonville, OR 97070 - 503.682.7802
Corvallis, OR *Microbiology/Chemistry (d)*
540 SW Third Street - Corvallis, OR 97333 - 541.753.4946
Bend, OR *Microbiology (e)*
20332 Empire Blvd Ste 4 - Bend, OR 97701 - 541.639.8425

WSDOE Lab C567

DATA REPORT

Page 1 of 1

Client Name: Aspect Consulting, LLC
401 2nd Ave S Suite 201
Seattle, WA 98104

Reference Number: **17-03594**
Project: LSE

Lab Number: 08536
Field ID: AB-10-15-17
Sample Description: AB-10-15-17
Matrix: Soil
Sample Date: 2/17/17
Extraction Date: 2/27/17
Extraction Method: 3540C

Report Date: 6/28/17
Date Analyzed: 3/1/17
Analyst: CO
Analytical Method: 8270D
Batch: PAH_S170227
Approved By: nml.pdm

Authorized by:


Bryce Jensen
Chief Inorganic Chemist

CAS	Compound	RESULT	Flag	UNITS	Lab QL	Permit QL	MDL	D.F.	Lab	COMMENT
	Total PAHs									
	TOTAL PAH	ND		mg/Kg				1.20	a	
90-12-0	1-METHYLNAPHTHALENE	ND		mg/Kg	0.06	0.05		1.20	a	
91-57-6	2-METHYLNAPHTHALENE	ND		mg/Kg	0.06	0.05		1.20	a	
208-96-8	ACENAPHTHYLENE	ND		mg/Kg	0.06	0.05		1.20	a	
83-32-9	ACENAPTHENE	ND		mg/Kg	0.06	0.05		1.20	a	
120-12-7	ANTHRACENE	ND		mg/Kg	0.06	0.05		1.20	a	
56-55-3	BENZ[A]ANTHRACENE	ND		mg/Kg	0.06	0.05		1.20	a	cPAH
50-32-8	BENZO[A]PYRENE	ND		mg/Kg	0.06	0.05		1.20	a	cPAH
205-99-2	BENZO[B/J]FLUORANTHENE	ND		mg/Kg	0.06	0.05		1.20	a	cPAH
191-24-2	BENZO[G,H,I]PERYLENE	ND		mg/Kg	0.06	0.05		1.20	a	
207-08-9	BENZO[K]FLUORANTHENE	ND		mg/Kg	0.06	0.05		1.20	a	cPAH
218-01-9	CHRYSENE	ND		mg/Kg	0.06	0.05		1.20	a	cPAH
53-70-3	DIBENZ[A,H]ANTHRACENE	ND		mg/Kg	0.06	0.05		1.20	a	cPAH
206-44-0	FLUORANTHENE	ND		mg/Kg	0.06	0.05		1.20	a	
86-73-7	FLUORENE	ND		mg/Kg	0.06	0.05		1.20	a	
193-39-5	INDENO[1,2,3,C,D]PYRENE	ND		mg/Kg	0.06	0.05		1.20	a	cPAH
91-20-3	NAPHTHALENE	ND		mg/Kg	0.06	0.05		1.20	a	
85-01-8	PHENANTHRENE	ND		mg/Kg	0.06	0.05		1.20	a	
129-00-0	PYRENE	ND		mg/Kg	0.06	0.05		1.20	a	

Notes:

Flags are data qualifiers. If there are data qualifiers on your report definitions can be found on an accompanying sheet.

ND - indicates the compound was not detected above the PQL or MDL.

Lab QL = Laboratory Quantitation Limit is the lowest level that can be achieved within specified limits of precision and accuracy during routine laboratory operating conditions.

Permit QL = Quantitation Limit required by permit (listed in Appendix A) or other regulatory requirement.

D.F. - Dilution Factor.

If you have any questions concerning this report contact us at the above phone number.



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Page 1 of 6

Hydrocarbon Data Report

Client Name: Aspect Consulting, LLC
401 2nd Ave S Suite 201
Seattle, WA 98104

Reference Number: **17-03594**

Project: LSE

Report Date: 3/21/17

Date Received: 2/21/17

Approved By: nml

Authorized by:


Bryce Jensen
Chief Inorganic Chemist

Sample Description: AB-01-5-8
Lab Number: 8517
Date Analyzed: 2/24/17

Sample Date: 2/17/17 12:00
Collected By: MV
Analyzed By: HY

Parameter	Result	Flag	DF	Cleanup Level	PQL	MDL	Units	Method	Lab	Batch	Comment
NWTPH-Dx											
DIESEL (C12 - C24)	ND		1	2000	50		mg/Kg	NWTPH-Dx/35 50B	a	DXS_170223	
HEAVIER OILS (>C24)	ND		1	2000	50		mg/Kg	NWTPH-Dx/35 50B	a	DXS_170223	

Sample Description: AB-01-10-13
Lab Number: 8518
Date Analyzed: 2/24/17

Sample Date: 2/17/17 12:05
Collected By: MV
Analyzed By: HY

Parameter	Result	Flag	DF	Cleanup Level	PQL	MDL	Units	Method	Lab	Batch	Comment
NWTPH-Dx											
DIESEL (C12 - C24)	ND		1	2000	50		mg/Kg	NWTPH-Dx/35 50B	a	DXS_170223	
HEAVIER OILS (>C24)	ND		1	2000	50		mg/Kg	NWTPH-Dx/35 50B	a	DXS_170223	

Sample Description: AB-02-5-8
Lab Number: 8519
Date Analyzed: 2/24/17

Sample Date: 2/17/17 13:35
Collected By: MV
Analyzed By: HY

Parameter	Result	Flag	DF	Cleanup Level	PQL	MDL	Units	Method	Lab	Batch	Comment
NWTPH-Dx											
DIESEL (C12 - C24)	ND		1	2000	50		mg/Kg	NWTPH-Dx/35 50B	a	DXS_170223	
HEAVIER OILS (>C24)	ND		1	2000	50		mg/Kg	NWTPH-Dx/35 50B	a	DXS_170223	

Notation:

ND - A result of "ND" indicates that the compound was not detected above the Lab's Method Reporting Limit - MRL.

PQL = Practical Quantitation Limit is the lowest level that can be achieved within specified limits of precision and accuracy during routine laboratory operating conditions.

D.F. - Dilution Factor

Cleanup Level - The regulatory limit for Method A Cleanup Levels (MTCA, Chapter 173-340 WAC) contaminants in the specified matrix. Amended Feb 12, 2001

The Cleanup level for Gasoline Range Organics (GRO) is 100 mg/Kg for gas mixtures without benzene and when the total ethylbenzene, toluene and xylenes are less than 1% of the gasoline concentration. The Cleanup level for GRO is 30 mg/Kg for all other mixtures.

If you have any questions concerning this report contact us at the above phone number.

Form: cHClD.rpt

Hydrocarbon Data Report

Sample Description: AB-02-10-12						Sample Date: 2/17/17 13:40					
Lab Number: 8520						Collected By: MV					
Date Analyzed: 2/24/17						Analyzed By: HY					
Parameter	Result	Flag	DF	Cleanup Level	PQL	MDL	Units	Method	Lab	Batch	Comment

NWTPH-Dx

DIESEL (C12 - C24)	ND		1	2000	50		mg/Kg	NWTPH-Dx/35 50B	a	DXS_170223	
HEAVIER OILS (>C24)	ND		1	2000	50		mg/Kg	NWTPH-Dx/35 50B	a	DXS_170223	

Sample Description: AB-03-5-7						Sample Date: 2/17/17 11:05					
Lab Number: 8521						Collected By: MV					
Date Analyzed: 2/24/17						Analyzed By: HY					
Parameter	Result	Flag	DF	Cleanup Level	PQL	MDL	Units	Method	Lab	Batch	Comment

NWTPH-Dx

DIESEL (C12 - C24)	ND		1	2000	50		mg/Kg	NWTPH-Dx/35 50B	a	DXS_170223	
HEAVIER OILS (>C24)	ND		1	2000	50		mg/Kg	NWTPH-Dx/35 50B	a	DXS_170223	

Sample Description: AB-03-10-13						Sample Date: 2/17/17 11:10					
Lab Number: 8522						Collected By: MV					
Date Analyzed: 2/24/17						Analyzed By: HY					
Parameter	Result	Flag	DF	Cleanup Level	PQL	MDL	Units	Method	Lab	Batch	Comment

NWTPH-Dx

DIESEL (C12 - C24)	ND		1	2000	50		mg/Kg	NWTPH-Dx/35 50B	a	DXS_170223	
HEAVIER OILS (>C24)	ND		1	2000	50		mg/Kg	NWTPH-Dx/35 50B	a	DXS_170223	

Sample Description: AB-04-1-4						Sample Date: 2/17/17 14:00					
Lab Number: 8523						Collected By: MV					
Date Analyzed: 2/24/17						Analyzed By: HY					
Parameter	Result	Flag	DF	Cleanup Level	PQL	MDL	Units	Method	Lab	Batch	Comment

NWTPH-Dx

DIESEL (C12 - C24)	ND		1	2000	50		mg/Kg	NWTPH-Dx/35 50B	a	DXS_170223	
HEAVIER OILS (>C24)	ND		1	2000	50		mg/Kg	NWTPH-Dx/35 50B	a	DXS_170223	

Notation:

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D.F. - Dilution Factor

Cleanup Level - The regulatory limit for Method A Cleanup Levels (MTCA, Chapter173-340 WAC) contaminants in the specified matrix. Amended Feb 12, 2001

The Cleanup level for Gasoline Range Organics (GRO) is 100 mg/Kg for gas mixtures without benzene and when the total ethylbenzene, toluene and xylenes are less than 1% of the gasoline concentration. The Cleanup level for GRO is 30 mg/Kg for all other mixtures.

Hydrocarbon Data Report

Sample Description: AB-04-5-9						Sample Date: 2/17/17 14:05					
Lab Number: 8524						Collected By: MV					
Date Analyzed: 2/28/17						Analyzed By: HY					
Parameter	Result	Flag	DF	Cleanup Level	PQL	MDL	Units	Method	Lab	Batch	Comment

NWTPH-Dx

DIESEL (C12 - C24)	ND		1	2000	50		mg/Kg	NWTPH-Dx/35 50B	a	DXS_170227	
HEAVIER OILS (>C24)	ND		1	2000	50		mg/Kg	NWTPH-Dx/35 50B	a	DXS_170227	

Sample Description: AB-05-1-3						Sample Date: 2/17/17 14:20					
Lab Number: 8525						Collected By: MV					
Date Analyzed: 2/28/17						Analyzed By: HY					
Parameter	Result	Flag	DF	Cleanup Level	PQL	MDL	Units	Method	Lab	Batch	Comment

NWTPH-Dx

DIESEL (C12 - C24)	ND		1	2000	50		mg/Kg	NWTPH-Dx/35 50B	a	DXS_170227	
HEAVIER OILS (>C24)	ND		1	2000	50		mg/Kg	NWTPH-Dx/35 50B	a	DXS_170227	

Sample Description: AB-05-6-8						Sample Date: 2/17/17 14:25					
Lab Number: 8526						Collected By: MV					
Date Analyzed: 2/28/17						Analyzed By: HY					
Parameter	Result	Flag	DF	Cleanup Level	PQL	MDL	Units	Method	Lab	Batch	Comment

NWTPH-Dx

DIESEL (C12 - C24)	ND		1	2000	50		mg/Kg	NWTPH-Dx/35 50B	a	DXS_170227	
HEAVIER OILS (>C24)	ND		1	2000	50		mg/Kg	NWTPH-Dx/35 50B	a	DXS_170227	

Sample Description: AB-06-0-2						Sample Date: 2/17/17 16:30					
Lab Number: 8527						Collected By: MV					
Date Analyzed: 2/28/17						Analyzed By: HY					
Parameter	Result	Flag	DF	Cleanup Level	PQL	MDL	Units	Method	Lab	Batch	Comment

NWTPH-Dx

DIESEL (C12 - C24)	ND		2	2000	100		mg/Kg	NWTPH-Dx/35 50B	a	DXS_170227	
HEAVIER OILS (>C24)	99		2	2000	100		mg/Kg	NWTPH-Dx/35 50B	a	DXS_170227	

Notation:

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D.F. - Dilution Factor

Cleanup Level - The regulatory limit for Method A Cleanup Levels (MTCA, Chapter173-340 WAC) contaminants in the specified matrix. Amended Feb 12, 2001

The Cleanup level for Gasoline Range Organics (GRO) is 100 mg/Kg for gas mixtures without benzene and when the total ethylbenzene, toluene and xylenes are less than 1% of the gasoline concentration. The Cleanup level for GRO is 30 mg/Kg for all other mixtures.

Hydrocarbon Data Report

Sample Description: AB-07-0-3						Sample Date: 2/17/17 11:25					
Lab Number: 8528						Collected By: MV					
Date Analyzed: 2/28/17						Analyzed By: HY					
Parameter	Result	Flag	DF	Cleanup Level	PQL	MDL	Units	Method	Lab	Batch	Comment

NWTPH-Dx

DIESEL (C12 - C24)	ND		1	2000	50		mg/Kg	NWTPH-Dx/35 50B	a	DXS_170227	
HEAVIER OILS (>C24)	ND		1	2000	50		mg/Kg	NWTPH-Dx/35 50B	a	DXS_170227	

Sample Description: AB-07-9-10						Sample Date: 2/17/17 11:30					
Lab Number: 8529						Collected By: MV					
Date Analyzed: 2/28/17						Analyzed By: HY					
Parameter	Result	Flag	DF	Cleanup Level	PQL	MDL	Units	Method	Lab	Batch	Comment

NWTPH-Dx

DIESEL (C12 - C24)	ND		1	2000	50		mg/Kg	NWTPH-Dx/35 50B	a	DXS_170227	
HEAVIER OILS (>C24)	ND		1	2000	50		mg/Kg	NWTPH-Dx/35 50B	a	DXS_170227	

Sample Description: AB-08-5-7						Sample Date: 2/17/17 12:10					
Lab Number: 8530						Collected By: MV					
Date Analyzed: 2/28/17						Analyzed By: HY					
Parameter	Result	Flag	DF	Cleanup Level	PQL	MDL	Units	Method	Lab	Batch	Comment

NWTPH-Dx

DIESEL (C12 - C24)	ND		1	2000	50		mg/Kg	NWTPH-Dx/35 50B	a	DXS_170227	
HEAVIER OILS (>C24)	ND		1	2000	50		mg/Kg	NWTPH-Dx/35 50B	a	DXS_170227	

Sample Description: AB-08-10-13						Sample Date: 2/17/17 12:15					
Lab Number: 8531						Collected By: MV					
Date Analyzed: 2/28/17						Analyzed By: HY					
Parameter	Result	Flag	DF	Cleanup Level	PQL	MDL	Units	Method	Lab	Batch	Comment

NWTPH-Dx

DIESEL (C12 - C24)	ND		1	2000	50		mg/Kg	NWTPH-Dx/35 50B	a	DXS_170227	
HEAVIER OILS (>C24)	ND		1	2000	50		mg/Kg	NWTPH-Dx/35 50B	a	DXS_170227	

Notation:

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D.F. - Dilution Factor

Cleanup Level - The regulatory limit for Method A Cleanup Levels (MTCA, Chapter173-340 WAC) contaminants in the specified matrix. Amended Feb 12, 2001

The Cleanup level for Gasoline Range Organics (GRO) is 100 mg/Kg for gas mixtures without benzene and when the total ethylbenzene, toluene and xylenes are less than 1% of the gasoline concentration. The Cleanup level for GRO is 30 mg/Kg for all other mixtures.

Hydrocarbon Data Report

Sample Description: AB-09-0-3						Sample Date: 2/17/17 12:40					
Lab Number: 8532						Collected By: MV					
Date Analyzed: 2/28/17						Analyzed By: HY					
Parameter	Result	Flag	DF	Cleanup Level	PQL	MDL	Units	Method	Lab	Batch	Comment

NWTPH-Dx

DIESEL (C12 - C24)	ND		1	2000	50		mg/Kg	NWTPH-Dx/35 50B	a	DXS_170227	
HEAVIER OILS (>C24)	1450		1	2000	50		mg/Kg	NWTPH-Dx/35 50B	a	DXS_170227	

Sample Description: AB-09-8-9						Sample Date: 2/17/17 12:45					
Lab Number: 8533						Collected By: MV					
Date Analyzed: 2/28/17						Analyzed By: HY					
Parameter	Result	Flag	DF	Cleanup Level	PQL	MDL	Units	Method	Lab	Batch	Comment

NWTPH-Dx

DIESEL (C12 - C24)	ND		1	2000	50		mg/Kg	NWTPH-Dx/35 50B	a	DXS_170227	
HEAVIER OILS (>C24)	ND		1	2000	50		mg/Kg	NWTPH-Dx/35 50B	a	DXS_170227	

Sample Description: AB-10-5-10						Sample Date: 2/17/17 9:35					
Lab Number: 8534						Collected By: MV					
Date Analyzed: 2/28/17						Analyzed By: HY					
Parameter	Result	Flag	DF	Cleanup Level	PQL	MDL	Units	Method	Lab	Batch	Comment

NWTPH-Dx

DIESEL (C12 - C24)	ND		1	2000	50		mg/Kg	NWTPH-Dx/35 50B	a	DXS_170227	
HEAVIER OILS (>C24)	ND		1	2000	50		mg/Kg	NWTPH-Dx/35 50B	a	DXS_170227	

Sample Description: AB-10-10-13						Sample Date: 2/17/17 9:40					
Lab Number: 8535						Collected By: MV					
Date Analyzed: 2/28/17						Analyzed By: HY					
Parameter	Result	Flag	DF	Cleanup Level	PQL	MDL	Units	Method	Lab	Batch	Comment

NWTPH-Dx

DIESEL (C12 - C24)	ND		1	2000	50		mg/Kg	NWTPH-Dx/35 50B	a	DXS_170227	
HEAVIER OILS (>C24)	ND		1	2000	50		mg/Kg	NWTPH-Dx/35 50B	a	DXS_170227	

Notation:

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D.F. - Dilution Factor

Cleanup Level - The regulatory limit for Method A Cleanup Levels (MTCA, Chapter173-340 WAC) contaminants in the specified matrix. Amended Feb 12, 2001

The Cleanup level for Gasoline Range Organics (GRO) is 100 mg/Kg for gas mixtures without benzene and when the total ethylbenzene, toluene and xylenes are less than 1% of the gasoline concentration. The Cleanup level for GRO is 30 mg/Kg for all other mixtures.

Hydrocarbon Data Report

Sample Description: AB-10-15-17
Lab Number: 8536
Date Analyzed: 2/28/17

Sample Date: 2/17/17 9:45
Collected By: MV
Analyzed By: HY

Parameter	Result	Flag	DF	Cleanup Level	PQL	MDL	Units	Method	Lab	Batch	Comment
NWTPH-Dx											
DIESEL (C12 - C24)	ND		1	2000	50		mg/Kg	NWTPH-Dx/35 50B	a	DXS_170227	
HEAVIER OILS (>C24)	ND		1	2000	50		mg/Kg	NWTPH-Dx/35 50B	a	DXS_170227	

Notation:

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Corvallis, OR	Microbiology (d)	540 SW Third Street	Corvallis, OR 97333	541.753.4946

WSDOE Lab C567

Marine Sediment Quality Standards Chemical Criteria WAC 173-204-320

Page 1 of 2

Client Name: Aspect Consulting, LLC
401 2nd Ave S Suite 201
Seattle, WA 98104

Reference Number: **17-03594**
Project: LSE

Lab Number: 08536
Field ID: AB-10-15-17
Sample Description: AB-10-15-17
Matrix: Soil
Sample Date: 2/17/17

Report Date: 3/21/17
Date Analyzed: 3/2/17
Approved by: anp,bj,ljh,pdm
Authorized by:


Bryce Jensen
Chief Inorganic Chemist

CAS	Chemical Parameter	RESULT	Flag	Units	PQL	Maximum Allowance	Method	Analyst	Batch	Lab	Comment
Metals											
7440-38-2	ARSENIC	< 0.85		mg/Kg	0.85	57	6010B/3051	ANP	6010B_170302A	a	
7440-43-9	CADMIUM	< 0.85		mg/Kg	0.85	5.1	6010B/3051	ANP	6010B_170302A	a	
7440-47-3	CHROMIUM	48.0		mg/Kg	0.85	260	6010B/3051	ANP	6010B_170302A	a	
7440-50-8	COPPER	14.7		mg/Kg	0.85	390	6010B/3051	ANP	6010B_170302A	a	
7439-92-1	LEAD	< 0.85		mg/Kg	0.85	450	6010B/3051	ANP	6010B_170302A	a	
7439-97-6	MERCURY	0.0147		mg/Kg	0.0082	0.41	7471A	RHF	7471A_170228	a	
7440-22-4	SILVER	< 0.85		mg/Kg	0.85	6.1	6010B/3051	ANP	6010B_170302A	a	
7440-66-6	ZINC	34.0		mg/Kg	0.85	410	6010B/3051	ANP	6010B_170302A	a	
Polynuclear Aromatic Hydrocarbons (PAHs)											
	LOW MOLECULAR WT PAH	< 0.09		mg/Kg OC*	0.09	370	8270D/3540C	CO	MSQS_170227	a	
91-20-3	NAPHTHALENE	< 0.09		mg/Kg OC	0.09	99	8270D/3540C	CO	MSQS_170227	a	
208-96-8	ACENAPHTHYLENE	< 0.10		mg/Kg OC	0.10	66	8270D/3540C	CO	MSQS_170227	a	
83-32-9	ACENAPHTHENE	< 0.09		mg/Kg OC	0.09	16	8270D/3540C	CO	MSQS_170227	a	
86-73-7	FLUORENE	< 0.10		mg/Kg OC	0.10	23	8270D/3540C	CO	MSQS_170227	a	
85-01-8	PHENANTHRENE	< 0.09		mg/Kg OC	0.09	100	8270D/3540C	CO	MSQS_170227	a	
120-12-7	ANTHRACENE	< 0.09		mg/Kg OC	0.09	220	8270D/3540C	CO	MSQS_170227	a	
91-57-6	2-METHYLNAPHTHALENE	< 0.09		mg/Kg OC	0.09	38	8270D/3540C	CO	MSQS_170227	a	
	HIGH MOLECULAR WT PAH	< 0.08		mg/Kg OC	0.08	960	8270D/3540C	CO	MSQS_170227	a	
206-44-0	FLUORANTHENE	< 0.10		mg/Kg OC	0.10	160	8270D/3540C	CO	MSQS_170227	a	
129-00-0	PYRENE	< 0.10		mg/Kg OC	0.10	1000	8270D/3540C	CO	MSQS_170227	a	
56-55-3	BENZ[<i>a</i>]ANTHRACENE	< 0.10		mg/Kg OC	0.10	110	8270D/3540C	CO	MSQS_170227	a	
218-01-9	CHRYSENE	< 0.10		mg/Kg OC	0.10	110	8270D/3540C	CO	MSQS_170227	a	
	TOTAL BENZOFLUORANTHENES	< 0.10		mg/Kg OC	0.10	230	8270D/3540C	CO	MSQS_170227	a	

Notes:

Flags are data qualifiers. If there are data qualifiers on your report definitions can be found on an accompanying sheet.

Units - mg/Kg is parts per million, mg/Kg OC is parts per million in terms of Organic Carbon, ug/Kg is parts per billion.

Practical Quantitation Limit or PQL is the lowest level that can be achieved within specified limits of precision and accuracy during routine laboratory operating conditions.

Maximum Allowable is taken from Table 1 "Marine Sediment Quality Standards Chemical Criteria" in WAC 173-204-320.

Method - The value listed is the Analytical Method along with the Analytical Prep Method separated by a forward slash.

Batch - The analytical batch number identifies samples that were analyzed together in a group. It is also associated with all quality control processed in that sample group.

If you have any questions concerning this report contact us at the above phone number.

Form: cSediment.rpt

CAS	Chemical Parameter	RESULT	Flag	Units	PQL	Maximum Allowance	Method	Analyst	Batch	Lab	Comment
50-32-8	BENZO[A]PYRENE	< 0.10		mg/Kg OC	0.10	99	8270D/3540C	CO	MSQS_170227	a	
193-39-5	INDENO[1,2,3,C,D]PYRENE	< 0.10		mg/Kg OC	0.10	34	8270D/3540C	CO	MSQS_170227	a	
53-70-3	DIBENZO[A,H]ANTHRACENE	< 0.10		mg/Kg OC	0.10	12	8270D/3540C	CO	MSQS_170227	a	
191-24-2	BENZO[G,H,I]PERYLENE	< 0.10		mg/Kg OC	0.10	31	8270D/3540C	CO	MSQS_170227	a	
Base/Neutral Extractables											
95-50-1	1,2 - DICHLOROBENZENE	< 0.05		mg/Kg OC	0.05	2.3	8270D/3540C	CO	MSQS_170227	a	
106-46-7	1,4 - DICHLOROBENZENE	< 0.05		mg/Kg OC	0.05	3.1	8270D/3540C	CO	MSQS_170227	a	
120-82-1	1,2,4-TRICHLOROBENZENE	< 0.04		mg/Kg OC	0.04	0.81	8270D/3540C	CO	MSQS_170227	a	
118-74-1	HEXACHLOROBENZENE	< 0.03		mg/Kg OC	0.03	0.38	8270D/3540C	CO	MSQS_170227	a	
131-11-3	DIMETHYL PHTHALATE	< 0.31		mg/Kg OC	0.31	53	8270D/3540C	CO	MSQS_170227	a	
84-66-2	DIETHYL PHTHALATE	< 0.33		mg/Kg OC	0.33	61	8270D/3540C	CO	MSQS_170227	a	
84-74-2	DI-N-BUTYL PHTHALATE	< 0.69		mg/Kg OC	0.69	220	8270D/3540C	CO	MSQS_170227	a	
85-68-7	BENZYL BUTYL PHTHALATE	< 0.37		mg/Kg OC	0.37	4.9	8270D/3540C	CO	MSQS_170227	a	
117-81-7	DI(2-ETHYLHEXYL)PHTHALATE	< 0.37		mg/Kg OC	0.37	47	8270D/3540C	CO	MSQS_170227	a	
117-84-0	DI-N-OCTYL PHTHALATE	< 0.37		mg/Kg OC	0.37	58	8270D/3540C	CO	MSQS_170227	a	
132-64-9	DIBENZOFURAN	< 0.09		mg/Kg OC	0.09	15	8270D/3540C	CO	MSQS_170227	a	
87-68-3	HEXACHLOROBUTADIENE	< 0.02		mg/Kg OC	0.02	3.9	8270D/3540C	CO	MSQS_170227	a	
55-18-5	N-NITROSODIPHENYLAMINE	< 0.07		mg/Kg OC	0.07	11	8270D/3540C	CO	MSQS_170227	a	
1336-36-3	PCBS (Total Aroclors)	< 0.2		mg/Kg OC	0.2	12	8082/3540C	CO	8082_S170227		
Acid Extractables											
108-95-2	PHENOL	< 50		ug/Kg	50	420	8270D/3540C	CO	MSQS_170227	a	
95-48-7	2-METHYLPHENOL (o-CRESOL)	< 50		ug/Kg	50	63	8270D/3540C	CO	MSQS_170227	a	
106-44-5	4-METHYLPHENOL (p-CRESOL)	< 50		ug/Kg	50	670	8270D/3540C	CO	MSQS_170227	a	
105-67-9	2,4-DIMETHYLPHENOL	< 25		ug/Kg	25	29	8270D/3540C	CO	MSQS_170227	a	
87-86-5	PENTACHLOROPHENOL	< 50		ug/Kg	50	360	8270D/3540C	CO	MSQS_170227	a	
100-51-6	BENZYL ALCOHOL	< 50		ug/Kg	50	57	8270D/3540C	CO	MSQS_170227	a	
65-85-0	BENZOIC ACID	< 500		ug/Kg	500	650	8270D/3540C	CO	MSQS_170227	a	

Notes:

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Units - mg/Kg is parts per million, mg/Kg OC is parts per million in terms of Organic Carbon, ug/Kg is parts per billion.

Practical Quantitation Limit or PQL is the lowest level that can be achieved within specified limits of precision and accuracy during routine laboratory operating conditions.

Maximum Allowable is taken from Table 1 "Marine Sediment Quality Standards Chemical Criteria" in WAC 173-204-320.

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Burlington, WA	Corporate Laboratory (a)	1620 S Walnut St	Burlington, WA 98233	800.755.9295 • 360.757.1400
Bellingham, WA	Microbiology (b)	805 Orchard Dr Ste 4	Bellingham, WA 98225	360.715.1212
Portland, OR	Microbiology/Chemistry (c)	9150 SW Pioneer Ct Ste W	Wilsonville, OR 97070	503.682.7802
Corvallis, OR	Microbiology (d)	540 SW Third Street	Corvallis, OR 97333	541.753.4946

WSDOE Lab C567

Marine Sediment Quality Standards Chemical Criteria WAC 173-204-320

Page 1 of 2

Client Name: Aspect Consulting, LLC
401 2nd Ave S Suite 201
Seattle, WA 98104

Reference Number: **17-03594**
Project: LSE

Lab Number: 08535
Field ID: AB-10-10-13
Sample Description: AB-10-10-13
Matrix: Soil
Sample Date: 2/17/17

Report Date: 3/21/17
Date Analyzed: 3/2/17
Approved by: anp,bj,ljh,pdm
Authorized by:


Bryce Jensen
Chief Inorganic Chemist

CAS	Chemical Parameter	RESULT	Flag	Units	PQL	Maximum Allowance	Method	Analyst	Batch	Lab	Comment
Metals											
7440-38-2	ARSENIC	< 0.93		mg/Kg	0.93	57	6010B/3051	ANP	6010B_170302A	a	
7440-43-9	CADMIUM	< 0.93		mg/Kg	0.93	5.1	6010B/3051	ANP	6010B_170302A	a	
7440-47-3	CHROMIUM	7.55		mg/Kg	0.93	260	6010B/3051	ANP	6010B_170302A	a	
7440-50-8	COPPER	10.9		mg/Kg	0.93	390	6010B/3051	ANP	6010B_170302A	a	
7439-92-1	LEAD	< 0.93		mg/Kg	0.93	450	6010B/3051	ANP	6010B_170302A	a	
7439-97-6	MERCURY	0.0236		mg/Kg	0.0081	0.41	7471A	RHF	7471A_170224	a	
7440-22-4	SILVER	< 0.93		mg/Kg	0.93	6.1	6010B/3051	ANP	6010B_170302A	a	
7440-66-6	ZINC	15.8		mg/Kg	0.93	410	6010B/3051	ANP	6010B_170302A	a	
Polynuclear Aromatic Hydrocarbons (PAHs)											
	LOW MOLECULAR WT PAH	< 0.09		mg/Kg OC*	0.09	370	8270D/3540C	CO	MSQS_170227	a	
91-20-3	NAPHTHALENE	< 0.09		mg/Kg OC	0.09	99	8270D/3540C	CO	MSQS_170227	a	
208-96-8	ACENAPHTHYLENE	< 0.10		mg/Kg OC	0.10	66	8270D/3540C	CO	MSQS_170227	a	
83-32-9	ACENAPHTHENE	< 0.09		mg/Kg OC	0.09	16	8270D/3540C	CO	MSQS_170227	a	
86-73-7	FLUORENE	< 0.10		mg/Kg OC	0.10	23	8270D/3540C	CO	MSQS_170227	a	
85-01-8	PHENANTHRENE	< 0.09		mg/Kg OC	0.09	100	8270D/3540C	CO	MSQS_170227	a	
120-12-7	ANTHRACENE	< 0.09		mg/Kg OC	0.09	220	8270D/3540C	CO	MSQS_170227	a	
91-57-6	2-METHYLNAPHTHALENE	< 0.09		mg/Kg OC	0.09	38	8270D/3540C	CO	MSQS_170227	a	
	HIGH MOLECULAR WT PAH	< 0.08		mg/Kg OC	0.08	960	8270D/3540C	CO	MSQS_170227	a	
206-44-0	FLUORANTHENE	< 0.10		mg/Kg OC	0.10	160	8270D/3540C	CO	MSQS_170227	a	
129-00-0	PYRENE	< 0.10		mg/Kg OC	0.10	1000	8270D/3540C	CO	MSQS_170227	a	
56-55-3	BENZ[<i>a</i>]ANTHRACENE	< 0.10		mg/Kg OC	0.10	110	8270D/3540C	CO	MSQS_170227	a	
218-01-9	CHRYSENE	< 0.10		mg/Kg OC	0.10	110	8270D/3540C	CO	MSQS_170227	a	
	TOTAL BENZOFLUORANTHENES	< 0.10		mg/Kg OC	0.10	230	8270D/3540C	CO	MSQS_170227	a	

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CAS	Chemical Parameter	RESULT	Flag	Units	PQL	Maximum Allowance	Method	Analyst	Batch	Lab	Comment
50-32-8	BENZO[A]PYRENE	< 0.10		mg/Kg OC	0.10	99	8270D/3540C	CO	MSQS_170227	a	
193-39-5	INDENO[1,2,3,C,D]PYRENE	< 0.10		mg/Kg OC	0.10	34	8270D/3540C	CO	MSQS_170227	a	
53-70-3	DIBENZO[A,H]ANTHRACENE	< 0.10		mg/Kg OC	0.10	12	8270D/3540C	CO	MSQS_170227	a	
191-24-2	BENZO[G,H,I]PERYLENE	< 0.10		mg/Kg OC	0.10	31	8270D/3540C	CO	MSQS_170227	a	
Base/Neutral Extractables											
95-50-1	1,2 - DICHLOROBENZENE	< 0.05		mg/Kg OC	0.05	2.3	8270D/3540C	CO	MSQS_170227	a	
106-46-7	1,4 - DICHLOROBENZENE	< 0.05		mg/Kg OC	0.05	3.1	8270D/3540C	CO	MSQS_170227	a	
120-82-1	1,2,4-TRICHLOROBENZENE	< 0.04		mg/Kg OC	0.04	0.81	8270D/3540C	CO	MSQS_170227	a	
118-74-1	HEXACHLOROBENZENE	< 0.03		mg/Kg OC	0.03	0.38	8270D/3540C	CO	MSQS_170227	a	
131-11-3	DIMETHYL PHTHALATE	< 0.31		mg/Kg OC	0.31	53	8270D/3540C	CO	MSQS_170227	a	
84-66-2	DIETHYL PHTHALATE	< 0.33		mg/Kg OC	0.33	61	8270D/3540C	CO	MSQS_170227	a	
84-74-2	DI-N-BUTYL PHTHALATE	< 0.69		mg/Kg OC	0.69	220	8270D/3540C	CO	MSQS_170227	a	
85-68-7	BENZYL BUTYL PHTHALATE	< 0.37		mg/Kg OC	0.37	4.9	8270D/3540C	CO	MSQS_170227	a	
117-81-7	DI(2-ETHYLHEXYL)PHTHALATE	< 0.37		mg/Kg OC	0.37	47	8270D/3540C	CO	MSQS_170227	a	
117-84-0	DI-N-OCTYL PHTHALATE	< 0.37		mg/Kg OC	0.37	58	8270D/3540C	CO	MSQS_170227	a	
132-64-9	DIBENZOFURAN	< 0.09		mg/Kg OC	0.09	15	8270D/3540C	CO	MSQS_170227	a	
87-68-3	HEXACHLOROBUTADIENE	< 0.02		mg/Kg OC	0.02	3.9	8270D/3540C	CO	MSQS_170227	a	
55-18-5	N-NITROSODIPHENYLAMINE	< 0.07		mg/Kg OC	0.07	11	8270D/3540C	CO	MSQS_170227	a	
1336-36-3	PCBS (Total Aroclors)	< 0.2		mg/Kg OC	0.2	12	8082/3540C	CO	8082_S170227		
Acid Extractables											
108-95-2	PHENOL	< 50		ug/Kg	50	420	8270D/3540C	CO	MSQS_170227	a	
95-48-7	2-METHYLPHENOL (o-CRESOL)	< 50		ug/Kg	50	63	8270D/3540C	CO	MSQS_170227	a	
106-44-5	4-METHYLPHENOL (p-CRESOL)	< 50		ug/Kg	50	670	8270D/3540C	CO	MSQS_170227	a	
105-67-9	2,4-DIMETHYLPHENOL	< 25		ug/Kg	25	29	8270D/3540C	CO	MSQS_170227	a	
87-86-5	PENTACHLOROPHENOL	< 50		ug/Kg	50	360	8270D/3540C	CO	MSQS_170227	a	
100-51-6	BENZYL ALCOHOL	< 50		ug/Kg	50	57	8270D/3540C	CO	MSQS_170227	a	
65-85-0	BENZOIC ACID	< 500		ug/Kg	500	650	8270D/3540C	CO	MSQS_170227	a	

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Corvallis, OR	Microbiology (d)	540 SW Third Street	Corvallis, OR 97333	541.753.4946

WSDOE Lab C567

Marine Sediment Quality Standards Chemical Criteria WAC 173-204-320

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Client Name: Aspect Consulting, LLC
401 2nd Ave S Suite 201
Seattle, WA 98104

Reference Number: **17-03594**
Project: LSE

Lab Number: 08534
Field ID: AB-10-5-10
Sample Description: AB-10-5-10
Matrix: Soil
Sample Date: 2/17/17

Report Date: 3/21/17
Date Analyzed: 3/2/17
Approved by: anp,bj,ljh,pdm
Authorized by:


Bryce Jensen
Chief Inorganic Chemist

CAS	Chemical Parameter	RESULT	Flag	Units	PQL	Maximum Allowance	Method	Analyst	Batch	Lab	Comment
Metals											
7440-38-2	ARSENIC	< 0.91		mg/Kg	0.91	57	6010B/3051	ANP	6010B_170302A	a	
7440-43-9	CADMIUM	< 0.91		mg/Kg	0.91	5.1	6010B/3051	ANP	6010B_170302A	a	
7440-47-3	CHROMIUM	31.0		mg/Kg	0.91	260	6010B/3051	ANP	6010B_170302A	a	
7440-50-8	COPPER	23.2		mg/Kg	0.91	390	6010B/3051	ANP	6010B_170302A	a	
7439-92-1	LEAD	1.57		mg/Kg	0.91	450	6010B/3051	ANP	6010B_170302A	a	
7439-97-6	MERCURY	0.0354		mg/Kg	0.0083	0.41	7471A	RHF	7471A_170224	a	
7440-22-4	SILVER	< 0.91		mg/Kg	0.91	6.1	6010B/3051	ANP	6010B_170302A	a	
7440-66-6	ZINC	26.9		mg/Kg	0.91	410	6010B/3051	ANP	6010B_170302A	a	
Polynuclear Aromatic Hydrocarbons (PAHs)											
	LOW MOLECULAR WT PAH	< 0.09		mg/Kg OC*	0.09	370	8270D/3540C	CO	MSQS_170227	a	
91-20-3	NAPHTHALENE	< 0.09		mg/Kg OC	0.09	99	8270D/3540C	CO	MSQS_170227	a	
208-96-8	ACENAPHTHYLENE	< 0.10		mg/Kg OC	0.10	66	8270D/3540C	CO	MSQS_170227	a	
83-32-9	ACENAPHTHENE	< 0.09		mg/Kg OC	0.09	16	8270D/3540C	CO	MSQS_170227	a	
86-73-7	FLUORENE	< 0.10		mg/Kg OC	0.10	23	8270D/3540C	CO	MSQS_170227	a	
85-01-8	PHENANTHRENE	< 0.09		mg/Kg OC	0.09	100	8270D/3540C	CO	MSQS_170227	a	
120-12-7	ANTHRACENE	< 0.09		mg/Kg OC	0.09	220	8270D/3540C	CO	MSQS_170227	a	
91-57-6	2-METHYLNAPHTHALENE	< 0.09		mg/Kg OC	0.09	38	8270D/3540C	CO	MSQS_170227	a	
	HIGH MOLECULAR WT PAH	< 0.08		mg/Kg OC	0.08	960	8270D/3540C	CO	MSQS_170227	a	
206-44-0	FLUORANTHENE	< 0.10		mg/Kg OC	0.10	160	8270D/3540C	CO	MSQS_170227	a	
129-00-0	PYRENE	< 0.10		mg/Kg OC	0.10	1000	8270D/3540C	CO	MSQS_170227	a	
56-55-3	BENZ[<i>a</i>]ANTHRACENE	< 0.10		mg/Kg OC	0.10	110	8270D/3540C	CO	MSQS_170227	a	
218-01-9	CHRYSENE	< 0.10		mg/Kg OC	0.10	110	8270D/3540C	CO	MSQS_170227	a	
	TOTAL BENZOFLUORANTHENES	< 0.10		mg/Kg OC	0.10	230	8270D/3540C	CO	MSQS_170227	a	

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193-39-5	INDENO[1,2,3,C,D]PYRENE	< 0.10		mg/Kg OC	0.10	34	8270D/3540C	CO	MSQS_170227	a	
53-70-3	DIBENZO[A,H]ANTHRACENE	< 0.10		mg/Kg OC	0.10	12	8270D/3540C	CO	MSQS_170227	a	
191-24-2	BENZO[G,H,I]PERYLENE	< 0.10		mg/Kg OC	0.10	31	8270D/3540C	CO	MSQS_170227	a	
Base/Neutral Extractables											
95-50-1	1,2 - DICHLOROBENZENE	< 0.05		mg/Kg OC	0.05	2.3	8270D/3540C	CO	MSQS_170227	a	
106-46-7	1,4 - DICHLOROBENZENE	< 0.05		mg/Kg OC	0.05	3.1	8270D/3540C	CO	MSQS_170227	a	
120-82-1	1,2,4-TRICHLOROBENZENE	< 0.04		mg/Kg OC	0.04	0.81	8270D/3540C	CO	MSQS_170227	a	
118-74-1	HEXACHLOROBENZENE	< 0.03		mg/Kg OC	0.03	0.38	8270D/3540C	CO	MSQS_170227	a	
131-11-3	DIMETHYL PHTHALATE	< 0.31		mg/Kg OC	0.31	53	8270D/3540C	CO	MSQS_170227	a	
84-66-2	DIETHYL PHTHALATE	< 0.33		mg/Kg OC	0.33	61	8270D/3540C	CO	MSQS_170227	a	
84-74-2	DI-N-BUTYL PHTHALATE	< 0.69		mg/Kg OC	0.69	220	8270D/3540C	CO	MSQS_170227	a	
85-68-7	BENZYL BUTYL PHTHALATE	< 0.37		mg/Kg OC	0.37	4.9	8270D/3540C	CO	MSQS_170227	a	
117-81-7	DI(2-ETHYLHEXYL)PHTHALATE	< 0.37		mg/Kg OC	0.37	47	8270D/3540C	CO	MSQS_170227	a	
117-84-0	DI-N-OCTYL PHTHALATE	< 0.37		mg/Kg OC	0.37	58	8270D/3540C	CO	MSQS_170227	a	
132-64-9	DIBENZOFURAN	< 0.09		mg/Kg OC	0.09	15	8270D/3540C	CO	MSQS_170227	a	
87-68-3	HEXACHLOROBUTADIENE	< 0.02		mg/Kg OC	0.02	3.9	8270D/3540C	CO	MSQS_170227	a	
55-18-5	N-NITROSODIPHENYLAMINE	< 0.07		mg/Kg OC	0.07	11	8270D/3540C	CO	MSQS_170227	a	
1336-36-3	PCBS (Total Aroclors)	< 0.2		mg/Kg OC	0.2	12	8082/3540C	CO	8082_S170227	a	
Acid Extractables											
108-95-2	PHENOL	< 50		ug/Kg	50	420	8270D/3540C	CO	MSQS_170227	a	
95-48-7	2-METHYLPHENOL (o-CRESOL)	< 50		ug/Kg	50	63	8270D/3540C	CO	MSQS_170227	a	
106-44-5	4-METHYLPHENOL (p-CRESOL)	< 50		ug/Kg	50	670	8270D/3540C	CO	MSQS_170227	a	
105-67-9	2,4-DIMETHYLPHENOL	< 25		ug/Kg	25	29	8270D/3540C	CO	MSQS_170227	a	
87-86-5	PENTACHLOROPHENOL	< 50		ug/Kg	50	360	8270D/3540C	CO	MSQS_170227	a	
100-51-6	BENZYL ALCOHOL	< 50		ug/Kg	50	57	8270D/3540C	CO	MSQS_170227	a	
65-85-0	BENZOIC ACID	< 500		ug/Kg	500	650	8270D/3540C	CO	MSQS_170227	a	

Notes:

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Units - mg/Kg is parts per million, mg/Kg OC is parts per million in terms of Organic Carbon, ug/Kg is parts per billion.

Practical Quantitation Limit or PQL is the lowest level that can be achieved within specified limits of precision and accuracy during routine laboratory operating conditions.

Maximum Allowable is taken from Table 1 "Marine Sediment Quality Standards Chemical Criteria" in WAC 173-204-320.

Method - The value listed is the Analytical Method along with the Analytical Prep Method separated by a forward slash.

Batch - The analytical batch number identifies samples that were analyzed together in a group. It is also associated with all quality control processed in that sample group.



Burlington, WA	Corporate Laboratory (a)	1620 S Walnut St	Burlington, WA 98233	800.755.9295 • 360.757.1400
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Portland, OR	Microbiology/Chemistry (c)	9150 SW Pioneer Ct Ste W	Wilsonville, OR 97070	503.682.7802
Corvallis, OR	Microbiology (d)	540 SW Third Street	Corvallis, OR 97333	541.753.4946

WSDOE Lab C567

Marine Sediment Quality Standards Chemical Criteria WAC 173-204-320

Page 1 of 2

Client Name: Aspect Consulting, LLC
401 2nd Ave S Suite 201
Seattle, WA 98104

Reference Number: **17-03594**
Project: LSE

Lab Number: 08533
Field ID: AB-09-8-9
Sample Description: AB-09-8-9
Matrix: Soil
Sample Date: 2/17/17

Report Date: 3/21/17
Date Analyzed: 3/2/17
Approved by: anp,bj,ljh,pdm
Authorized by:


Bryce Jensen
Chief Inorganic Chemist

CAS	Chemical Parameter	RESULT	Flag	Units	PQL	Maximum Allowance	Method	Analyst	Batch	Lab	Comment
Metals											
7440-38-2	ARSENIC	0.65		mg/Kg	0.33	57	6010B/3051	ANP	6010B_170302A	a	
7440-43-9	CADMIUM	< 0.33		mg/Kg	0.33	5.1	6010B/3051	ANP	6010B_170302A	a	
7440-47-3	CHROMIUM	119		mg/Kg	0.33	260	6010B/3051	ANP	6010B_170302A	a	
7440-50-8	COPPER	20.6		mg/Kg	0.33	390	6010B/3051	ANP	6010B_170302A	a	
7439-92-1	LEAD	0.64		mg/Kg	0.33	450	6010B/3051	ANP	6010B_170302A	a	
7439-97-6	MERCURY	0.0263		mg/Kg	0.0082	0.41	7471A	RHF	7471A_170224	a	
7440-22-4	SILVER	< 0.33		mg/Kg	0.33	6.1	6010B/3051	ANP	6010B_170302A	a	
7440-66-6	ZINC	20.2		mg/Kg	0.33	410	6010B/3051	ANP	6010B_170302A	a	
Polynuclear Aromatic Hydrocarbons (PAHs)											
	LOW MOLECULAR WT PAH	< 0.09		mg/Kg OC*	0.09	370	8270D/3540C	CO	MSQS_170227	a	
91-20-3	NAPHTHALENE	< 0.09		mg/Kg OC	0.09	99	8270D/3540C	CO	MSQS_170227	a	
208-96-8	ACENAPHTHYLENE	< 0.10		mg/Kg OC	0.10	66	8270D/3540C	CO	MSQS_170227	a	
83-32-9	ACENAPHTHENE	< 0.09		mg/Kg OC	0.09	16	8270D/3540C	CO	MSQS_170227	a	
86-73-7	FLUORENE	< 0.10		mg/Kg OC	0.10	23	8270D/3540C	CO	MSQS_170227	a	
85-01-8	PHENANTHRENE	< 0.09		mg/Kg OC	0.09	100	8270D/3540C	CO	MSQS_170227	a	
120-12-7	ANTHRACENE	< 0.09		mg/Kg OC	0.09	220	8270D/3540C	CO	MSQS_170227	a	
91-57-6	2-METHYLNAPHTHALENE	< 0.09		mg/Kg OC	0.09	38	8270D/3540C	CO	MSQS_170227	a	
	HIGH MOLECULAR WT PAH	< 0.08		mg/Kg OC	0.08	960	8270D/3540C	CO	MSQS_170227	a	
206-44-0	FLUORANTHENE	< 0.10		mg/Kg OC	0.10	160	8270D/3540C	CO	MSQS_170227	a	
129-00-0	PYRENE	< 0.10		mg/Kg OC	0.10	1000	8270D/3540C	CO	MSQS_170227	a	
56-55-3	BENZ[<i>a</i>]ANTHRACENE	< 0.10		mg/Kg OC	0.10	110	8270D/3540C	CO	MSQS_170227	a	
218-01-9	CHRYSENE	< 0.10		mg/Kg OC	0.10	110	8270D/3540C	CO	MSQS_170227	a	
	TOTAL BENZOFLUORANTHENES	< 0.10		mg/Kg OC	0.10	230	8270D/3540C	CO	MSQS_170227	a	

Notes:

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If you have any questions concerning this report contact us at the above phone number.

Form: cSediment.rpt

CAS	Chemical Parameter	RESULT	Flag	Units	PQL	Maximum Allowance	Method	Analyst	Batch	Lab	Comment
50-32-8	BENZO[A]PYRENE	< 0.10		mg/Kg OC	0.10	99	8270D/3540C	CO	MSQS_170227	a	
193-39-5	INDENO[1,2,3,C,D]PYRENE	< 0.10		mg/Kg OC	0.10	34	8270D/3540C	CO	MSQS_170227	a	
53-70-3	DIBENZO[A,H]ANTHRACENE	< 0.10		mg/Kg OC	0.10	12	8270D/3540C	CO	MSQS_170227	a	
191-24-2	BENZO[G,H,I]PERYLENE	< 0.10		mg/Kg OC	0.10	31	8270D/3540C	CO	MSQS_170227	a	
Base/Neutral Extractables											
95-50-1	1,2 - DICHLOROBENZENE	< 0.05		mg/Kg OC	0.05	2.3	8270D/3540C	CO	MSQS_170227	a	
106-46-7	1,4 - DICHLOROBENZENE	< 0.05		mg/Kg OC	0.05	3.1	8270D/3540C	CO	MSQS_170227	a	
120-82-1	1,2,4-TRICHLOROBENZENE	< 0.04		mg/Kg OC	0.04	0.81	8270D/3540C	CO	MSQS_170227	a	
118-74-1	HEXACHLOROBENZENE	< 0.03		mg/Kg OC	0.03	0.38	8270D/3540C	CO	MSQS_170227	a	
131-11-3	DIMETHYL PHTHALATE	< 0.31		mg/Kg OC	0.31	53	8270D/3540C	CO	MSQS_170227	a	
84-66-2	DIETHYL PHTHALATE	< 0.33		mg/Kg OC	0.33	61	8270D/3540C	CO	MSQS_170227	a	
84-74-2	DI-N-BUTYL PHTHALATE	< 0.69		mg/Kg OC	0.69	220	8270D/3540C	CO	MSQS_170227	a	
85-68-7	BENZYL BUTYL PHTHALATE	< 0.37		mg/Kg OC	0.37	4.9	8270D/3540C	CO	MSQS_170227	a	
117-81-7	DI(2-ETHYLHEXYL)PHTHALATE	< 0.37		mg/Kg OC	0.37	47	8270D/3540C	CO	MSQS_170227	a	
117-84-0	DI-N-OCTYL PHTHALATE	< 0.37		mg/Kg OC	0.37	58	8270D/3540C	CO	MSQS_170227	a	
132-64-9	DIBENZOFURAN	< 0.09		mg/Kg OC	0.09	15	8270D/3540C	CO	MSQS_170227	a	
87-68-3	HEXACHLOROBUTADIENE	< 0.02		mg/Kg OC	0.02	3.9	8270D/3540C	CO	MSQS_170227	a	
55-18-5	N-NITROSODIPHENYLAMINE	< 0.07		mg/Kg OC	0.07	11	8270D/3540C	CO	MSQS_170227	a	
1336-36-3	PCBS (Total Aroclors)	< 0.2		mg/Kg OC	0.2	12	8082/3540C	CO	8082_S170227		
Acid Extractables											
108-95-2	PHENOL	< 50		ug/Kg	50	420	8270D/3540C	CO	MSQS_170227	a	
95-48-7	2-METHYLPHENOL (o-CRESOL)	< 50		ug/Kg	50	63	8270D/3540C	CO	MSQS_170227	a	
106-44-5	4-METHYLPHENOL (p-CRESOL)	< 50		ug/Kg	50	670	8270D/3540C	CO	MSQS_170227	a	
105-67-9	2,4-DIMETHYLPHENOL	< 25		ug/Kg	25	29	8270D/3540C	CO	MSQS_170227	a	
87-86-5	PENTACHLOROPHENOL	< 50		ug/Kg	50	360	8270D/3540C	CO	MSQS_170227	a	
100-51-6	BENZYL ALCOHOL	< 50		ug/Kg	50	57	8270D/3540C	CO	MSQS_170227	a	
65-85-0	BENZOIC ACID	< 500		ug/Kg	500	650	8270D/3540C	CO	MSQS_170227	a	

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Maximum Allowable is taken from Table 1 "Marine Sediment Quality Standards Chemical Criteria" in WAC 173-204-320.

Method - The value listed is the Analytical Method along with the Analytical Prep Method separated by a forward slash.

Batch - The analytical batch number identifies samples that were analyzed together in a group. It is also associated with all quality control processed in that sample group.



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WSDOE Lab C567

Marine Sediment Quality Standards Chemical Criteria WAC 173-204-320

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Client Name: Aspect Consulting, LLC
401 2nd Ave S Suite 201
Seattle, WA 98104

Reference Number: **17-03594**
Project: LSE

Lab Number: 08532
Field ID: AB-09-0-3
Sample Description: AB-09-0-3
Matrix: Soil
Sample Date: 2/17/17

Report Date: 3/21/17
Date Analyzed: 3/2/17
Approved by: anp,bj,ljh,pdm
Authorized by:


Bryce Jensen
Chief Inorganic Chemist

CAS	Chemical Parameter	RESULT	Flag	Units	PQL	Maximum Allowance	Method	Analyst	Batch	Lab	Comment
Metals											
7440-38-2	ARSENIC	2.24		mg/Kg	1.00	57	6010B/3051	ANP	6010B_170302A	a	
7440-43-9	CADMIUM	< 1.00		mg/Kg	1.00	5.1	6010B/3051	ANP	6010B_170302A	a	
7440-47-3	CHROMIUM	23.8		mg/Kg	1.00	260	6010B/3051	ANP	6010B_170302A	a	
7440-50-8	COPPER	18.1		mg/Kg	1.00	390	6010B/3051	ANP	6010B_170302A	a	
7439-92-1	LEAD	10.1		mg/Kg	1.00	450	6010B/3051	ANP	6010B_170302A	a	
7439-97-6	MERCURY	0.0186		mg/Kg	0.0083	0.41	7471A	RHF	7471A_170224	a	
7440-22-4	SILVER	< 1.00		mg/Kg	1.00	6.1	6010B/3051	ANP	6010B_170302A	a	
7440-66-6	ZINC	41.6		mg/Kg	1.00	410	6010B/3051	ANP	6010B_170302A	a	
Polynuclear Aromatic Hydrocarbons (PAHs)											
	LOW MOLECULAR WT PAH	0.12		mg/Kg OC*	0.09	370	8270D/3540C	CO	MSQS_170227	a	
91-20-3	NAPHTHALENE	< 0.09		mg/Kg OC	0.09	99	8270D/3540C	CO	MSQS_170227	a	
208-96-8	ACENAPHTHYLENE	< 0.10		mg/Kg OC	0.10	66	8270D/3540C	CO	MSQS_170227	a	
83-32-9	ACENAPHTHENE	< 0.09		mg/Kg OC	0.09	16	8270D/3540C	CO	MSQS_170227	a	
86-73-7	FLUORENE	< 0.10		mg/Kg OC	0.10	23	8270D/3540C	CO	MSQS_170227	a	
85-01-8	PHENANTHRENE	0.12		mg/Kg OC	0.09	100	8270D/3540C	CO	MSQS_170227	a	
120-12-7	ANTHRACENE	< 0.09		mg/Kg OC	0.09	220	8270D/3540C	CO	MSQS_170227	a	
91-57-6	2-METHYLNAPHTHALENE	< 0.09		mg/Kg OC	0.09	38	8270D/3540C	CO	MSQS_170227	a	
	HIGH MOLECULAR WT PAH	0.71		mg/Kg OC	0.08	960	8270D/3540C	CO	MSQS_170227	a	
206-44-0	FLUORANTHENE	0.24		mg/Kg OC	0.10	160	8270D/3540C	CO	MSQS_170227	a	
129-00-0	PYRENE	0.20		mg/Kg OC	0.10	1000	8270D/3540C	CO	MSQS_170227	a	
56-55-3	BENZ[<i>a</i>]ANTHRACENE	< 0.10		mg/Kg OC	0.10	110	8270D/3540C	CO	MSQS_170227	a	
218-01-9	CHRYSENE	0.27		mg/Kg OC	0.10	110	8270D/3540C	CO	MSQS_170227	a	
	TOTAL BENZOFLUORANTHENES	< 0.10		mg/Kg OC	0.10	230	8270D/3540C	CO	MSQS_170227	a	

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CAS	Chemical Parameter	RESULT	Flag	Units	PQL	Maximum Allowance	Method	Analyst	Batch	Lab	Comment
50-32-8	BENZO[A]PYRENE	< 0.10		mg/Kg OC	0.10	99	8270D/3540C	CO	MSQS_170227	a	
193-39-5	INDENO[1,2,3,C,D]PYRENE	< 0.10		mg/Kg OC	0.10	34	8270D/3540C	CO	MSQS_170227	a	
53-70-3	DIBENZO[A,H]ANTHRACENE	< 0.10		mg/Kg OC	0.10	12	8270D/3540C	CO	MSQS_170227	a	
191-24-2	BENZO[G,H,I]PERYLENE	< 0.10		mg/Kg OC	0.10	31	8270D/3540C	CO	MSQS_170227	a	
Base/Neutral Extractables											
95-50-1	1,2 - DICHLOROBENZENE	< 0.05		mg/Kg OC	0.05	2.3	8270D/3540C	CO	MSQS_170227	a	
106-46-7	1,4 - DICHLOROBENZENE	< 0.05		mg/Kg OC	0.05	3.1	8270D/3540C	CO	MSQS_170227	a	
120-82-1	1,2,4-TRICHLOROBENZENE	< 0.04		mg/Kg OC	0.04	0.81	8270D/3540C	CO	MSQS_170227	a	
118-74-1	HEXACHLOROBENZENE	< 0.03		mg/Kg OC	0.03	0.38	8270D/3540C	CO	MSQS_170227	a	
131-11-3	DIMETHYL PHTHALATE	< 0.31		mg/Kg OC	0.31	53	8270D/3540C	CO	MSQS_170227	a	
84-66-2	DIETHYL PHTHALATE	< 0.33		mg/Kg OC	0.33	61	8270D/3540C	CO	MSQS_170227	a	
84-74-2	DI-N-BUTYL PHTHALATE	< 0.69		mg/Kg OC	0.69	220	8270D/3540C	CO	MSQS_170227	a	
85-68-7	BENZYL BUTYL PHTHALATE	< 0.37		mg/Kg OC	0.37	4.9	8270D/3540C	CO	MSQS_170227	a	
117-81-7	DI(2-ETHYLHEXYL)PHTHALATE	< 0.37		mg/Kg OC	0.37	47	8270D/3540C	CO	MSQS_170227	a	
117-84-0	DI-N-OCTYL PHTHALATE	< 0.37		mg/Kg OC	0.37	58	8270D/3540C	CO	MSQS_170227	a	
132-64-9	DIBENZOFURAN	< 0.09		mg/Kg OC	0.09	15	8270D/3540C	CO	MSQS_170227	a	
87-68-3	HEXACHLOROBUTADIENE	< 0.02		mg/Kg OC	0.02	3.9	8270D/3540C	CO	MSQS_170227	a	
55-18-5	N-NITROSODIPHENYLAMINE	< 0.07		mg/Kg OC	0.07	11	8270D/3540C	CO	MSQS_170227	a	
1336-36-3	PCBS (Total Aroclors)	< 0.2		mg/Kg OC	0.2	12	8082/3540C	CO	8082_S170227		
Acid Extractables											
108-95-2	PHENOL	< 50		ug/Kg	50	420	8270D/3540C	CO	MSQS_170227	a	
95-48-7	2-METHYLPHENOL (o-CRESOL)	< 50		ug/Kg	50	63	8270D/3540C	CO	MSQS_170227	a	
106-44-5	4-METHYLPHENOL (p-CRESOL)	< 50		ug/Kg	50	670	8270D/3540C	CO	MSQS_170227	a	
105-67-9	2,4-DIMETHYLPHENOL	< 25		ug/Kg	25	29	8270D/3540C	CO	MSQS_170227	a	
87-86-5	PENTACHLOROPHENOL	< 50		ug/Kg	50	360	8270D/3540C	CO	MSQS_170227	a	
100-51-6	BENZYL ALCOHOL	< 50		ug/Kg	50	57	8270D/3540C	CO	MSQS_170227	a	
65-85-0	BENZOIC ACID	< 500		ug/Kg	500	650	8270D/3540C	CO	MSQS_170227	a	

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Corvallis, OR	Microbiology (d)	540 SW Third Street	Corvallis, OR 97333	541.753.4946

WSDOE Lab C567

Marine Sediment Quality Standards Chemical Criteria WAC 173-204-320

Page 1 of 2

Client Name: Aspect Consulting, LLC
401 2nd Ave S Suite 201
Seattle, WA 98104

Reference Number: **17-03594**
Project: LSE

Lab Number: 08531
Field ID: AB-08-10-13
Sample Description: AB-08-10-13
Matrix: Soil
Sample Date: 2/17/17

Report Date: 3/21/17
Date Analyzed: 3/1/17
Approved by: anp,bj,ljh,pdm
Authorized by:


Bryce Jensen
Chief Inorganic Chemist

CAS	Chemical Parameter	RESULT	Flag	Units	PQL	Maximum Allowance	Method	Analyst	Batch	Lab	Comment
Metals											
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7440-43-9	CADMIUM	< 1.05		mg/Kg	1.05	5.1	6010B/3051	ANP	6010B_170228a	a	
7440-47-3	CHROMIUM	22.6		mg/Kg	1.05	260	6010B/3051	ANP	6010B_170228a	a	
7440-50-8	COPPER	26.1		mg/Kg	1.05	390	6010B/3051	ANP	6010B_170228a	a	
7439-92-1	LEAD	1.42		mg/Kg	1.05	450	6010B/3051	ANP	6010B_170228a	a	
7439-97-6	MERCURY	0.0467		mg/Kg	0.0081	0.41	7471A	RHF	7471A_170224	a	
7440-22-4	SILVER	< 1.05		mg/Kg	1.05	6.1	6010B/3051	ANP	6010B_170228a	a	
7440-66-6	ZINC	60.9		mg/Kg	1.05	410	6010B/3051	ANP	6010B_170228a	a	
Polynuclear Aromatic Hydrocarbons (PAHs)											
	LOW MOLECULAR WT PAH	< 0.09		mg/Kg OC*	0.09	370	8270D/3540C	CO	MSQS_170227	a	
91-20-3	NAPHTHALENE	< 0.09		mg/Kg OC	0.09	99	8270D/3540C	CO	MSQS_170227	a	
208-96-8	ACENAPHTHYLENE	< 0.10		mg/Kg OC	0.10	66	8270D/3540C	CO	MSQS_170227	a	
83-32-9	ACENAPHTHENE	< 0.09		mg/Kg OC	0.09	16	8270D/3540C	CO	MSQS_170227	a	
86-73-7	FLUORENE	< 0.10		mg/Kg OC	0.10	23	8270D/3540C	CO	MSQS_170227	a	
85-01-8	PHENANTHRENE	< 0.09		mg/Kg OC	0.09	100	8270D/3540C	CO	MSQS_170227	a	
120-12-7	ANTHRACENE	< 0.09		mg/Kg OC	0.09	220	8270D/3540C	CO	MSQS_170227	a	
91-57-6	2-METHYLNAPHTHALENE	< 0.09		mg/Kg OC	0.09	38	8270D/3540C	CO	MSQS_170227	a	
	HIGH MOLECULAR WT PAH	< 0.08		mg/Kg OC	0.08	960	8270D/3540C	CO	MSQS_170227	a	
206-44-0	FLUORANTHENE	< 0.10		mg/Kg OC	0.10	160	8270D/3540C	CO	MSQS_170227	a	
129-00-0	PYRENE	< 0.10		mg/Kg OC	0.10	1000	8270D/3540C	CO	MSQS_170227	a	
56-55-3	BENZ[<i>a</i>]ANTHRACENE	< 0.10		mg/Kg OC	0.10	110	8270D/3540C	CO	MSQS_170227	a	
218-01-9	CHRYSENE	< 0.10		mg/Kg OC	0.10	110	8270D/3540C	CO	MSQS_170227	a	
	TOTAL BENZOFLUORANTHENES	< 0.10		mg/Kg OC	0.10	230	8270D/3540C	CO	MSQS_170227	a	

Notes:

Flags are data qualifiers. If there are data qualifiers on your report definitions can be found on an accompanying sheet.

Units - mg/Kg is parts per million, mg/Kg OC is parts per million in terms of Organic Carbon, ug/Kg is parts per billion.

Practical Quantitation Limit or PQL is the lowest level that can be achieved within specified limits of precision and accuracy during routine laboratory operating conditions.

Maximum Allowable is taken from Table 1 "Marine Sediment Quality Standards Chemical Criteria" in WAC 173-204-320.

Method - The value listed is the Analytical Method along with the Analytical Prep Method separated by a forward slash.

Batch - The analytical batch number identifies samples that were analyzed together in a group. It is also associated with all quality control processed in that sample group.

If you have any questions concerning this report contact us at the above phone number.

Form: cSediment.rpt

CAS	Chemical Parameter	RESULT	Flag	Units	PQL	Maximum Allowance	Method	Analyst	Batch	Lab	Comment
50-32-8	BENZO[A]PYRENE	< 0.10		mg/Kg OC	0.10	99	8270D/3540C	CO	MSQS_170227	a	
193-39-5	INDENO[1,2,3,C,D]PYRENE	< 0.10		mg/Kg OC	0.10	34	8270D/3540C	CO	MSQS_170227	a	
53-70-3	DIBENZO[A,H]ANTHRACENE	< 0.10		mg/Kg OC	0.10	12	8270D/3540C	CO	MSQS_170227	a	
191-24-2	BENZO[G,H,I]PERYLENE	< 0.10		mg/Kg OC	0.10	31	8270D/3540C	CO	MSQS_170227	a	
Base/Neutral Extractables											
95-50-1	1,2 - DICHLOROBENZENE	< 0.05		mg/Kg OC	0.05	2.3	8270D/3540C	CO	MSQS_170227	a	
106-46-7	1,4 - DICHLOROBENZENE	< 0.05		mg/Kg OC	0.05	3.1	8270D/3540C	CO	MSQS_170227	a	
120-82-1	1,2,4-TRICHLOROBENZENE	< 0.04		mg/Kg OC	0.04	0.81	8270D/3540C	CO	MSQS_170227	a	
118-74-1	HEXACHLOROBENZENE	< 0.03		mg/Kg OC	0.03	0.38	8270D/3540C	CO	MSQS_170227	a	
131-11-3	DIMETHYL PHTHALATE	< 0.31		mg/Kg OC	0.31	53	8270D/3540C	CO	MSQS_170227	a	
84-66-2	DIETHYL PHTHALATE	< 0.33		mg/Kg OC	0.33	61	8270D/3540C	CO	MSQS_170227	a	
84-74-2	DI-N-BUTYL PHTHALATE	< 0.69		mg/Kg OC	0.69	220	8270D/3540C	CO	MSQS_170227	a	
85-68-7	BENZYL BUTYL PHTHALATE	< 0.37		mg/Kg OC	0.37	4.9	8270D/3540C	CO	MSQS_170227	a	
117-81-7	DI(2-ETHYLHEXYL)PHTHALATE	< 0.37		mg/Kg OC	0.37	47	8270D/3540C	CO	MSQS_170227	a	
117-84-0	DI-N-OCTYL PHTHALATE	< 0.37		mg/Kg OC	0.37	58	8270D/3540C	CO	MSQS_170227	a	
132-64-9	DIBENZOFURAN	< 0.09		mg/Kg OC	0.09	15	8270D/3540C	CO	MSQS_170227	a	
87-68-3	HEXACHLOROBUTADIENE	< 0.02		mg/Kg OC	0.02	3.9	8270D/3540C	CO	MSQS_170227	a	
55-18-5	N-NITROSODIPHENYLAMINE	< 0.07		mg/Kg OC	0.07	11	8270D/3540C	CO	MSQS_170227	a	
1336-36-3	PCBS (Total Aroclors)	< 0.2		mg/Kg OC	0.2	12	8082/3540C	CO	8082_S170227		
Acid Extractables											
108-95-2	PHENOL	< 50		ug/Kg	50	420	8270D/3540C	CO	MSQS_170227	a	
95-48-7	2-METHYLPHENOL (o-CRESOL)	< 50		ug/Kg	50	63	8270D/3540C	CO	MSQS_170227	a	
106-44-5	4-METHYLPHENOL (p-CRESOL)	< 50		ug/Kg	50	670	8270D/3540C	CO	MSQS_170227	a	
105-67-9	2,4-DIMETHYLPHENOL	< 25		ug/Kg	25	29	8270D/3540C	CO	MSQS_170227	a	
87-86-5	PENTACHLOROPHENOL	< 50		ug/Kg	50	360	8270D/3540C	CO	MSQS_170227	a	
100-51-6	BENZYL ALCOHOL	< 50		ug/Kg	50	57	8270D/3540C	CO	MSQS_170227	a	
65-85-0	BENZOIC ACID	< 500		ug/Kg	500	650	8270D/3540C	CO	MSQS_170227	a	

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Units - mg/Kg is parts per million, mg/Kg OC is parts per million in terms of Organic Carbon, ug/Kg is parts per billion.

Practical Quantitation Limit or PQL is the lowest level that can be achieved within specified limits of precision and accuracy during routine laboratory operating conditions.

Maximum Allowable is taken from Table 1 "Marine Sediment Quality Standards Chemical Criteria" in WAC 173-204-320.

Method - The value listed is the Analytical Method along with the Analytical Prep Method separated by a forward slash.

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Burlington, WA	Corporate Laboratory (a)	1620 S Walnut St	Burlington, WA 98233	800.755.9295 • 360.757.1400
Bellingham, WA	Microbiology (b)	805 Orchard Dr Ste 4	Bellingham, WA 98225	360.715.1212
Portland, OR	Microbiology/Chemistry (c)	9150 SW Pioneer Ct Ste W	Wilsonville, OR 97070	503.682.7802
Corvallis, OR	Microbiology (d)	540 SW Third Street	Corvallis, OR 97333	541.753.4946

WSDOE Lab C567

Marine Sediment Quality Standards Chemical Criteria WAC 173-204-320

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Client Name: Aspect Consulting, LLC
401 2nd Ave S Suite 201
Seattle, WA 98104

Reference Number: **17-03594**
Project: LSE

Lab Number: 08530
Field ID: AB-08-5-7
Sample Description: AB-08-5-7
Matrix: Soil
Sample Date: 2/17/17

Report Date: 3/21/17
Date Analyzed: 3/1/17
Approved by: anp,bj,ljh,pdm
Authorized by:


Bryce Jensen
Chief Inorganic Chemist

CAS	Chemical Parameter	RESULT	Flag	Units	PQL	Maximum Allowance	Method	Analyst	Batch	Lab	Comment
Metals											
7440-38-2	ARSENIC	1.43		mg/Kg	0.94	57	6010B/3051	ANP	6010B_170228a	a	
7440-43-9	CADMIUM	< 0.94		mg/Kg	0.94	5.1	6010B/3051	ANP	6010B_170228a	a	
7440-47-3	CHROMIUM	27.1		mg/Kg	0.94	260	6010B/3051	ANP	6010B_170228a	a	
7440-50-8	COPPER	20.8		mg/Kg	0.94	390	6010B/3051	ANP	6010B_170228a	a	
7439-92-1	LEAD	1.23		mg/Kg	0.94	450	6010B/3051	ANP	6010B_170228a	a	
7439-97-6	MERCURY	0.0322		mg/Kg	0.0081	0.41	7471A	RHF	7471A_170224	a	
7440-22-4	SILVER	< 0.94		mg/Kg	0.94	6.1	6010B/3051	ANP	6010B_170228a	a	
7440-66-6	ZINC	33.9		mg/Kg	0.94	410	6010B/3051	ANP	6010B_170228a	a	
Polynuclear Aromatic Hydrocarbons (PAHs)											
	LOW MOLECULAR WT PAH	< 0.09		mg/Kg OC*	0.09	370	8270D/3540C	CO	MSQS_170221	a	
91-20-3	NAPHTHALENE	< 1.0	N1	mg/Kg OC	1.0	99	8270D/3540C	CO	MSQS_170221	a	
208-96-8	ACENAPHTHYLENE	< 0.10		mg/Kg OC	0.10	66	8270D/3540C	CO	MSQS_170221	a	
83-32-9	ACENAPHTHENE	< 0.09		mg/Kg OC	0.09	16	8270D/3540C	CO	MSQS_170221	a	
86-73-7	FLUORENE	< 0.10		mg/Kg OC	0.10	23	8270D/3540C	CO	MSQS_170221	a	
85-01-8	PHENANTHRENE	< 0.09		mg/Kg OC	0.09	100	8270D/3540C	CO	MSQS_170221	a	
120-12-7	ANTHRACENE	< 0.09		mg/Kg OC	0.09	220	8270D/3540C	CO	MSQS_170221	a	
91-57-6	2-METHYLNAPHTHALENE	< 1.0	N1	mg/Kg OC	1.0	38	8270D/3540C	CO	MSQS_170221	a	
	HIGH MOLECULAR WT PAH	< 0.08		mg/Kg OC	0.08	960	8270D/3540C	CO	MSQS_170221	a	
206-44-0	FLUORANTHENE	< 0.10		mg/Kg OC	0.10	160	8270D/3540C	CO	MSQS_170221	a	
129-00-0	PYRENE	< 0.10		mg/Kg OC	0.10	1000	8270D/3540C	CO	MSQS_170221	a	
56-55-3	BENZ[<i>a</i>]ANTHRACENE	< 0.10		mg/Kg OC	0.10	110	8270D/3540C	CO	MSQS_170221	a	
218-01-9	CHRYSENE	< 0.10		mg/Kg OC	0.10	110	8270D/3540C	CO	MSQS_170221	a	
	TOTAL BENZOFLUORANTHENES	< 0.10		mg/Kg OC	0.10	230	8270D/3540C	CO	MSQS_170221	a	

Notes:

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Maximum Allowable is taken from Table 1 "Marine Sediment Quality Standards Chemical Criteria" in WAC 173-204-320.
Method - The value listed is the Analytical Method along with the Analytical Prep Method separated by a forward slash.
Batch - The analytical batch number identifies samples that were analyzed together in a group. It is also associated with all quality control processed in that sample group.

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Form: cSediment.rpt

CAS	Chemical Parameter	RESULT	Flag	Units	PQL	Maximum Allowance	Method	Analyst	Batch	Lab	Comment
50-32-8	BENZO[A]PYRENE	< 0.10		mg/Kg OC	0.10	99	8270D/3540C	CO	MSQS_170221	a	
193-39-5	INDENO[1,2,3,C,D]PYRENE	< 0.10		mg/Kg OC	0.10	34	8270D/3540C	CO	MSQS_170221	a	
53-70-3	DIBENZO[A,H]ANTHRACENE	< 0.10		mg/Kg OC	0.10	12	8270D/3540C	CO	MSQS_170221	a	
191-24-2	BENZO[G,H,I]PERYLENE	< 0.10		mg/Kg OC	0.10	31	8270D/3540C	CO	MSQS_170221	a	
Base/Neutral Extractables											
95-50-1	1,2 - DICHLOROBENZENE	< 0.05		mg/Kg OC	0.05	2.3	8270D/3540C	CO	MSQS_170221	a	
106-46-7	1,4 - DICHLOROBENZENE	< 0.05		mg/Kg OC	0.05	3.1	8270D/3540C	CO	MSQS_170221	a	
120-82-1	1,2,4-TRICHLOROBENZENE	< 0.04		mg/Kg OC	0.04	0.81	8270D/3540C	CO	MSQS_170221	a	
118-74-1	HEXACHLOROBENZENE	< 0.03		mg/Kg OC	0.03	0.38	8270D/3540C	CO	MSQS_170221	a	
131-11-3	DIMETHYL PHTHALATE	< 0.31		mg/Kg OC	0.31	53	8270D/3540C	CO	MSQS_170221	a	
84-66-2	DIETHYL PHTHALATE	< 0.33		mg/Kg OC	0.33	61	8270D/3540C	CO	MSQS_170221	a	
84-74-2	DI-N-BUTYL PHTHALATE	< 0.69		mg/Kg OC	0.69	220	8270D/3540C	CO	MSQS_170221	a	
85-68-7	BENZYL BUTYL PHTHALATE	< 0.37		mg/Kg OC	0.37	4.9	8270D/3540C	CO	MSQS_170221	a	
117-81-7	DI(2-ETHYLHEXYL)PHTHALATE	< 0.37		mg/Kg OC	0.37	47	8270D/3540C	CO	MSQS_170221	a	
117-84-0	DI-N-OCTYL PHTHALATE	< 0.37		mg/Kg OC	0.37	58	8270D/3540C	CO	MSQS_170221	a	
132-64-9	DIBENZOFURAN	< 0.09		mg/Kg OC	0.09	15	8270D/3540C	CO	MSQS_170221	a	
87-68-3	HEXACHLOROBUTADIENE	< 0.02		mg/Kg OC	0.02	3.9	8270D/3540C	CO	MSQS_170221	a	
55-18-5	N-NITROSODIPHENYLAMINE	< 0.07		mg/Kg OC	0.07	11	8270D/3540C	CO	MSQS_170221	a	
1336-36-3	PCBS (Total Aroclors)	< 0.2		mg/Kg OC	0.2	12	8082/3540C	CO	8082_S170221		
Acid Extractables											
108-95-2	PHENOL	< 50		ug/Kg	50	420	8270D/3540C	CO	MSQS_170221	a	
95-48-7	2-METHYLPHENOL (o-CRESOL)	< 50		ug/Kg	50	63	8270D/3540C	CO	MSQS_170221	a	
106-44-5	4-METHYLPHENOL (p-CRESOL)	< 50		ug/Kg	50	670	8270D/3540C	CO	MSQS_170221	a	
105-67-9	2,4-DIMETHYLPHENOL	< 25		ug/Kg	25	29	8270D/3540C	CO	MSQS_170221	a	
87-86-5	PENTACHLOROPHENOL	< 50		ug/Kg	50	360	8270D/3540C	CO	MSQS_170221	a	
100-51-6	BENZYL ALCOHOL	< 50		ug/Kg	50	57	8270D/3540C	CO	MSQS_170221	a	
65-85-0	BENZOIC ACID	< 500		ug/Kg	500	650	8270D/3540C	CO	MSQS_170221	a	

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Method - The value listed is the Analytical Method along with the Analytical Prep Method separated by a forward slash.

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Portland, OR	Microbiology/Chemistry (c)	9150 SW Pioneer Ct Ste W	Wilsonville, OR 97070	503.682.7802
Corvallis, OR	Microbiology (d)	540 SW Third Street	Corvallis, OR 97333	541.753.4946

WSDOE Lab C567

Marine Sediment Quality Standards Chemical Criteria WAC 173-204-320

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Client Name: Aspect Consulting, LLC
401 2nd Ave S Suite 201
Seattle, WA 98104

Reference Number: **17-03594**
Project: LSE

Lab Number: 08529
Field ID: AB-07-9-10
Sample Description: AB-07-9-10
Matrix: Soil
Sample Date: 2/17/17

Report Date: 3/21/17
Date Analyzed: 3/1/17
Approved by: anp,bj,ljh,pdm
Authorized by:


Bryce Jensen
Chief Inorganic Chemist

CAS	Chemical Parameter	RESULT	Flag	Units	PQL	Maximum Allowance	Method	Analyst	Batch	Lab	Comment
Metals											
7440-38-2	ARSENIC	9.33		mg/Kg	0.97	57	6010B/3051	ANP	6010B_170228a	a	
7440-43-9	CADMIUM	< 0.97		mg/Kg	0.97	5.1	6010B/3051	ANP	6010B_170228a	a	
7440-47-3	CHROMIUM	42.8		mg/Kg	0.97	260	6010B/3051	ANP	6010B_170228a	a	
7440-50-8	COPPER	28.0		mg/Kg	0.97	390	6010B/3051	ANP	6010B_170228a	a	
7439-92-1	LEAD	< 0.97		mg/Kg	0.97	450	6010B/3051	ANP	6010B_170228a	a	
7439-97-6	MERCURY	0.0458		mg/Kg	0.0082	0.41	7471A	RHF	7471A_170224	a	
7440-22-4	SILVER	< 0.97		mg/Kg	0.97	6.1	6010B/3051	ANP	6010B_170228a	a	
7440-66-6	ZINC	22.3		mg/Kg	0.97	410	6010B/3051	ANP	6010B_170228a	a	
Polynuclear Aromatic Hydrocarbons (PAHs)											
	LOW MOLECULAR WT PAH	< 0.09		mg/Kg OC*	0.09	370	8270D/3540C	CO	MSQS_170221	a	
91-20-3	NAPHTHALENE	< 0.09		mg/Kg OC	0.09	99	8270D/3540C	CO	MSQS_170221	a	
208-96-8	ACENAPHTHYLENE	< 0.10		mg/Kg OC	0.10	66	8270D/3540C	CO	MSQS_170221	a	
83-32-9	ACENAPHTHENE	< 0.09		mg/Kg OC	0.09	16	8270D/3540C	CO	MSQS_170221	a	
86-73-7	FLUORENE	< 0.10		mg/Kg OC	0.10	23	8270D/3540C	CO	MSQS_170221	a	
85-01-8	PHENANTHRENE	< 0.09		mg/Kg OC	0.09	100	8270D/3540C	CO	MSQS_170221	a	
120-12-7	ANTHRACENE	< 0.09		mg/Kg OC	0.09	220	8270D/3540C	CO	MSQS_170221	a	
91-57-6	2-METHYLNAPHTHALENE	< 0.09		mg/Kg OC	0.09	38	8270D/3540C	CO	MSQS_170221	a	
	HIGH MOLECULAR WT PAH	< 0.08		mg/Kg OC	0.08	960	8270D/3540C	CO	MSQS_170221	a	
206-44-0	FLUORANTHENE	< 0.10		mg/Kg OC	0.10	160	8270D/3540C	CO	MSQS_170221	a	
129-00-0	PYRENE	< 0.10		mg/Kg OC	0.10	1000	8270D/3540C	CO	MSQS_170221	a	
56-55-3	BENZ[<i>a</i>]ANTHRACENE	< 0.10		mg/Kg OC	0.10	110	8270D/3540C	CO	MSQS_170221	a	
218-01-9	CHRYSENE	< 0.10		mg/Kg OC	0.10	110	8270D/3540C	CO	MSQS_170221	a	
	TOTAL BENZOFLUORANTHENES	< 0.10		mg/Kg OC	0.10	230	8270D/3540C	CO	MSQS_170221	a	

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Form: cSediment.rpt

CAS	Chemical Parameter	RESULT	Flag	Units	PQL	Maximum Allowance	Method	Analyst	Batch	Lab	Comment
50-32-8	BENZO[A]PYRENE	< 0.10		mg/Kg OC	0.10	99	8270D/3540C	CO	MSQS_170221	a	
193-39-5	INDENO[1,2,3,C,D]PYRENE	< 0.10		mg/Kg OC	0.10	34	8270D/3540C	CO	MSQS_170221	a	
53-70-3	DIBENZO[A,H]ANTHRACENE	< 0.10		mg/Kg OC	0.10	12	8270D/3540C	CO	MSQS_170221	a	
191-24-2	BENZO[G,H,I]PERYLENE	< 0.10		mg/Kg OC	0.10	31	8270D/3540C	CO	MSQS_170221	a	
Base/Neutral Extractables											
95-50-1	1,2 - DICHLOROBENZENE	< 0.05		mg/Kg OC	0.05	2.3	8270D/3540C	CO	MSQS_170221	a	
106-46-7	1,4 - DICHLOROBENZENE	< 0.05		mg/Kg OC	0.05	3.1	8270D/3540C	CO	MSQS_170221	a	
120-82-1	1,2,4-TRICHLOROBENZENE	< 0.04		mg/Kg OC	0.04	0.81	8270D/3540C	CO	MSQS_170221	a	
118-74-1	HEXACHLOROBENZENE	< 0.03		mg/Kg OC	0.03	0.38	8270D/3540C	CO	MSQS_170221	a	
131-11-3	DIMETHYL PHTHALATE	< 0.31		mg/Kg OC	0.31	53	8270D/3540C	CO	MSQS_170221	a	
84-66-2	DIETHYL PHTHALATE	< 0.33		mg/Kg OC	0.33	61	8270D/3540C	CO	MSQS_170221	a	
84-74-2	DI-N-BUTYL PHTHALATE	< 0.69		mg/Kg OC	0.69	220	8270D/3540C	CO	MSQS_170221	a	
85-68-7	BENZYL BUTYL PHTHALATE	< 0.37		mg/Kg OC	0.37	4.9	8270D/3540C	CO	MSQS_170221	a	
117-81-7	DI(2-ETHYLHEXYL)PHTHALATE	< 0.37		mg/Kg OC	0.37	47	8270D/3540C	CO	MSQS_170221	a	
117-84-0	DI-N-OCTYL PHTHALATE	< 0.37		mg/Kg OC	0.37	58	8270D/3540C	CO	MSQS_170221	a	
132-64-9	DIBENZOFURAN	< 0.09		mg/Kg OC	0.09	15	8270D/3540C	CO	MSQS_170221	a	
87-68-3	HEXACHLOROBUTADIENE	< 0.02		mg/Kg OC	0.02	3.9	8270D/3540C	CO	MSQS_170221	a	
55-18-5	N-NITROSODIPHENYLAMINE	< 0.07		mg/Kg OC	0.07	11	8270D/3540C	CO	MSQS_170221	a	
1336-36-3	PCBS (Total Aroclors)	< 0.2		mg/Kg OC	0.2	12	8082/3540C	CO	8082_S170221		
Acid Extractables											
108-95-2	PHENOL	< 50		ug/Kg	50	420	8270D/3540C	CO	MSQS_170221	a	
95-48-7	2-METHYLPHENOL (o-CRESOL)	< 50		ug/Kg	50	63	8270D/3540C	CO	MSQS_170221	a	
106-44-5	4-METHYLPHENOL (p-CRESOL)	< 50		ug/Kg	50	670	8270D/3540C	CO	MSQS_170221	a	
105-67-9	2,4-DIMETHYLPHENOL	< 25		ug/Kg	25	29	8270D/3540C	CO	MSQS_170221	a	
87-86-5	PENTACHLOROPHENOL	< 50		ug/Kg	50	360	8270D/3540C	CO	MSQS_170221	a	
100-51-6	BENZYL ALCOHOL	< 50		ug/Kg	50	57	8270D/3540C	CO	MSQS_170221	a	
65-85-0	BENZOIC ACID	< 500		ug/Kg	500	650	8270D/3540C	CO	MSQS_170221	a	

Notes:

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Units - mg/Kg is parts per million, mg/Kg OC is parts per million in terms of Organic Carbon, ug/Kg is parts per billion.

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Maximum Allowable is taken from Table 1 "Marine Sediment Quality Standards Chemical Criteria" in WAC 173-204-320.

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Corvallis, OR	Microbiology (d)	540 SW Third Street	Corvallis, OR 97333	541.753.4946

WSDOE Lab C567

Marine Sediment Quality Standards Chemical Criteria WAC 173-204-320

Page 1 of 2

Client Name: Aspect Consulting, LLC
401 2nd Ave S Suite 201
Seattle, WA 98104

Reference Number: **17-03594**
Project: LSE

Lab Number: 08528
Field ID: AB-07-0-3
Sample Description: AB-07-0-3
Matrix: Soil
Sample Date: 2/17/17

Report Date: 3/21/17
Date Analyzed: 3/1/17
Approved by: anp,bj,ljh,pdm
Authorized by:


Bryce Jensen
Chief Inorganic Chemist

CAS	Chemical Parameter	RESULT	Flag	Units	PQL	Maximum Allowance	Method	Analyst	Batch	Lab	Comment
Metals											
7440-38-2	ARSENIC	2.21		mg/Kg	0.86	57	6010B/3051	ANP	6010B_170228a	a	
7440-43-9	CADMIUM	< 0.86		mg/Kg	0.86	5.1	6010B/3051	ANP	6010B_170228a	a	
7440-47-3	CHROMIUM	25.5		mg/Kg	0.86	260	6010B/3051	ANP	6010B_170228a	a	
7440-50-8	COPPER	27.1		mg/Kg	0.86	390	6010B/3051	ANP	6010B_170228a	a	
7439-92-1	LEAD	5.99		mg/Kg	0.86	450	6010B/3051	ANP	6010B_170228a	a	
7439-97-6	MERCURY	0.0478		mg/Kg	0.0084	0.41	7471A	RHF	7471A_170224	a	
7440-22-4	SILVER	< 0.86		mg/Kg	0.86	6.1	6010B/3051	ANP	6010B_170228a	a	
7440-66-6	ZINC	58.3		mg/Kg	0.86	410	6010B/3051	ANP	6010B_170228a	a	
Polynuclear Aromatic Hydrocarbons (PAHs)											
	LOW MOLECULAR WT PAH	< 0.09		mg/Kg OC*	0.09	370	8270D/3540C	CO	MSQS_170221	a	
91-20-3	NAPHTHALENE	< 0.09		mg/Kg OC	0.09	99	8270D/3540C	CO	MSQS_170221	a	
208-96-8	ACENAPHTHYLENE	< 0.10		mg/Kg OC	0.10	66	8270D/3540C	CO	MSQS_170221	a	
83-32-9	ACENAPHTHENE	< 0.09		mg/Kg OC	0.09	16	8270D/3540C	CO	MSQS_170221	a	
86-73-7	FLUORENE	< 0.10		mg/Kg OC	0.10	23	8270D/3540C	CO	MSQS_170221	a	
85-01-8	PHENANTHRENE	< 0.09		mg/Kg OC	0.09	100	8270D/3540C	CO	MSQS_170221	a	
120-12-7	ANTHRACENE	< 0.09		mg/Kg OC	0.09	220	8270D/3540C	CO	MSQS_170221	a	
91-57-6	2-METHYLNAPHTHALENE	< 0.09		mg/Kg OC	0.09	38	8270D/3540C	CO	MSQS_170221	a	
	HIGH MOLECULAR WT PAH	< 0.08		mg/Kg OC	0.08	960	8270D/3540C	CO	MSQS_170221	a	
206-44-0	FLUORANTHENE	< 0.10		mg/Kg OC	0.10	160	8270D/3540C	CO	MSQS_170221	a	
129-00-0	PYRENE	< 0.10		mg/Kg OC	0.10	1000	8270D/3540C	CO	MSQS_170221	a	
56-55-3	BENZ[<i>a</i>]ANTHRACENE	< 0.10		mg/Kg OC	0.10	110	8270D/3540C	CO	MSQS_170221	a	
218-01-9	CHRYSENE	< 0.10		mg/Kg OC	0.10	110	8270D/3540C	CO	MSQS_170221	a	
	TOTAL BENZOFLUORANTHENES	< 0.10		mg/Kg OC	0.10	230	8270D/3540C	CO	MSQS_170221	a	

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CAS	Chemical Parameter	RESULT	Flag	Units	PQL	Maximum Allowance	Method	Analyst	Batch	Lab	Comment
50-32-8	BENZO[A]PYRENE	< 0.10		mg/Kg OC	0.10	99	8270D/3540C	CO	MSQS_170221	a	
193-39-5	INDENO[1,2,3,C,D]PYRENE	< 0.10		mg/Kg OC	0.10	34	8270D/3540C	CO	MSQS_170221	a	
53-70-3	DIBENZO[A,H]ANTHRACENE	< 0.10		mg/Kg OC	0.10	12	8270D/3540C	CO	MSQS_170221	a	
191-24-2	BENZO[G,H,I]PERYLENE	< 0.10		mg/Kg OC	0.10	31	8270D/3540C	CO	MSQS_170221	a	
Base/Neutral Extractables											
95-50-1	1,2 - DICHLOROBENZENE	< 0.05		mg/Kg OC	0.05	2.3	8270D/3540C	CO	MSQS_170221	a	
106-46-7	1,4 - DICHLOROBENZENE	< 0.05		mg/Kg OC	0.05	3.1	8270D/3540C	CO	MSQS_170221	a	
120-82-1	1,2,4-TRICHLOROBENZENE	< 0.04		mg/Kg OC	0.04	0.81	8270D/3540C	CO	MSQS_170221	a	
118-74-1	HEXACHLOROBENZENE	< 0.03		mg/Kg OC	0.03	0.38	8270D/3540C	CO	MSQS_170221	a	
131-11-3	DIMETHYL PHTHALATE	< 0.31		mg/Kg OC	0.31	53	8270D/3540C	CO	MSQS_170221	a	
84-66-2	DIETHYL PHTHALATE	< 0.33		mg/Kg OC	0.33	61	8270D/3540C	CO	MSQS_170221	a	
84-74-2	DI-N-BUTYL PHTHALATE	< 0.69		mg/Kg OC	0.69	220	8270D/3540C	CO	MSQS_170221	a	
85-68-7	BENZYL BUTYL PHTHALATE	< 0.37		mg/Kg OC	0.37	4.9	8270D/3540C	CO	MSQS_170221	a	
117-81-7	DI(2-ETHYLHEXYL)PHTHALATE	< 0.37		mg/Kg OC	0.37	47	8270D/3540C	CO	MSQS_170221	a	
117-84-0	DI-N-OCTYL PHTHALATE	< 0.37		mg/Kg OC	0.37	58	8270D/3540C	CO	MSQS_170221	a	
132-64-9	DIBENZOFURAN	< 0.09		mg/Kg OC	0.09	15	8270D/3540C	CO	MSQS_170221	a	
87-68-3	HEXACHLOROBUTADIENE	< 0.02		mg/Kg OC	0.02	3.9	8270D/3540C	CO	MSQS_170221	a	
55-18-5	N-NITROSODIPHENYLAMINE	< 0.07		mg/Kg OC	0.07	11	8270D/3540C	CO	MSQS_170221	a	
1336-36-3	PCBS (Total Aroclors)	< 0.2		mg/Kg OC	0.2	12	8082/3540C	CO	8082_S170221		
Acid Extractables											
108-95-2	PHENOL	< 50		ug/Kg	50	420	8270D/3540C	CO	MSQS_170221	a	
95-48-7	2-METHYLPHENOL (o-CRESOL)	< 50		ug/Kg	50	63	8270D/3540C	CO	MSQS_170221	a	
106-44-5	4-METHYLPHENOL (p-CRESOL)	< 50		ug/Kg	50	670	8270D/3540C	CO	MSQS_170221	a	
105-67-9	2,4-DIMETHYLPHENOL	< 25		ug/Kg	25	29	8270D/3540C	CO	MSQS_170221	a	
87-86-5	PENTACHLOROPHENOL	< 50		ug/Kg	50	360	8270D/3540C	CO	MSQS_170221	a	
100-51-6	BENZYL ALCOHOL	< 50		ug/Kg	50	57	8270D/3540C	CO	MSQS_170221	a	
65-85-0	BENZOIC ACID	< 500		ug/Kg	500	650	8270D/3540C	CO	MSQS_170221	a	

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WSDOE Lab C567

Marine Sediment Quality Standards Chemical Criteria WAC 173-204-320

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Client Name: Aspect Consulting, LLC
401 2nd Ave S Suite 201
Seattle, WA 98104

Reference Number: **17-03594**
Project: LSE

Lab Number: 08526
Field ID: AB-05-6-8
Sample Description: AB-05-6-8
Matrix: Soil
Sample Date: 2/17/17

Report Date: 3/21/17
Date Analyzed: 2/28/17
Approved by: anp,bj,ljh,pdm
Authorized by:


Bryce Jensen
Chief Inorganic Chemist

CAS	Chemical Parameter	RESULT	Flag	Units	PQL	Maximum Allowance	Method	Analyst	Batch	Lab	Comment
Metals											
7440-38-2	ARSENIC	2.76		mg/Kg	1.02	57	6010B/3051	ANP	6010B_170228A	a	
7440-43-9	CADMIUM	< 1.02		mg/Kg	1.02	5.1	6010B/3051	ANP	6010B_170228A	a	
7440-47-3	CHROMIUM	43.7		mg/Kg	1.02	260	6010B/3051	ANP	6010B_170228A	a	
7440-50-8	COPPER	25.4		mg/Kg	1.02	390	6010B/3051	ANP	6010B_170228A	a	
7439-92-1	LEAD	1.03		mg/Kg	1.02	450	6010B/3051	ANP	6010B_170228A	a	
7439-97-6	MERCURY	0.0367		mg/Kg	0.0083	0.41	7471A	RHF	7471A_170224	a	
7440-22-4	SILVER	< 1.02		mg/Kg	1.02	6.1	6010B/3051	ANP	6010B_170228A	a	
7440-66-6	ZINC	41.3		mg/Kg	1.02	410	6010B/3051	ANP	6010B_170228A	a	
Polynuclear Aromatic Hydrocarbons (PAHs)											
	LOW MOLECULAR WT PAH	< 0.09		mg/Kg OC*	0.09	370	8270D/3540C	CO	MSQS_170221	a	
91-20-3	NAPHTHALENE	< 0.09		mg/Kg OC	0.09	99	8270D/3540C	CO	MSQS_170221	a	
208-96-8	ACENAPHTHYLENE	< 0.10		mg/Kg OC	0.10	66	8270D/3540C	CO	MSQS_170221	a	
83-32-9	ACENAPHTHENE	< 0.09		mg/Kg OC	0.09	16	8270D/3540C	CO	MSQS_170221	a	
86-73-7	FLUORENE	< 0.10		mg/Kg OC	0.10	23	8270D/3540C	CO	MSQS_170221	a	
85-01-8	PHENANTHRENE	< 0.09		mg/Kg OC	0.09	100	8270D/3540C	CO	MSQS_170221	a	
120-12-7	ANTHRACENE	< 0.09		mg/Kg OC	0.09	220	8270D/3540C	CO	MSQS_170221	a	
91-57-6	2-METHYLNAPHTHALENE	< 0.09		mg/Kg OC	0.09	38	8270D/3540C	CO	MSQS_170221	a	
	HIGH MOLECULAR WT PAH	< 0.08		mg/Kg OC	0.08	960	8270D/3540C	CO	MSQS_170221	a	
206-44-0	FLUORANTHENE	< 0.10		mg/Kg OC	0.10	160	8270D/3540C	CO	MSQS_170221	a	
129-00-0	PYRENE	< 0.10		mg/Kg OC	0.10	1000	8270D/3540C	CO	MSQS_170221	a	
56-55-3	BENZ[<i>a</i>]ANTHRACENE	< 0.10		mg/Kg OC	0.10	110	8270D/3540C	CO	MSQS_170221	a	
218-01-9	CHRYSENE	< 0.10		mg/Kg OC	0.10	110	8270D/3540C	CO	MSQS_170221	a	
	TOTAL BENZOFLUORANTHENES	< 0.10		mg/Kg OC	0.10	230	8270D/3540C	CO	MSQS_170221	a	

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CAS	Chemical Parameter	RESULT	Flag	Units	PQL	Maximum Allowance	Method	Analyst	Batch	Lab	Comment
50-32-8	BENZO[A]PYRENE	< 0.10		mg/Kg OC	0.10	99	8270D/3540C	CO	MSQS_170221	a	
193-39-5	INDENO[1,2,3,C,D]PYRENE	< 0.10		mg/Kg OC	0.10	34	8270D/3540C	CO	MSQS_170221	a	
53-70-3	DIBENZO[A,H]ANTHRACENE	< 0.10		mg/Kg OC	0.10	12	8270D/3540C	CO	MSQS_170221	a	
191-24-2	BENZO[G,H,I]PERYLENE	< 0.10		mg/Kg OC	0.10	31	8270D/3540C	CO	MSQS_170221	a	
Base/Neutral Extractables											
95-50-1	1,2 - DICHLOROBENZENE	< 0.05		mg/Kg OC	0.05	2.3	8270D/3540C	CO	MSQS_170221	a	
106-46-7	1,4 - DICHLOROBENZENE	< 0.05		mg/Kg OC	0.05	3.1	8270D/3540C	CO	MSQS_170221	a	
120-82-1	1,2,4-TRICHLOROBENZENE	< 0.04		mg/Kg OC	0.04	0.81	8270D/3540C	CO	MSQS_170221	a	
118-74-1	HEXACHLOROBENZENE	< 0.03		mg/Kg OC	0.03	0.38	8270D/3540C	CO	MSQS_170221	a	
131-11-3	DIMETHYL PHTHALATE	< 0.31		mg/Kg OC	0.31	53	8270D/3540C	CO	MSQS_170221	a	
84-66-2	DIETHYL PHTHALATE	< 0.33		mg/Kg OC	0.33	61	8270D/3540C	CO	MSQS_170221	a	
84-74-2	DI-N-BUTYL PHTHALATE	< 0.69		mg/Kg OC	0.69	220	8270D/3540C	CO	MSQS_170221	a	
85-68-7	BENZYL BUTYL PHTHALATE	< 0.37		mg/Kg OC	0.37	4.9	8270D/3540C	CO	MSQS_170221	a	
117-81-7	DI(2-ETHYLHEXYL)PHTHALATE	< 0.37		mg/Kg OC	0.37	47	8270D/3540C	CO	MSQS_170221	a	
117-84-0	DI-N-OCTYL PHTHALATE	< 0.37		mg/Kg OC	0.37	58	8270D/3540C	CO	MSQS_170221	a	
132-64-9	DIBENZOFURAN	< 0.09		mg/Kg OC	0.09	15	8270D/3540C	CO	MSQS_170221	a	
87-68-3	HEXACHLOROBUTADIENE	< 0.02		mg/Kg OC	0.02	3.9	8270D/3540C	CO	MSQS_170221	a	
55-18-5	N-NITROSODIPHENYLAMINE	< 0.07		mg/Kg OC	0.07	11	8270D/3540C	CO	MSQS_170221	a	
1336-36-3	PCBS (Total Aroclors)	< 0.2		mg/Kg OC	0.2	12	8082/3540C	CO	8082_S170221		
Acid Extractables											
108-95-2	PHENOL	< 50		ug/Kg	50	420	8270D/3540C	CO	MSQS_170221	a	
95-48-7	2-METHYLPHENOL (o-CRESOL)	< 50		ug/Kg	50	63	8270D/3540C	CO	MSQS_170221	a	
106-44-5	4-METHYLPHENOL (p-CRESOL)	< 50		ug/Kg	50	670	8270D/3540C	CO	MSQS_170221	a	
105-67-9	2,4-DIMETHYLPHENOL	< 25		ug/Kg	25	29	8270D/3540C	CO	MSQS_170221	a	
87-86-5	PENTACHLOROPHENOL	< 50		ug/Kg	50	360	8270D/3540C	CO	MSQS_170221	a	
100-51-6	BENZYL ALCOHOL	< 50		ug/Kg	50	57	8270D/3540C	CO	MSQS_170221	a	
65-85-0	BENZOIC ACID	< 500		ug/Kg	500	650	8270D/3540C	CO	MSQS_170221	a	

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Corvallis, OR	Microbiology (d)	540 SW Third Street	Corvallis, OR 97333	541.753.4946

WSDOE Lab C567

Marine Sediment Quality Standards Chemical Criteria WAC 173-204-320

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Client Name: Aspect Consulting, LLC
401 2nd Ave S Suite 201
Seattle, WA 98104

Reference Number: **17-03594**
Project: LSE

Lab Number: 08525
Field ID: AB-05-1-3
Sample Description: AB-05-1-3
Matrix: Soil
Sample Date: 2/17/17

Report Date: 3/21/17
Date Analyzed: 2/28/17
Approved by: anp,bj,ljh,pdm
Authorized by:


Bryce Jensen
Chief Inorganic Chemist

CAS	Chemical Parameter	RESULT	Flag	Units	PQL	Maximum Allowance	Method	Analyst	Batch	Lab	Comment
Metals											
7440-38-2	ARSENIC	< 0.92		mg/Kg	0.92	57	6010B/3051	ANP	6010B_170228A	a	
7440-43-9	CADMIUM	< 0.92		mg/Kg	0.92	5.1	6010B/3051	ANP	6010B_170228A	a	
7440-47-3	CHROMIUM	50.2		mg/Kg	0.92	260	6010B/3051	ANP	6010B_170228A	a	
7440-50-8	COPPER	16.6		mg/Kg	0.92	390	6010B/3051	ANP	6010B_170228A	a	
7439-92-1	LEAD	1.46		mg/Kg	0.92	450	6010B/3051	ANP	6010B_170228A	a	
7439-97-6	MERCURY	0.0182		mg/Kg	0.0083	0.41	7471A	RHF	7471A_170224	a	
7440-22-4	SILVER	< 0.92		mg/Kg	0.92	6.1	6010B/3051	ANP	6010B_170228A	a	
7440-66-6	ZINC	27.5		mg/Kg	0.92	410	6010B/3051	ANP	6010B_170228A	a	
Polynuclear Aromatic Hydrocarbons (PAHs)											
	LOW MOLECULAR WT PAH	< 0.09		mg/Kg OC*	0.09	370	8270D/3540C	CO	MSQS_170221	a	
91-20-3	NAPHTHALENE	< 0.09		mg/Kg OC	0.09	99	8270D/3540C	CO	MSQS_170221	a	
208-96-8	ACENAPHTHYLENE	< 0.10		mg/Kg OC	0.10	66	8270D/3540C	CO	MSQS_170221	a	
83-32-9	ACENAPHTHENE	< 0.09		mg/Kg OC	0.09	16	8270D/3540C	CO	MSQS_170221	a	
86-73-7	FLUORENE	< 0.10		mg/Kg OC	0.10	23	8270D/3540C	CO	MSQS_170221	a	
85-01-8	PHENANTHRENE	< 0.09		mg/Kg OC	0.09	100	8270D/3540C	CO	MSQS_170221	a	
120-12-7	ANTHRACENE	< 0.09		mg/Kg OC	0.09	220	8270D/3540C	CO	MSQS_170221	a	
91-57-6	2-METHYLNAPHTHALENE	< 0.09		mg/Kg OC	0.09	38	8270D/3540C	CO	MSQS_170221	a	
	HIGH MOLECULAR WT PAH	< 0.08		mg/Kg OC	0.08	960	8270D/3540C	CO	MSQS_170221	a	
206-44-0	FLUORANTHENE	< 0.10		mg/Kg OC	0.10	160	8270D/3540C	CO	MSQS_170221	a	
129-00-0	PYRENE	< 0.10		mg/Kg OC	0.10	1000	8270D/3540C	CO	MSQS_170221	a	
56-55-3	BENZ[<i>a</i>]ANTHRACENE	< 0.10		mg/Kg OC	0.10	110	8270D/3540C	CO	MSQS_170221	a	
218-01-9	CHRYSENE	< 0.10		mg/Kg OC	0.10	110	8270D/3540C	CO	MSQS_170221	a	
	TOTAL BENZOFLUORANTHENES	< 0.10		mg/Kg OC	0.10	230	8270D/3540C	CO	MSQS_170221	a	

Notes:

Flags are data qualifiers. If there are data qualifiers on your report definitions can be found on an accompanying sheet.

Units - mg/Kg is parts per million, mg/Kg OC is parts per million in terms of Organic Carbon, ug/Kg is parts per billion.

Practical Quantitation Limit or PQL is the lowest level that can be achieved within specified limits of precision and accuracy during routine laboratory operating conditions.

Maximum Allowable is taken from Table 1 "Marine Sediment Quality Standards Chemical Criteria" in WAC 173-204-320.

Method - The value listed is the Analytical Method along with the Analytical Prep Method separated by a forward slash.

Batch - The analytical batch number identifies samples that were analyzed together in a group. It is also associated with all quality control processed in that sample group.

If you have any questions concerning this report contact us at the above phone number.

Form: cSediment.rpt

CAS	Chemical Parameter	RESULT	Flag	Units	PQL	Maximum Allowance	Method	Analyst	Batch	Lab	Comment
50-32-8	BENZO[A]PYRENE	< 0.10		mg/Kg OC	0.10	99	8270D/3540C	CO	MSQS_170221	a	
193-39-5	INDENO[1,2,3,C,D]PYRENE	< 0.10		mg/Kg OC	0.10	34	8270D/3540C	CO	MSQS_170221	a	
53-70-3	DIBENZO[A,H]ANTHRACENE	< 0.10		mg/Kg OC	0.10	12	8270D/3540C	CO	MSQS_170221	a	
191-24-2	BENZO[G,H,I]PERYLENE	< 0.10		mg/Kg OC	0.10	31	8270D/3540C	CO	MSQS_170221	a	
Base/Neutral Extractables											
95-50-1	1,2 - DICHLOROBENZENE	< 0.05		mg/Kg OC	0.05	2.3	8270D/3540C	CO	MSQS_170221	a	
106-46-7	1,4 - DICHLOROBENZENE	< 0.05		mg/Kg OC	0.05	3.1	8270D/3540C	CO	MSQS_170221	a	
120-82-1	1,2,4-TRICHLOROBENZENE	< 0.04		mg/Kg OC	0.04	0.81	8270D/3540C	CO	MSQS_170221	a	
118-74-1	HEXACHLOROBENZENE	< 0.03		mg/Kg OC	0.03	0.38	8270D/3540C	CO	MSQS_170221	a	
131-11-3	DIMETHYL PHTHALATE	< 0.31		mg/Kg OC	0.31	53	8270D/3540C	CO	MSQS_170221	a	
84-66-2	DIETHYL PHTHALATE	< 0.33		mg/Kg OC	0.33	61	8270D/3540C	CO	MSQS_170221	a	
84-74-2	DI-N-BUTYL PHTHALATE	< 0.69		mg/Kg OC	0.69	220	8270D/3540C	CO	MSQS_170221	a	
85-68-7	BENZYL BUTYL PHTHALATE	< 0.37		mg/Kg OC	0.37	4.9	8270D/3540C	CO	MSQS_170221	a	
117-81-7	DI(2-ETHYLHEXYL)PHTHALATE	< 0.37		mg/Kg OC	0.37	47	8270D/3540C	CO	MSQS_170221	a	
117-84-0	DI-N-OCTYL PHTHALATE	< 0.37		mg/Kg OC	0.37	58	8270D/3540C	CO	MSQS_170221	a	
132-64-9	DIBENZOFURAN	< 0.09		mg/Kg OC	0.09	15	8270D/3540C	CO	MSQS_170221	a	
87-68-3	HEXACHLOROBUTADIENE	< 0.02		mg/Kg OC	0.02	3.9	8270D/3540C	CO	MSQS_170221	a	
55-18-5	N-NITROSODIPHENYLAMINE	< 0.07		mg/Kg OC	0.07	11	8270D/3540C	CO	MSQS_170221	a	
1336-36-3	PCBS (Total Aroclors)	< 0.2		mg/Kg OC	0.2	12	8082/3540C	CO	8082_S170221		
Acid Extractables											
108-95-2	PHENOL	< 50		ug/Kg	50	420	8270D/3540C	CO	MSQS_170221	a	
95-48-7	2-METHYLPHENOL (o-CRESOL)	< 50		ug/Kg	50	63	8270D/3540C	CO	MSQS_170221	a	
106-44-5	4-METHYLPHENOL (p-CRESOL)	< 50		ug/Kg	50	670	8270D/3540C	CO	MSQS_170221	a	
105-67-9	2,4-DIMETHYLPHENOL	< 25		ug/Kg	25	29	8270D/3540C	CO	MSQS_170221	a	
87-86-5	PENTACHLOROPHENOL	< 50		ug/Kg	50	360	8270D/3540C	CO	MSQS_170221	a	
100-51-6	BENZYL ALCOHOL	< 50		ug/Kg	50	57	8270D/3540C	CO	MSQS_170221	a	
65-85-0	BENZOIC ACID	< 500		ug/Kg	500	650	8270D/3540C	CO	MSQS_170221	a	

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Method - The value listed is the Analytical Method along with the Analytical Prep Method separated by a forward slash.

Batch - The analytical batch number identifies samples that were analyzed together in a group. It is also associated with all quality control processed in that sample group.



Burlington, WA	Corporate Laboratory (a)	1620 S Walnut St	Burlington, WA 98233	800.755.9295 • 360.757.1400
Bellingham, WA	Microbiology (b)	805 Orchard Dr Ste 4	Bellingham, WA 98225	360.715.1212
Portland, OR	Microbiology/Chemistry (c)	9150 SW Pioneer Ct Ste W	Wilsonville, OR 97070	503.682.7802
Corvallis, OR	Microbiology (d)	540 SW Third Street	Corvallis, OR 97333	541.753.4946

WSDOE Lab C567

Marine Sediment Quality Standards Chemical Criteria WAC 173-204-320

Page 1 of 2

Client Name: Aspect Consulting, LLC
401 2nd Ave S Suite 201
Seattle, WA 98104

Reference Number: **17-03594**
Project: LSE

Lab Number: 08524
Field ID: AB-04-5-9
Sample Description: AB-04-5-9
Matrix: Soil
Sample Date: 2/17/17

Report Date: 3/21/17
Date Analyzed: 2/28/17
Approved by: anp,bj,ljh,pdm
Authorized by:


Bryce Jensen
Chief Inorganic Chemist

CAS	Chemical Parameter	RESULT	Flag	Units	PQL	Maximum Allowance	Method	Analyst	Batch	Lab	Comment
Metals											
7440-38-2	ARSENIC	5.53		mg/Kg	1.04	57	6010B/3051	ANP	6010B_170228A	a	
7440-43-9	CADMIUM	< 1.04		mg/Kg	1.04	5.1	6010B/3051	ANP	6010B_170228A	a	
7440-47-3	CHROMIUM	36.1		mg/Kg	1.04	260	6010B/3051	ANP	6010B_170228A	a	
7440-50-8	COPPER	30.8		mg/Kg	1.04	390	6010B/3051	ANP	6010B_170228A	a	
7439-92-1	LEAD	< 1.04		mg/Kg	1.04	450	6010B/3051	ANP	6010B_170228A	a	
7439-97-6	MERCURY	0.0629		mg/Kg	0.0083	0.41	7471A	RHF	7471A_170224	a	
7440-22-4	SILVER	< 1.04		mg/Kg	1.04	6.1	6010B/3051	ANP	6010B_170228A	a	
7440-66-6	ZINC	68.0		mg/Kg	1.04	410	6010B/3051	ANP	6010B_170228A	a	
Polynuclear Aromatic Hydrocarbons (PAHs)											
	LOW MOLECULAR WT PAH	< 0.09		mg/Kg OC*	0.09	370	8270D/3540C	CO	MSQS_170221	a	
91-20-3	NAPHTHALENE	< 0.09		mg/Kg OC	0.09	99	8270D/3540C	CO	MSQS_170221	a	
208-96-8	ACENAPHTHYLENE	< 0.10		mg/Kg OC	0.10	66	8270D/3540C	CO	MSQS_170221	a	
83-32-9	ACENAPHTHENE	< 0.09		mg/Kg OC	0.09	16	8270D/3540C	CO	MSQS_170221	a	
86-73-7	FLUORENE	< 0.10		mg/Kg OC	0.10	23	8270D/3540C	CO	MSQS_170221	a	
85-01-8	PHENANTHRENE	< 0.09		mg/Kg OC	0.09	100	8270D/3540C	CO	MSQS_170221	a	
120-12-7	ANTHRACENE	< 0.09		mg/Kg OC	0.09	220	8270D/3540C	CO	MSQS_170221	a	
91-57-6	2-METHYLNAPHTHALENE	< 0.09		mg/Kg OC	0.09	38	8270D/3540C	CO	MSQS_170221	a	
	HIGH MOLECULAR WT PAH	< 0.08		mg/Kg OC	0.08	960	8270D/3540C	CO	MSQS_170221	a	
206-44-0	FLUORANTHENE	< 0.10		mg/Kg OC	0.10	160	8270D/3540C	CO	MSQS_170221	a	
129-00-0	PYRENE	< 0.10		mg/Kg OC	0.10	1000	8270D/3540C	CO	MSQS_170221	a	
56-55-3	BENZ[<i>a</i>]ANTHRACENE	< 0.10		mg/Kg OC	0.10	110	8270D/3540C	CO	MSQS_170221	a	
218-01-9	CHRYSENE	< 0.10		mg/Kg OC	0.10	110	8270D/3540C	CO	MSQS_170221	a	
	TOTAL BENZOFLUORANTHENES	< 0.10		mg/Kg OC	0.10	230	8270D/3540C	CO	MSQS_170221	a	

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Form: cSediment.rpt

CAS	Chemical Parameter	RESULT	Flag	Units	PQL	Maximum Allowance	Method	Analyst	Batch	Lab	Comment
50-32-8	BENZO[A]PYRENE	< 0.10		mg/Kg OC	0.10	99	8270D/3540C	CO	MSQS_170221	a	
193-39-5	INDENO[1,2,3,C,D]PYRENE	< 0.10		mg/Kg OC	0.10	34	8270D/3540C	CO	MSQS_170221	a	
53-70-3	DIBENZO[A,H]ANTHRACENE	< 0.10		mg/Kg OC	0.10	12	8270D/3540C	CO	MSQS_170221	a	
191-24-2	BENZO[G,H,I]PERYLENE	< 0.10		mg/Kg OC	0.10	31	8270D/3540C	CO	MSQS_170221	a	
Base/Neutral Extractables											
95-50-1	1,2 - DICHLOROBENZENE	< 0.05		mg/Kg OC	0.05	2.3	8270D/3540C	CO	MSQS_170221	a	
106-46-7	1,4 - DICHLOROBENZENE	< 0.05		mg/Kg OC	0.05	3.1	8270D/3540C	CO	MSQS_170221	a	
120-82-1	1,2,4-TRICHLOROBENZENE	< 0.04		mg/Kg OC	0.04	0.81	8270D/3540C	CO	MSQS_170221	a	
118-74-1	HEXACHLOROBENZENE	< 0.03		mg/Kg OC	0.03	0.38	8270D/3540C	CO	MSQS_170221	a	
131-11-3	DIMETHYL PHTHALATE	< 0.31		mg/Kg OC	0.31	53	8270D/3540C	CO	MSQS_170221	a	
84-66-2	DIETHYL PHTHALATE	< 0.33		mg/Kg OC	0.33	61	8270D/3540C	CO	MSQS_170221	a	
84-74-2	DI-N-BUTYL PHTHALATE	< 0.69		mg/Kg OC	0.69	220	8270D/3540C	CO	MSQS_170221	a	
85-68-7	BENZYL BUTYL PHTHALATE	< 0.37		mg/Kg OC	0.37	4.9	8270D/3540C	CO	MSQS_170221	a	
117-81-7	DI(2-ETHYLHEXYL)PHTHALATE	< 0.37		mg/Kg OC	0.37	47	8270D/3540C	CO	MSQS_170221	a	
117-84-0	DI-N-OCTYL PHTHALATE	< 0.37		mg/Kg OC	0.37	58	8270D/3540C	CO	MSQS_170221	a	
132-64-9	DIBENZOFURAN	< 0.09		mg/Kg OC	0.09	15	8270D/3540C	CO	MSQS_170221	a	
87-68-3	HEXACHLOROBUTADIENE	< 0.02		mg/Kg OC	0.02	3.9	8270D/3540C	CO	MSQS_170221	a	
55-18-5	N-NITROSODIPHENYLAMINE	< 0.07		mg/Kg OC	0.07	11	8270D/3540C	CO	MSQS_170221	a	
1336-36-3	PCBS (Total Aroclors)	< 0.2		mg/Kg OC	0.2	12	8082/3540C	CO	8082_S170221		
Acid Extractables											
108-95-2	PHENOL	< 50		ug/Kg	50	420	8270D/3540C	CO	MSQS_170221	a	
95-48-7	2-METHYLPHENOL (o-CRESOL)	< 50		ug/Kg	50	63	8270D/3540C	CO	MSQS_170221	a	
106-44-5	4-METHYLPHENOL (p-CRESOL)	< 50		ug/Kg	50	670	8270D/3540C	CO	MSQS_170221	a	
105-67-9	2,4-DIMETHYLPHENOL	< 25		ug/Kg	25	29	8270D/3540C	CO	MSQS_170221	a	
87-86-5	PENTACHLOROPHENOL	< 50		ug/Kg	50	360	8270D/3540C	CO	MSQS_170221	a	
100-51-6	BENZYL ALCOHOL	< 50		ug/Kg	50	57	8270D/3540C	CO	MSQS_170221	a	
65-85-0	BENZOIC ACID	< 500		ug/Kg	500	650	8270D/3540C	CO	MSQS_170221	a	

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Portland, OR	Microbiology/Chemistry (c)	9150 SW Pioneer Ct Ste W	Wilsonville, OR 97070	503.682.7802
Corvallis, OR	Microbiology (d)	540 SW Third Street	Corvallis, OR 97333	541.753.4946

WSDOE Lab C567

Marine Sediment Quality Standards Chemical Criteria WAC 173-204-320

Page 1 of 2

Client Name: Aspect Consulting, LLC
401 2nd Ave S Suite 201
Seattle, WA 98104

Reference Number: **17-03594**
Project: LSE

Lab Number: 08523
Field ID: AB-04-1-4
Sample Description: AB-04-1-4
Matrix: Soil
Sample Date: 2/17/17

Report Date: 3/21/17
Date Analyzed: 2/28/17
Approved by: anp,bj,ljh,pdm
Authorized by:


Bryce Jensen
Chief Inorganic Chemist

CAS	Chemical Parameter	RESULT	Flag	Units	PQL	Maximum Allowance	Method	Analyst	Batch	Lab	Comment
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7440-43-9	CADMIUM	< 0.88		mg/Kg	0.88	5.1	6010B/3051	ANP	6010B_170228A	a	
7440-47-3	CHROMIUM	33.7		mg/Kg	0.88	260	6010B/3051	ANP	6010B_170228A	a	
7440-50-8	COPPER	40.0		mg/Kg	0.88	390	6010B/3051	ANP	6010B_170228A	a	
7439-92-1	LEAD	< 0.88		mg/Kg	0.88	450	6010B/3051	ANP	6010B_170228A	a	
7439-97-6	MERCURY	0.0768		mg/Kg	0.0081	0.41	7471A	RHF	7471A_170224	a	
7440-22-4	SILVER	< 0.88		mg/Kg	0.88	6.1	6010B/3051	ANP	6010B_170228A	a	
7440-66-6	ZINC	65.0		mg/Kg	0.88	410	6010B/3051	ANP	6010B_170228A	a	
Polynuclear Aromatic Hydrocarbons (PAHs)											
	LOW MOLECULAR WT PAH	< 0.09		mg/Kg OC*	0.09	370	8270D/3540C	CO	MSQS_170221	a	
91-20-3	NAPHTHALENE	< 0.09		mg/Kg OC	0.09	99	8270D/3540C	CO	MSQS_170221	a	
208-96-8	ACENAPHTHYLENE	< 0.10		mg/Kg OC	0.10	66	8270D/3540C	CO	MSQS_170221	a	
83-32-9	ACENAPHTHENE	< 0.09		mg/Kg OC	0.09	16	8270D/3540C	CO	MSQS_170221	a	
86-73-7	FLUORENE	< 0.10		mg/Kg OC	0.10	23	8270D/3540C	CO	MSQS_170221	a	
85-01-8	PHENANTHRENE	< 0.09		mg/Kg OC	0.09	100	8270D/3540C	CO	MSQS_170221	a	
120-12-7	ANTHRACENE	< 0.09		mg/Kg OC	0.09	220	8270D/3540C	CO	MSQS_170221	a	
91-57-6	2-METHYLNAPHTHALENE	< 0.09		mg/Kg OC	0.09	38	8270D/3540C	CO	MSQS_170221	a	
	HIGH MOLECULAR WT PAH	< 0.08		mg/Kg OC	0.08	960	8270D/3540C	CO	MSQS_170221	a	
206-44-0	FLUORANTHENE	< 0.10		mg/Kg OC	0.10	160	8270D/3540C	CO	MSQS_170221	a	
129-00-0	PYRENE	< 0.10		mg/Kg OC	0.10	1000	8270D/3540C	CO	MSQS_170221	a	
56-55-3	BENZ[<i>a</i>]ANTHRACENE	< 0.10		mg/Kg OC	0.10	110	8270D/3540C	CO	MSQS_170221	a	
218-01-9	CHRYSENE	< 0.10		mg/Kg OC	0.10	110	8270D/3540C	CO	MSQS_170221	a	
	TOTAL BENZOFLUORANTHENES	< 0.10		mg/Kg OC	0.10	230	8270D/3540C	CO	MSQS_170221	a	

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Batch - The analytical batch number identifies samples that were analyzed together in a group. It is also associated with all quality control processed in that sample group.

If you have any questions concerning this report contact us at the above phone number.

Form: cSediment.rpt

CAS	Chemical Parameter	RESULT	Flag	Units	PQL	Maximum Allowance	Method	Analyst	Batch	Lab	Comment
50-32-8	BENZO[A]PYRENE	< 0.10		mg/Kg OC	0.10	99	8270D/3540C	CO	MSQS_170221	a	
193-39-5	INDENO[1,2,3,C,D]PYRENE	< 0.10		mg/Kg OC	0.10	34	8270D/3540C	CO	MSQS_170221	a	
53-70-3	DIBENZO[A,H]ANTHRACENE	< 0.10		mg/Kg OC	0.10	12	8270D/3540C	CO	MSQS_170221	a	
191-24-2	BENZO[G,H,I]PERYLENE	< 0.10		mg/Kg OC	0.10	31	8270D/3540C	CO	MSQS_170221	a	
Base/Neutral Extractables											
95-50-1	1,2 - DICHLOROBENZENE	< 0.05		mg/Kg OC	0.05	2.3	8270D/3540C	CO	MSQS_170221	a	
106-46-7	1,4 - DICHLOROBENZENE	< 0.05		mg/Kg OC	0.05	3.1	8270D/3540C	CO	MSQS_170221	a	
120-82-1	1,2,4-TRICHLOROBENZENE	< 0.04		mg/Kg OC	0.04	0.81	8270D/3540C	CO	MSQS_170221	a	
118-74-1	HEXACHLOROBENZENE	< 0.03		mg/Kg OC	0.03	0.38	8270D/3540C	CO	MSQS_170221	a	
131-11-3	DIMETHYL PHTHALATE	< 0.31		mg/Kg OC	0.31	53	8270D/3540C	CO	MSQS_170221	a	
84-66-2	DIETHYL PHTHALATE	< 0.33		mg/Kg OC	0.33	61	8270D/3540C	CO	MSQS_170221	a	
84-74-2	DI-N-BUTYL PHTHALATE	< 0.69		mg/Kg OC	0.69	220	8270D/3540C	CO	MSQS_170221	a	
85-68-7	BENZYL BUTYL PHTHALATE	< 0.37		mg/Kg OC	0.37	4.9	8270D/3540C	CO	MSQS_170221	a	
117-81-7	DI(2-ETHYLHEXYL)PHTHALATE	< 0.37		mg/Kg OC	0.37	47	8270D/3540C	CO	MSQS_170221	a	
117-84-0	DI-N-OCTYL PHTHALATE	< 0.37		mg/Kg OC	0.37	58	8270D/3540C	CO	MSQS_170221	a	
132-64-9	DIBENZOFURAN	< 0.09		mg/Kg OC	0.09	15	8270D/3540C	CO	MSQS_170221	a	
87-68-3	HEXACHLOROBUTADIENE	< 0.02		mg/Kg OC	0.02	3.9	8270D/3540C	CO	MSQS_170221	a	
55-18-5	N-NITROSODIPHENYLAMINE	< 0.07		mg/Kg OC	0.07	11	8270D/3540C	CO	MSQS_170221	a	
1336-36-3	PCBS (Total Aroclors)	< 0.2		mg/Kg OC	0.2	12	8082/3540C	CO	8082_S170221		
Acid Extractables											
108-95-2	PHENOL	< 50		ug/Kg	50	420	8270D/3540C	CO	MSQS_170221	a	
95-48-7	2-METHYLPHENOL (o-CRESOL)	< 50		ug/Kg	50	63	8270D/3540C	CO	MSQS_170221	a	
106-44-5	4-METHYLPHENOL (p-CRESOL)	< 50		ug/Kg	50	670	8270D/3540C	CO	MSQS_170221	a	
105-67-9	2,4-DIMETHYLPHENOL	< 25		ug/Kg	25	29	8270D/3540C	CO	MSQS_170221	a	
87-86-5	PENTACHLOROPHENOL	< 50		ug/Kg	50	360	8270D/3540C	CO	MSQS_170221	a	
100-51-6	BENZYL ALCOHOL	< 50		ug/Kg	50	57	8270D/3540C	CO	MSQS_170221	a	
65-85-0	BENZOIC ACID	< 500		ug/Kg	500	650	8270D/3540C	CO	MSQS_170221	a	

Notes:

Flags are data qualifiers. If there are data qualifiers on your report definitions can be found on an accompanying sheet.

Units - mg/Kg is parts per million, mg/Kg OC is parts per million in terms of Organic Carbon, ug/Kg is parts per billion.

Practical Quantitation Limit or PQL is the lowest level that can be achieved within specified limits of precision and accuracy during routine laboratory operating conditions.

Maximum Allowable is taken from Table 1 "Marine Sediment Quality Standards Chemical Criteria" in WAC 173-204-320.

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Burlington, WA	Corporate Laboratory (a)	1620 S Walnut St	Burlington, WA 98233	800.755.9295 • 360.757.1400
Bellingham, WA	Microbiology (b)	805 Orchard Dr Ste 4	Bellingham, WA 98225	360.715.1212
Portland, OR	Microbiology/Chemistry (c)	9150 SW Pioneer Ct Ste W	Wilsonville, OR 97070	503.682.7802
Corvallis, OR	Microbiology (d)	540 SW Third Street	Corvallis, OR 97333	541.753.4946

WSDOE Lab C567

Marine Sediment Quality Standards Chemical Criteria WAC 173-204-320

Page 1 of 2

Client Name: Aspect Consulting, LLC
401 2nd Ave S Suite 201
Seattle, WA 98104

Reference Number: **17-03594**
Project: LSE

Lab Number: 08522
Field ID: AB-03-10-13
Sample Description: AB-03-10-13
Matrix: Soil
Sample Date: 2/17/17

Report Date: 3/21/17
Date Analyzed: 2/28/17
Approved by: anp,bj,ljh,pdm
Authorized by:


Bryce Jensen
Chief Inorganic Chemist

CAS	Chemical Parameter	RESULT	Flag	Units	PQL	Maximum Allowance	Method	Analyst	Batch	Lab	Comment
Metals											
7440-38-2	ARSENIC	2.88		mg/Kg	1.02	57	6010B/3051	ANP	6010B_170228A	a	
7440-43-9	CADMIUM	< 1.02		mg/Kg	1.02	5.1	6010B/3051	ANP	6010B_170228A	a	
7440-47-3	CHROMIUM	37.0		mg/Kg	1.02	260	6010B/3051	ANP	6010B_170228A	a	
7440-50-8	COPPER	25.5		mg/Kg	1.02	390	6010B/3051	ANP	6010B_170228A	a	
7439-92-1	LEAD	< 1.02		mg/Kg	1.02	450	6010B/3051	ANP	6010B_170228A	a	
7439-97-6	MERCURY	0.0519		mg/Kg	0.0084	0.41	7471A	RHF	7471A_170224	a	
7440-22-4	SILVER	< 1.02		mg/Kg	1.02	6.1	6010B/3051	ANP	6010B_170228A	a	
7440-66-6	ZINC	46.5		mg/Kg	1.02	410	6010B/3051	ANP	6010B_170228A	a	
Polynuclear Aromatic Hydrocarbons (PAHs)											
	LOW MOLECULAR WT PAH	< 0.09		mg/Kg OC*	0.09	370	8270D/3540C	CO	MSQS_170221	a	
91-20-3	NAPHTHALENE	< 0.09		mg/Kg OC	0.09	99	8270D/3540C	CO	MSQS_170221	a	
208-96-8	ACENAPHTHYLENE	< 0.10		mg/Kg OC	0.10	66	8270D/3540C	CO	MSQS_170221	a	
83-32-9	ACENAPHTHENE	< 0.09		mg/Kg OC	0.09	16	8270D/3540C	CO	MSQS_170221	a	
86-73-7	FLUORENE	< 0.10		mg/Kg OC	0.10	23	8270D/3540C	CO	MSQS_170221	a	
85-01-8	PHENANTHRENE	< 0.09		mg/Kg OC	0.09	100	8270D/3540C	CO	MSQS_170221	a	
120-12-7	ANTHRACENE	< 0.09		mg/Kg OC	0.09	220	8270D/3540C	CO	MSQS_170221	a	
91-57-6	2-METHYLNAPHTHALENE	< 0.09		mg/Kg OC	0.09	38	8270D/3540C	CO	MSQS_170221	a	
	HIGH MOLECULAR WT PAH	< 0.08		mg/Kg OC	0.08	960	8270D/3540C	CO	MSQS_170221	a	
206-44-0	FLUORANTHENE	< 0.10		mg/Kg OC	0.10	160	8270D/3540C	CO	MSQS_170221	a	
129-00-0	PYRENE	< 0.10		mg/Kg OC	0.10	1000	8270D/3540C	CO	MSQS_170221	a	
56-55-3	BENZ[<i>a</i>]ANTHRACENE	< 0.10		mg/Kg OC	0.10	110	8270D/3540C	CO	MSQS_170221	a	
218-01-9	CHRYSENE	< 0.10		mg/Kg OC	0.10	110	8270D/3540C	CO	MSQS_170221	a	
	TOTAL BENZOFLUORANTHENES	< 0.10		mg/Kg OC	0.10	230	8270D/3540C	CO	MSQS_170221	a	

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CAS	Chemical Parameter	RESULT	Flag	Units	PQL	Maximum Allowance	Method	Analyst	Batch	Lab	Comment
50-32-8	BENZO[A]PYRENE	< 0.10		mg/Kg OC	0.10	99	8270D/3540C	CO	MSQS_170221	a	
193-39-5	INDENO[1,2,3,C,D]PYRENE	< 0.10		mg/Kg OC	0.10	34	8270D/3540C	CO	MSQS_170221	a	
53-70-3	DIBENZO[A,H]ANTHRACENE	< 0.10		mg/Kg OC	0.10	12	8270D/3540C	CO	MSQS_170221	a	
191-24-2	BENZO[G,H,I]PERYLENE	< 0.10		mg/Kg OC	0.10	31	8270D/3540C	CO	MSQS_170221	a	
Base/Neutral Extractables											
95-50-1	1,2 - DICHLOROBENZENE	< 0.05		mg/Kg OC	0.05	2.3	8270D/3540C	CO	MSQS_170221	a	
106-46-7	1,4 - DICHLOROBENZENE	< 0.05		mg/Kg OC	0.05	3.1	8270D/3540C	CO	MSQS_170221	a	
120-82-1	1,2,4-TRICHLOROBENZENE	< 0.04		mg/Kg OC	0.04	0.81	8270D/3540C	CO	MSQS_170221	a	
118-74-1	HEXACHLOROBENZENE	< 0.03		mg/Kg OC	0.03	0.38	8270D/3540C	CO	MSQS_170221	a	
131-11-3	DIMETHYL PHTHALATE	< 0.31		mg/Kg OC	0.31	53	8270D/3540C	CO	MSQS_170221	a	
84-66-2	DIETHYL PHTHALATE	< 0.33		mg/Kg OC	0.33	61	8270D/3540C	CO	MSQS_170221	a	
84-74-2	DI-N-BUTYL PHTHALATE	< 0.69		mg/Kg OC	0.69	220	8270D/3540C	CO	MSQS_170221	a	
85-68-7	BENZYL BUTYL PHTHALATE	< 0.37		mg/Kg OC	0.37	4.9	8270D/3540C	CO	MSQS_170221	a	
117-81-7	DI(2-ETHYLHEXYL)PHTHALATE	< 0.37		mg/Kg OC	0.37	47	8270D/3540C	CO	MSQS_170221	a	
117-84-0	DI-N-OCTYL PHTHALATE	< 0.37		mg/Kg OC	0.37	58	8270D/3540C	CO	MSQS_170221	a	
132-64-9	DIBENZOFURAN	< 0.09		mg/Kg OC	0.09	15	8270D/3540C	CO	MSQS_170221	a	
87-68-3	HEXACHLOROBUTADIENE	< 0.02		mg/Kg OC	0.02	3.9	8270D/3540C	CO	MSQS_170221	a	
55-18-5	N-NITROSODIPHENYLAMINE	< 0.07		mg/Kg OC	0.07	11	8270D/3540C	CO	MSQS_170221	a	
1336-36-3	PCBS (Total Aroclors)	< 0.2		mg/Kg OC	0.2	12	8082/3540C	CO	8082_S170221		
Acid Extractables											
108-95-2	PHENOL	< 50		ug/Kg	50	420	8270D/3540C	CO	MSQS_170221	a	
95-48-7	2-METHYLPHENOL (o-CRESOL)	< 50		ug/Kg	50	63	8270D/3540C	CO	MSQS_170221	a	
106-44-5	4-METHYLPHENOL (p-CRESOL)	< 50		ug/Kg	50	670	8270D/3540C	CO	MSQS_170221	a	
105-67-9	2,4-DIMETHYLPHENOL	< 25		ug/Kg	25	29	8270D/3540C	CO	MSQS_170221	a	
87-86-5	PENTACHLOROPHENOL	< 50		ug/Kg	50	360	8270D/3540C	CO	MSQS_170221	a	
100-51-6	BENZYL ALCOHOL	< 50		ug/Kg	50	57	8270D/3540C	CO	MSQS_170221	a	
65-85-0	BENZOIC ACID	< 500		ug/Kg	500	650	8270D/3540C	CO	MSQS_170221	a	

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Corvallis, OR	Microbiology (d)	540 SW Third Street	Corvallis, OR 97333	541.753.4946

WSDOE Lab C567

Marine Sediment Quality Standards Chemical Criteria WAC 173-204-320

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Client Name: Aspect Consulting, LLC
401 2nd Ave S Suite 201
Seattle, WA 98104

Reference Number: **17-03594**
Project: LSE

Lab Number: 08521
Field ID: AB-03-5-7
Sample Description: AB-03-5-7
Matrix: Soil
Sample Date: 2/17/17

Report Date: 3/21/17
Date Analyzed: 2/28/17
Approved by: anp,bj,ljh,pdm
Authorized by:


Bryce Jensen
Chief Inorganic Chemist

CAS	Chemical Parameter	RESULT	Flag	Units	PQL	Maximum Allowance	Method	Analyst	Batch	Lab	Comment
Metals											
7440-38-2	ARSENIC	1.37		mg/Kg	0.90	57	6010B/3051	ANP	6010B_170228A	a	
7440-43-9	CADMIUM	< 0.90		mg/Kg	0.90	5.1	6010B/3051	ANP	6010B_170228A	a	
7440-47-3	CHROMIUM	44.4		mg/Kg	0.90	260	6010B/3051	ANP	6010B_170228A	a	
7440-50-8	COPPER	14.6		mg/Kg	0.90	390	6010B/3051	ANP	6010B_170228A	a	
7439-92-1	LEAD	< 0.90		mg/Kg	0.90	450	6010B/3051	ANP	6010B_170228A	a	
7439-97-6	MERCURY	0.0301		mg/Kg	0.0085	0.41	7471A	RHF	7471A_170224	a	
7440-22-4	SILVER	< 0.90		mg/Kg	0.90	6.1	6010B/3051	ANP	6010B_170228A	a	
7440-66-6	ZINC	30.7		mg/Kg	0.90	410	6010B/3051	ANP	6010B_170228A	a	
Polynuclear Aromatic Hydrocarbons (PAHs)											
	LOW MOLECULAR WT PAH	< 0.09		mg/Kg OC*	0.09	370	8270D/3540C	CO	MSQS_170221	a	
91-20-3	NAPHTHALENE	< 0.09		mg/Kg OC	0.09	99	8270D/3540C	CO	MSQS_170221	a	
208-96-8	ACENAPHTHYLENE	< 0.10		mg/Kg OC	0.10	66	8270D/3540C	CO	MSQS_170221	a	
83-32-9	ACENAPHTHENE	< 0.09		mg/Kg OC	0.09	16	8270D/3540C	CO	MSQS_170221	a	
86-73-7	FLUORENE	< 0.10		mg/Kg OC	0.10	23	8270D/3540C	CO	MSQS_170221	a	
85-01-8	PHENANTHRENE	< 0.09		mg/Kg OC	0.09	100	8270D/3540C	CO	MSQS_170221	a	
120-12-7	ANTHRACENE	< 0.09		mg/Kg OC	0.09	220	8270D/3540C	CO	MSQS_170221	a	
91-57-6	2-METHYLNAPHTHALENE	< 0.09		mg/Kg OC	0.09	38	8270D/3540C	CO	MSQS_170221	a	
	HIGH MOLECULAR WT PAH	< 0.08		mg/Kg OC	0.08	960	8270D/3540C	CO	MSQS_170221	a	
206-44-0	FLUORANTHENE	< 0.10		mg/Kg OC	0.10	160	8270D/3540C	CO	MSQS_170221	a	
129-00-0	PYRENE	< 0.10		mg/Kg OC	0.10	1000	8270D/3540C	CO	MSQS_170221	a	
56-55-3	BENZ[<i>a</i>]ANTHRACENE	< 0.10		mg/Kg OC	0.10	110	8270D/3540C	CO	MSQS_170221	a	
218-01-9	CHRYSENE	< 0.10		mg/Kg OC	0.10	110	8270D/3540C	CO	MSQS_170221	a	
	TOTAL BENZOFLUORANTHENES	< 0.10		mg/Kg OC	0.10	230	8270D/3540C	CO	MSQS_170221	a	

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53-70-3	DIBENZO[A,H]ANTHRACENE	< 0.10		mg/Kg OC	0.10	12	8270D/3540C	CO	MSQS_170221	a	
191-24-2	BENZO[G,H,I]PERYLENE	< 0.10		mg/Kg OC	0.10	31	8270D/3540C	CO	MSQS_170221	a	
Base/Neutral Extractables											
95-50-1	1,2 - DICHLOROBENZENE	< 0.05		mg/Kg OC	0.05	2.3	8270D/3540C	CO	MSQS_170221	a	
106-46-7	1,4 - DICHLOROBENZENE	< 0.05		mg/Kg OC	0.05	3.1	8270D/3540C	CO	MSQS_170221	a	
120-82-1	1,2,4-TRICHLOROBENZENE	< 0.04		mg/Kg OC	0.04	0.81	8270D/3540C	CO	MSQS_170221	a	
118-74-1	HEXACHLOROBENZENE	< 0.03		mg/Kg OC	0.03	0.38	8270D/3540C	CO	MSQS_170221	a	
131-11-3	DIMETHYL PHTHALATE	< 0.31		mg/Kg OC	0.31	53	8270D/3540C	CO	MSQS_170221	a	
84-66-2	DIETHYL PHTHALATE	< 0.33		mg/Kg OC	0.33	61	8270D/3540C	CO	MSQS_170221	a	
84-74-2	DI-N-BUTYL PHTHALATE	< 0.69		mg/Kg OC	0.69	220	8270D/3540C	CO	MSQS_170221	a	
85-68-7	BENZYL BUTYL PHTHALATE	< 0.37		mg/Kg OC	0.37	4.9	8270D/3540C	CO	MSQS_170221	a	
117-81-7	DI(2-ETHYLHEXYL)PHTHALATE	< 0.37		mg/Kg OC	0.37	47	8270D/3540C	CO	MSQS_170221	a	
117-84-0	DI-N-OCTYL PHTHALATE	< 0.37		mg/Kg OC	0.37	58	8270D/3540C	CO	MSQS_170221	a	
132-64-9	DIBENZOFURAN	< 0.09		mg/Kg OC	0.09	15	8270D/3540C	CO	MSQS_170221	a	
87-68-3	HEXACHLOROBUTADIENE	< 0.02		mg/Kg OC	0.02	3.9	8270D/3540C	CO	MSQS_170221	a	
55-18-5	N-NITROSODIPHENYLAMINE	< 0.07		mg/Kg OC	0.07	11	8270D/3540C	CO	MSQS_170221	a	
1336-36-3	PCBS (Total Aroclors)	< 0.2		mg/Kg OC	0.2	12	8082/3540C	CO	8082_S170221		
Acid Extractables											
108-95-2	PHENOL	< 50		ug/Kg	50	420	8270D/3540C	CO	MSQS_170221	a	
95-48-7	2-METHYLPHENOL (o-CRESOL)	< 50		ug/Kg	50	63	8270D/3540C	CO	MSQS_170221	a	
106-44-5	4-METHYLPHENOL (p-CRESOL)	< 50		ug/Kg	50	670	8270D/3540C	CO	MSQS_170221	a	
105-67-9	2,4-DIMETHYLPHENOL	< 25		ug/Kg	25	29	8270D/3540C	CO	MSQS_170221	a	
87-86-5	PENTACHLOROPHENOL	< 50		ug/Kg	50	360	8270D/3540C	CO	MSQS_170221	a	
100-51-6	BENZYL ALCOHOL	< 50		ug/Kg	50	57	8270D/3540C	CO	MSQS_170221	a	
65-85-0	BENZOIC ACID	< 500		ug/Kg	500	650	8270D/3540C	CO	MSQS_170221	a	

Notes:

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Units - mg/Kg is parts per million, mg/Kg OC is parts per million in terms of Organic Carbon, ug/Kg is parts per billion.

Practical Quantitation Limit or PQL is the lowest level that can be achieved within specified limits of precision and accuracy during routine laboratory operating conditions.

Maximum Allowable is taken from Table 1 "Marine Sediment Quality Standards Chemical Criteria" in WAC 173-204-320.

Method - The value listed is the Analytical Method along with the Analytical Prep Method separated by a forward slash.

Batch - The analytical batch number identifies samples that were analyzed together in a group. It is also associated with all quality control processed in that sample group.



Burlington, WA	Corporate Laboratory (a)	1620 S Walnut St	Burlington, WA 98233	800.755.9295 • 360.757.1400
Bellingham, WA	Microbiology (b)	805 Orchard Dr Ste 4	Bellingham, WA 98225	360.715.1212
Portland, OR	Microbiology/Chemistry (c)	9150 SW Pioneer Ct Ste W	Wilsonville, OR 97070	503.682.7802
Corvallis, OR	Microbiology (d)	540 SW Third Street	Corvallis, OR 97333	541.753.4946

WSDOE Lab C567

Marine Sediment Quality Standards Chemical Criteria WAC 173-204-320

Page 1 of 2

Client Name: Aspect Consulting, LLC
401 2nd Ave S Suite 201
Seattle, WA 98104

Reference Number: **17-03594**
Project: LSE

Lab Number: 08520
Field ID: AB-02-10-12
Sample Description: AB-02-10-12
Matrix: Soil
Sample Date: 2/17/17

Report Date: 3/21/17
Date Analyzed: 2/28/17
Approved by: anp,bj,ljh,pdm
Authorized by:


Bryce Jensen
Chief Inorganic Chemist

CAS	Chemical Parameter	RESULT	Flag	Units	PQL	Maximum Allowance	Method	Analyst	Batch	Lab	Comment
Metals											
7440-38-2	ARSENIC	< 1.01		mg/Kg	1.01	57	6010B/3051	ANP	6010B_170228A	a	
7440-43-9	CADMIUM	< 1.01		mg/Kg	1.01	5.1	6010B/3051	ANP	6010B_170228A	a	
7440-47-3	CHROMIUM	28.4		mg/Kg	1.01	260	6010B/3051	ANP	6010B_170228A	a	
7440-50-8	COPPER	24.3		mg/Kg	1.01	390	6010B/3051	ANP	6010B_170228A	a	
7439-92-1	LEAD	< 1.01		mg/Kg	1.01	450	6010B/3051	ANP	6010B_170228A	a	
7439-97-6	MERCURY	0.0375		mg/Kg	0.0083	0.41	7471A	RHF	7471A_170224	a	
7440-22-4	SILVER	< 1.01		mg/Kg	1.01	6.1	6010B/3051	ANP	6010B_170228A	a	
7440-66-6	ZINC	44.5		mg/Kg	1.01	410	6010B/3051	ANP	6010B_170228A	a	
Polynuclear Aromatic Hydrocarbons (PAHs)											
	LOW MOLECULAR WT PAH	< 0.09		mg/Kg OC*	0.09	370	8270D/3540C	CO	MSQS_170221	a	
91-20-3	NAPHTHALENE	< 0.09		mg/Kg OC	0.09	99	8270D/3540C	CO	MSQS_170221	a	
208-96-8	ACENAPHTHYLENE	< 0.10		mg/Kg OC	0.10	66	8270D/3540C	CO	MSQS_170221	a	
83-32-9	ACENAPHTHENE	< 0.09		mg/Kg OC	0.09	16	8270D/3540C	CO	MSQS_170221	a	
86-73-7	FLUORENE	< 0.10		mg/Kg OC	0.10	23	8270D/3540C	CO	MSQS_170221	a	
85-01-8	PHENANTHRENE	< 0.09		mg/Kg OC	0.09	100	8270D/3540C	CO	MSQS_170221	a	
120-12-7	ANTHRACENE	< 0.09		mg/Kg OC	0.09	220	8270D/3540C	CO	MSQS_170221	a	
91-57-6	2-METHYLNAPHTHALENE	< 0.09		mg/Kg OC	0.09	38	8270D/3540C	CO	MSQS_170221	a	
	HIGH MOLECULAR WT PAH	< 0.08		mg/Kg OC	0.08	960	8270D/3540C	CO	MSQS_170221	a	
206-44-0	FLUORANTHENE	< 0.10		mg/Kg OC	0.10	160	8270D/3540C	CO	MSQS_170221	a	
129-00-0	PYRENE	< 0.10		mg/Kg OC	0.10	1000	8270D/3540C	CO	MSQS_170221	a	
56-55-3	BENZ[<i>a</i>]ANTHRACENE	< 0.10		mg/Kg OC	0.10	110	8270D/3540C	CO	MSQS_170221	a	
218-01-9	CHRYSENE	< 0.10		mg/Kg OC	0.10	110	8270D/3540C	CO	MSQS_170221	a	
	TOTAL BENZOFLUORANTHENES	< 0.10		mg/Kg OC	0.10	230	8270D/3540C	CO	MSQS_170221	a	

Notes:

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If you have any questions concerning this report contact us at the above phone number.

Form: cSediment.rpt

CAS	Chemical Parameter	RESULT	Flag	Units	PQL	Maximum Allowance	Method	Analyst	Batch	Lab	Comment
50-32-8	BENZO[A]PYRENE	< 0.10		mg/Kg OC	0.10	99	8270D/3540C	CO	MSQS_170221	a	
193-39-5	INDENO[1,2,3,C,D]PYRENE	< 0.10		mg/Kg OC	0.10	34	8270D/3540C	CO	MSQS_170221	a	
53-70-3	DIBENZO[A,H]ANTHRACENE	< 0.10		mg/Kg OC	0.10	12	8270D/3540C	CO	MSQS_170221	a	
191-24-2	BENZO[G,H,I]PERYLENE	< 0.10		mg/Kg OC	0.10	31	8270D/3540C	CO	MSQS_170221	a	
Base/Neutral Extractables											
95-50-1	1,2 - DICHLOROBENZENE	< 0.05		mg/Kg OC	0.05	2.3	8270D/3540C	CO	MSQS_170221	a	
106-46-7	1,4 - DICHLOROBENZENE	< 0.05		mg/Kg OC	0.05	3.1	8270D/3540C	CO	MSQS_170221	a	
120-82-1	1,2,4-TRICHLOROBENZENE	< 0.04		mg/Kg OC	0.04	0.81	8270D/3540C	CO	MSQS_170221	a	
118-74-1	HEXACHLOROBENZENE	< 0.03		mg/Kg OC	0.03	0.38	8270D/3540C	CO	MSQS_170221	a	
131-11-3	DIMETHYL PHTHALATE	< 0.31		mg/Kg OC	0.31	53	8270D/3540C	CO	MSQS_170221	a	
84-66-2	DIETHYL PHTHALATE	< 0.33		mg/Kg OC	0.33	61	8270D/3540C	CO	MSQS_170221	a	
84-74-2	DI-N-BUTYL PHTHALATE	< 0.69		mg/Kg OC	0.69	220	8270D/3540C	CO	MSQS_170221	a	
85-68-7	BENZYL BUTYL PHTHALATE	< 0.37		mg/Kg OC	0.37	4.9	8270D/3540C	CO	MSQS_170221	a	
117-81-7	DI(2-ETHYLHEXYL)PHTHALATE	< 0.37		mg/Kg OC	0.37	47	8270D/3540C	CO	MSQS_170221	a	
117-84-0	DI-N-OCTYL PHTHALATE	< 0.37		mg/Kg OC	0.37	58	8270D/3540C	CO	MSQS_170221	a	
132-64-9	DIBENZOFURAN	< 0.09		mg/Kg OC	0.09	15	8270D/3540C	CO	MSQS_170221	a	
87-68-3	HEXACHLOROBUTADIENE	< 0.02		mg/Kg OC	0.02	3.9	8270D/3540C	CO	MSQS_170221	a	
55-18-5	N-NITROSODIPHENYLAMINE	< 0.07		mg/Kg OC	0.07	11	8270D/3540C	CO	MSQS_170221	a	
1336-36-3	PCBS (Total Aroclors)	< 0.2		mg/Kg OC	0.2	12	8082/3540C	CO	8082_S170221		
Acid Extractables											
108-95-2	PHENOL	< 50		ug/Kg	50	420	8270D/3540C	CO	MSQS_170221	a	
95-48-7	2-METHYLPHENOL (o-CRESOL)	< 50		ug/Kg	50	63	8270D/3540C	CO	MSQS_170221	a	
106-44-5	4-METHYLPHENOL (p-CRESOL)	< 50		ug/Kg	50	670	8270D/3540C	CO	MSQS_170221	a	
105-67-9	2,4-DIMETHYLPHENOL	< 25		ug/Kg	25	29	8270D/3540C	CO	MSQS_170221	a	
87-86-5	PENTACHLOROPHENOL	< 50		ug/Kg	50	360	8270D/3540C	CO	MSQS_170221	a	
100-51-6	BENZYL ALCOHOL	< 50		ug/Kg	50	57	8270D/3540C	CO	MSQS_170221	a	
65-85-0	BENZOIC ACID	< 500		ug/Kg	500	650	8270D/3540C	CO	MSQS_170221	a	

Notes:

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Units - mg/Kg is parts per million, mg/Kg OC is parts per million in terms of Organic Carbon, ug/Kg is parts per billion.

Practical Quantitation Limit or PQL is the lowest level that can be achieved within specified limits of precision and accuracy during routine laboratory operating conditions.

Maximum Allowable is taken from Table 1 "Marine Sediment Quality Standards Chemical Criteria" in WAC 173-204-320.

Method - The value listed is the Analytical Method along with the Analytical Prep Method separated by a forward slash.

Batch - The analytical batch number identifies samples that were analyzed together in a group. It is also associated with all quality control processed in that sample group.



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Corvallis, OR	Microbiology (d)	540 SW Third Street	Corvallis, OR 97333	541.753.4946

WSDOE Lab C567

Marine Sediment Quality Standards Chemical Criteria WAC 173-204-320

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Client Name: Aspect Consulting, LLC
401 2nd Ave S Suite 201
Seattle, WA 98104

Reference Number: **17-03594**
Project: LSE

Lab Number: 08519
Field ID: AB-02-5-8
Sample Description: AB-02-5-8
Matrix: Soil
Sample Date: 2/17/17

Report Date: 3/21/17
Date Analyzed: 2/28/17
Approved by: anp,bj,ljh,pdm
Authorized by:


Bryce Jensen
Chief Inorganic Chemist

CAS	Chemical Parameter	RESULT	Flag	Units	PQL	Maximum Allowance	Method	Analyst	Batch	Lab	Comment
Metals											
7440-38-2	ARSENIC	2.04		mg/Kg	0.85	57	6010B/3051	ANP	6010B_170228A	a	
7440-43-9	CADMIUM	< 0.85		mg/Kg	0.85	5.1	6010B/3051	ANP	6010B_170228A	a	
7440-47-3	CHROMIUM	40.3		mg/Kg	0.85	260	6010B/3051	ANP	6010B_170228A	a	
7440-50-8	COPPER	24.3		mg/Kg	0.85	390	6010B/3051	ANP	6010B_170228A	a	
7439-92-1	LEAD	1.16		mg/Kg	0.85	450	6010B/3051	ANP	6010B_170228A	a	
7439-97-6	MERCURY	0.0240		mg/Kg	0.0082	0.41	7471A	RHF	7471A_170224	a	
7440-22-4	SILVER	< 0.85		mg/Kg	0.85	6.1	6010B/3051	ANP	6010B_170228A	a	
7440-66-6	ZINC	53.7		mg/Kg	0.85	410	6010B/3051	ANP	6010B_170228A	a	
Polynuclear Aromatic Hydrocarbons (PAHs)											
	LOW MOLECULAR WT PAH	< 0.09		mg/Kg OC*	0.09	370	8270D/3540C	CO	MSQS_170221	a	
91-20-3	NAPHTHALENE	< 0.09		mg/Kg OC	0.09	99	8270D/3540C	CO	MSQS_170221	a	
208-96-8	ACENAPHTHYLENE	< 0.10		mg/Kg OC	0.10	66	8270D/3540C	CO	MSQS_170221	a	
83-32-9	ACENAPHTHENE	< 0.09		mg/Kg OC	0.09	16	8270D/3540C	CO	MSQS_170221	a	
86-73-7	FLUORENE	< 0.10		mg/Kg OC	0.10	23	8270D/3540C	CO	MSQS_170221	a	
85-01-8	PHENANTHRENE	< 0.09		mg/Kg OC	0.09	100	8270D/3540C	CO	MSQS_170221	a	
120-12-7	ANTHRACENE	< 0.09		mg/Kg OC	0.09	220	8270D/3540C	CO	MSQS_170221	a	
91-57-6	2-METHYLNAPHTHALENE	< 0.09		mg/Kg OC	0.09	38	8270D/3540C	CO	MSQS_170221	a	
	HIGH MOLECULAR WT PAH	< 0.08		mg/Kg OC	0.08	960	8270D/3540C	CO	MSQS_170221	a	
206-44-0	FLUORANTHENE	< 0.10		mg/Kg OC	0.10	160	8270D/3540C	CO	MSQS_170221	a	
129-00-0	PYRENE	< 0.10		mg/Kg OC	0.10	1000	8270D/3540C	CO	MSQS_170221	a	
56-55-3	BENZ[<i>a</i>]ANTHRACENE	< 0.10		mg/Kg OC	0.10	110	8270D/3540C	CO	MSQS_170221	a	
218-01-9	CHRYSENE	< 0.10		mg/Kg OC	0.10	110	8270D/3540C	CO	MSQS_170221	a	
	TOTAL BENZOFLUORANTHENES	< 0.10		mg/Kg OC	0.10	230	8270D/3540C	CO	MSQS_170221	a	

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CAS	Chemical Parameter	RESULT	Flag	Units	PQL	Maximum Allowance	Method	Analyst	Batch	Lab	Comment
50-32-8	BENZO[A]PYRENE	< 0.10		mg/Kg OC	0.10	99	8270D/3540C	CO	MSQS_170221	a	
193-39-5	INDENO[1,2,3,C,D]PYRENE	< 0.10		mg/Kg OC	0.10	34	8270D/3540C	CO	MSQS_170221	a	
53-70-3	DIBENZO[A,H]ANTHRACENE	< 0.10		mg/Kg OC	0.10	12	8270D/3540C	CO	MSQS_170221	a	
191-24-2	BENZO[G,H,I]PERYLENE	< 0.10		mg/Kg OC	0.10	31	8270D/3540C	CO	MSQS_170221	a	
Base/Neutral Extractables											
95-50-1	1,2 - DICHLOROBENZENE	< 0.05		mg/Kg OC	0.05	2.3	8270D/3540C	CO	MSQS_170221	a	
106-46-7	1,4 - DICHLOROBENZENE	< 0.05		mg/Kg OC	0.05	3.1	8270D/3540C	CO	MSQS_170221	a	
120-82-1	1,2,4-TRICHLOROBENZENE	< 0.04		mg/Kg OC	0.04	0.81	8270D/3540C	CO	MSQS_170221	a	
118-74-1	HEXACHLOROBENZENE	< 0.03		mg/Kg OC	0.03	0.38	8270D/3540C	CO	MSQS_170221	a	
131-11-3	DIMETHYL PHTHALATE	< 0.31		mg/Kg OC	0.31	53	8270D/3540C	CO	MSQS_170221	a	
84-66-2	DIETHYL PHTHALATE	< 0.33		mg/Kg OC	0.33	61	8270D/3540C	CO	MSQS_170221	a	
84-74-2	DI-N-BUTYL PHTHALATE	< 0.69		mg/Kg OC	0.69	220	8270D/3540C	CO	MSQS_170221	a	
85-68-7	BENZYL BUTYL PHTHALATE	< 0.37		mg/Kg OC	0.37	4.9	8270D/3540C	CO	MSQS_170221	a	
117-81-7	DI(2-ETHYLHEXYL)PHTHALATE	< 0.37		mg/Kg OC	0.37	47	8270D/3540C	CO	MSQS_170221	a	
117-84-0	DI-N-OCTYL PHTHALATE	< 0.37		mg/Kg OC	0.37	58	8270D/3540C	CO	MSQS_170221	a	
132-64-9	DIBENZOFURAN	< 0.09		mg/Kg OC	0.09	15	8270D/3540C	CO	MSQS_170221	a	
87-68-3	HEXACHLOROBUTADIENE	< 0.02		mg/Kg OC	0.02	3.9	8270D/3540C	CO	MSQS_170221	a	
55-18-5	N-NITROSODIPHENYLAMINE	< 0.07		mg/Kg OC	0.07	11	8270D/3540C	CO	MSQS_170221	a	
1336-36-3	PCBS (Total Aroclors)	< 0.2		mg/Kg OC	0.2	12	8082/3540C	CO	8082_S170221		
Acid Extractables											
108-95-2	PHENOL	< 50		ug/Kg	50	420	8270D/3540C	CO	MSQS_170221	a	
95-48-7	2-METHYLPHENOL (o-CRESOL)	< 50		ug/Kg	50	63	8270D/3540C	CO	MSQS_170221	a	
106-44-5	4-METHYLPHENOL (p-CRESOL)	< 50		ug/Kg	50	670	8270D/3540C	CO	MSQS_170221	a	
105-67-9	2,4-DIMETHYLPHENOL	< 25		ug/Kg	25	29	8270D/3540C	CO	MSQS_170221	a	
87-86-5	PENTACHLOROPHENOL	< 50		ug/Kg	50	360	8270D/3540C	CO	MSQS_170221	a	
100-51-6	BENZYL ALCOHOL	< 50		ug/Kg	50	57	8270D/3540C	CO	MSQS_170221	a	
65-85-0	BENZOIC ACID	< 500		ug/Kg	500	650	8270D/3540C	CO	MSQS_170221	a	

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Corvallis, OR	Microbiology (d)	540 SW Third Street	Corvallis, OR 97333	541.753.4946

WSDOE Lab C567

Marine Sediment Quality Standards Chemical Criteria WAC 173-204-320

Page 1 of 2

Client Name: Aspect Consulting, LLC
401 2nd Ave S Suite 201
Seattle, WA 98104

Reference Number: **17-03594**
Project: LSE

Lab Number: 08518
Field ID: AB-01-10-13
Sample Description: AB-01-10-13
Matrix: Soil
Sample Date: 2/17/17

Report Date: 3/21/17
Date Analyzed: 2/28/17
Approved by: anp,bj,ljh,pdm
Authorized by:


Bryce Jensen
Chief Inorganic Chemist

CAS	Chemical Parameter	RESULT	Flag	Units	PQL	Maximum Allowance	Method	Analyst	Batch	Lab	Comment
Metals											
7440-38-2	ARSENIC	1.81		mg/Kg	0.92	57	6010B/3051	ANP	6010B_170228A	a	
7440-43-9	CADMIUM	< 0.92		mg/Kg	0.92	5.1	6010B/3051	ANP	6010B_170228A	a	
7440-47-3	CHROMIUM	42.9		mg/Kg	0.92	260	6010B/3051	ANP	6010B_170228A	a	
7440-50-8	COPPER	22.9		mg/Kg	0.92	390	6010B/3051	ANP	6010B_170228A	a	
7439-92-1	LEAD	0.52		mg/Kg	0.92	450	6010B/3051	ANP	6010B_170228A	a	
7439-97-6	MERCURY	0.0385		mg/Kg	0.0083	0.41	7471A	RHF	7471A_170224	a	
7440-22-4	SILVER	< 0.92		mg/Kg	0.92	6.1	6010B/3051	ANP	6010B_170228A	a	
7440-66-6	ZINC	32.6		mg/Kg	0.92	410	6010B/3051	ANP	6010B_170228A	a	
Polynuclear Aromatic Hydrocarbons (PAHs)											
	LOW MOLECULAR WT PAH	< 0.09		mg/Kg OC*	0.09	370	8270D/3540C	CO	MSQS_170221	a	
91-20-3	NAPHTHALENE	< 0.09		mg/Kg OC	0.09	99	8270D/3540C	CO	MSQS_170221	a	
208-96-8	ACENAPHTHYLENE	< 0.10		mg/Kg OC	0.10	66	8270D/3540C	CO	MSQS_170221	a	
83-32-9	ACENAPHTHENE	< 0.09		mg/Kg OC	0.09	16	8270D/3540C	CO	MSQS_170221	a	
86-73-7	FLUORENE	< 0.10		mg/Kg OC	0.10	23	8270D/3540C	CO	MSQS_170221	a	
85-01-8	PHENANTHRENE	< 0.09		mg/Kg OC	0.09	100	8270D/3540C	CO	MSQS_170221	a	
120-12-7	ANTHRACENE	< 0.09		mg/Kg OC	0.09	220	8270D/3540C	CO	MSQS_170221	a	
91-57-6	2-METHYLNAPHTHALENE	< 0.09		mg/Kg OC	0.09	38	8270D/3540C	CO	MSQS_170221	a	
	HIGH MOLECULAR WT PAH	< 0.08		mg/Kg OC	0.08	960	8270D/3540C	CO	MSQS_170221	a	
206-44-0	FLUORANTHENE	< 0.10		mg/Kg OC	0.10	160	8270D/3540C	CO	MSQS_170221	a	
129-00-0	PYRENE	< 0.10		mg/Kg OC	0.10	1000	8270D/3540C	CO	MSQS_170221	a	
56-55-3	BENZ[<i>a</i>]ANTHRACENE	< 0.10		mg/Kg OC	0.10	110	8270D/3540C	CO	MSQS_170221	a	
218-01-9	CHRYSENE	< 0.10		mg/Kg OC	0.10	110	8270D/3540C	CO	MSQS_170221	a	
	TOTAL BENZOFLUORANTHENES	< 0.10		mg/Kg OC	0.10	230	8270D/3540C	CO	MSQS_170221	a	

Notes:

Flags are data qualifiers. If there are data qualifiers on your report definitions can be found on an accompanying sheet.

Units - mg/Kg is parts per million, mg/Kg OC is parts per million in terms of Organic Carbon, ug/Kg is parts per billion.

Practical Quantitation Limit or PQL is the lowest level that can be achieved within specified limits of precision and accuracy during routine laboratory operating conditions.

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Batch - The analytical batch number identifies samples that were analyzed together in a group. It is also associated with all quality control processed in that sample group.

If you have any questions concerning this report contact us at the above phone number.

Form: cSediment.rpt

CAS	Chemical Parameter	RESULT	Flag	Units	PQL	Maximum Allowance	Method	Analyst	Batch	Lab	Comment
50-32-8	BENZO[A]PYRENE	< 0.10		mg/Kg OC	0.10	99	8270D/3540C	CO	MSQS_170221	a	
193-39-5	INDENO[1,2,3,C,D]PYRENE	< 0.10		mg/Kg OC	0.10	34	8270D/3540C	CO	MSQS_170221	a	
53-70-3	DIBENZO[A,H]ANTHRACENE	< 0.10		mg/Kg OC	0.10	12	8270D/3540C	CO	MSQS_170221	a	
191-24-2	BENZO[G,H,I]PERYLENE	< 0.10		mg/Kg OC	0.10	31	8270D/3540C	CO	MSQS_170221	a	
Base/Neutral Extractables											
95-50-1	1,2 - DICHLOROBENZENE	< 0.05		mg/Kg OC	0.05	2.3	8270D/3540C	CO	MSQS_170221	a	
106-46-7	1,4 - DICHLOROBENZENE	< 0.05		mg/Kg OC	0.05	3.1	8270D/3540C	CO	MSQS_170221	a	
120-82-1	1,2,4-TRICHLOROBENZENE	< 0.04		mg/Kg OC	0.04	0.81	8270D/3540C	CO	MSQS_170221	a	
118-74-1	HEXACHLOROBENZENE	< 0.03		mg/Kg OC	0.03	0.38	8270D/3540C	CO	MSQS_170221	a	
131-11-3	DIMETHYL PHTHALATE	< 0.31		mg/Kg OC	0.31	53	8270D/3540C	CO	MSQS_170221	a	
84-66-2	DIETHYL PHTHALATE	< 0.33		mg/Kg OC	0.33	61	8270D/3540C	CO	MSQS_170221	a	
84-74-2	DI-N-BUTYL PHTHALATE	< 0.69		mg/Kg OC	0.69	220	8270D/3540C	CO	MSQS_170221	a	
85-68-7	BENZYL BUTYL PHTHALATE	< 0.37		mg/Kg OC	0.37	4.9	8270D/3540C	CO	MSQS_170221	a	
117-81-7	DI(2-ETHYLHEXYL)PHTHALATE	< 0.37		mg/Kg OC	0.37	47	8270D/3540C	CO	MSQS_170221	a	
117-84-0	DI-N-OCTYL PHTHALATE	< 0.37		mg/Kg OC	0.37	58	8270D/3540C	CO	MSQS_170221	a	
132-64-9	DIBENZOFURAN	< 0.09		mg/Kg OC	0.09	15	8270D/3540C	CO	MSQS_170221	a	
87-68-3	HEXACHLOROBUTADIENE	< 0.02		mg/Kg OC	0.02	3.9	8270D/3540C	CO	MSQS_170221	a	
55-18-5	N-NITROSODIPHENYLAMINE	< 0.07		mg/Kg OC	0.07	11	8270D/3540C	CO	MSQS_170221	a	
1336-36-3	PCBS (Total Aroclors)	< 0.2		mg/Kg OC	0.2	12	8082/3540C	CO	8082_S170221		
Acid Extractables											
108-95-2	PHENOL	< 50		ug/Kg	50	420	8270D/3540C	CO	MSQS_170221	a	
95-48-7	2-METHYLPHENOL (o-CRESOL)	< 50		ug/Kg	50	63	8270D/3540C	CO	MSQS_170221	a	
106-44-5	4-METHYLPHENOL (p-CRESOL)	< 50		ug/Kg	50	670	8270D/3540C	CO	MSQS_170221	a	
105-67-9	2,4-DIMETHYLPHENOL	< 25		ug/Kg	25	29	8270D/3540C	CO	MSQS_170221	a	
87-86-5	PENTACHLOROPHENOL	< 50		ug/Kg	50	360	8270D/3540C	CO	MSQS_170221	a	
100-51-6	BENZYL ALCOHOL	< 50		ug/Kg	50	57	8270D/3540C	CO	MSQS_170221	a	
65-85-0	BENZOIC ACID	< 500		ug/Kg	500	650	8270D/3540C	CO	MSQS_170221	a	

Notes:

Flags are data qualifiers. If there are data qualifiers on your report definitions can be found on an accompanying sheet.

Units - mg/Kg is parts per million, mg/Kg OC is parts per million in terms of Organic Carbon, ug/Kg is parts per billion.

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Maximum Allowable is taken from Table 1 "Marine Sediment Quality Standards Chemical Criteria" in WAC 173-204-320.

Method - The value listed is the Analytical Method along with the Analytical Prep Method separated by a forward slash.

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Burlington, WA	Corporate Laboratory (a)	1620 S Walnut St	Burlington, WA 98233	800.755.9295 • 360.757.1400
Bellingham, WA	Microbiology (b)	805 Orchard Dr Ste 4	Bellingham, WA 98225	360.715.1212
Portland, OR	Microbiology/Chemistry (c)	9150 SW Pioneer Ct Ste W	Wilsonville, OR 97070	503.682.7802
Corvallis, OR	Microbiology (d)	540 SW Third Street	Corvallis, OR 97333	541.753.4946

WSDOE Lab C567

Marine Sediment Quality Standards Chemical Criteria WAC 173-204-320

Page 1 of 2

Client Name: Aspect Consulting, LLC
401 2nd Ave S Suite 201
Seattle, WA 98104

Reference Number: **17-03594**
Project: LSE

Lab Number: 08517
Field ID: AB-01-5-8
Sample Description: AB-01-5-8
Matrix: Soil
Sample Date: 2/17/17

Report Date: 3/21/17
Date Analyzed: 2/28/17
Approved by: anp,bj,ljh,pdm
Authorized by:


Bryce Jensen
Chief Inorganic Chemist

CAS	Chemical Parameter	RESULT	Flag	Units	PQL	Maximum Allowance	Method	Analyst	Batch	Lab	Comment
Metals											
7440-38-2	ARSENIC	4.49		mg/Kg	0.93	57	6010B/3051	ANP	6010B_170228A	a	
7440-43-9	CADMIUM	< 0.93		mg/Kg	0.93	5.1	6010B/3051	ANP	6010B_170228A	a	
7440-47-3	CHROMIUM	23.7		mg/Kg	0.93	260	6010B/3051	ANP	6010B_170228A	a	
7440-50-8	COPPER	23.3		mg/Kg	0.93	390	6010B/3051	ANP	6010B_170228A	a	
7439-92-1	LEAD	1.23		mg/Kg	0.93	450	6010B/3051	ANP	6010B_170228A	a	
7439-97-6	MERCURY	0.0303		mg/Kg	0.0081	0.41	7471A	RHF	7471A_170224	a	
7440-22-4	SILVER	< 0.93		mg/Kg	0.93	6.1	6010B/3051	ANP	6010B_170228A	a	
7440-66-6	ZINC	35.1		mg/Kg	0.93	410	6010B/3051	ANP	6010B_170228A	a	
Polynuclear Aromatic Hydrocarbons (PAHs)											
	LOW MOLECULAR WT PAH	< 0.09		mg/Kg OC*	0.09	370	8270D/3540C	CO	MSQS_170221	a	
91-20-3	NAPHTHALENE	< 0.09		mg/Kg OC	0.09	99	8270D/3540C	CO	MSQS_170221	a	
208-96-8	ACENAPHTHYLENE	< 0.10		mg/Kg OC	0.10	66	8270D/3540C	CO	MSQS_170221	a	
83-32-9	ACENAPHTHENE	< 0.09		mg/Kg OC	0.09	16	8270D/3540C	CO	MSQS_170221	a	
86-73-7	FLUORENE	< 0.10		mg/Kg OC	0.10	23	8270D/3540C	CO	MSQS_170221	a	
85-01-8	PHENANTHRENE	< 0.09		mg/Kg OC	0.09	100	8270D/3540C	CO	MSQS_170221	a	
120-12-7	ANTHRACENE	< 0.09		mg/Kg OC	0.09	220	8270D/3540C	CO	MSQS_170221	a	
91-57-6	2-METHYLNAPHTHALENE	< 0.09		mg/Kg OC	0.09	38	8270D/3540C	CO	MSQS_170221	a	
	HIGH MOLECULAR WT PAH	< 0.08		mg/Kg OC	0.08	960	8270D/3540C	CO	MSQS_170221	a	
206-44-0	FLUORANTHENE	< 0.10		mg/Kg OC	0.10	160	8270D/3540C	CO	MSQS_170221	a	
129-00-0	PYRENE	< 0.10		mg/Kg OC	0.10	1000	8270D/3540C	CO	MSQS_170221	a	
56-55-3	BENZ[<i>a</i>]ANTHRACENE	< 0.10		mg/Kg OC	0.10	110	8270D/3540C	CO	MSQS_170221	a	
218-01-9	CHRYSENE	< 0.10		mg/Kg OC	0.10	110	8270D/3540C	CO	MSQS_170221	a	
	TOTAL BENZOFLUORANTHENES	< 0.10		mg/Kg OC	0.10	230	8270D/3540C	CO	MSQS_170221	a	

Notes:

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Form: cSediment.rpt

CAS	Chemical Parameter	RESULT	Flag	Units	PQL	Maximum Allowance	Method	Analyst	Batch	Lab	Comment
50-32-8	BENZO[A]PYRENE	< 0.10		mg/Kg OC	0.10	99	8270D/3540C	CO	MSQS_170221	a	
193-39-5	INDENO[1,2,3,C,D]PYRENE	< 0.10		mg/Kg OC	0.10	34	8270D/3540C	CO	MSQS_170221	a	
53-70-3	DIBENZO[A,H]ANTHRACENE	< 0.10		mg/Kg OC	0.10	12	8270D/3540C	CO	MSQS_170221	a	
191-24-2	BENZO[G,H,I]PERYLENE	< 0.10		mg/Kg OC	0.10	31	8270D/3540C	CO	MSQS_170221	a	
Base/Neutral Extractables											
95-50-1	1,2 - DICHLOROBENZENE	< 0.05		mg/Kg OC	0.05	2.3	8270D/3540C	CO	MSQS_170221	a	
106-46-7	1,4 - DICHLOROBENZENE	< 0.05		mg/Kg OC	0.05	3.1	8270D/3540C	CO	MSQS_170221	a	
120-82-1	1,2,4-TRICHLOROBENZENE	< 0.04		mg/Kg OC	0.04	0.81	8270D/3540C	CO	MSQS_170221	a	
118-74-1	HEXACHLOROBENZENE	< 0.03		mg/Kg OC	0.03	0.38	8270D/3540C	CO	MSQS_170221	a	
131-11-3	DIMETHYL PHTHALATE	< 0.31		mg/Kg OC	0.31	53	8270D/3540C	CO	MSQS_170221	a	
84-66-2	DIETHYL PHTHALATE	< 0.33		mg/Kg OC	0.33	61	8270D/3540C	CO	MSQS_170221	a	
84-74-2	DI-N-BUTYL PHTHALATE	< 0.69		mg/Kg OC	0.69	220	8270D/3540C	CO	MSQS_170221	a	
85-68-7	BENZYL BUTYL PHTHALATE	< 0.37		mg/Kg OC	0.37	4.9	8270D/3540C	CO	MSQS_170221	a	
117-81-7	DI(2-ETHYLHEXYL)PHTHALATE	< 0.37		mg/Kg OC	0.37	47	8270D/3540C	CO	MSQS_170221	a	
117-84-0	DI-N-OCTYL PHTHALATE	< 0.37		mg/Kg OC	0.37	58	8270D/3540C	CO	MSQS_170221	a	
132-64-9	DIBENZOFURAN	< 0.09		mg/Kg OC	0.09	15	8270D/3540C	CO	MSQS_170221	a	
87-68-3	HEXACHLOROBUTADIENE	< 0.02		mg/Kg OC	0.02	3.9	8270D/3540C	CO	MSQS_170221	a	
55-18-5	N-NITROSODIPHENYLAMINE	< 0.07		mg/Kg OC	0.07	11	8270D/3540C	CO	MSQS_170221	a	
1336-36-3	PCBS (Total Aroclors)	< 0.2		mg/Kg OC	0.2	12	8082/3540C	CO	8082_S170221		
Acid Extractables											
108-95-2	PHENOL	< 50		ug/Kg	50	420	8270D/3540C	CO	MSQS_170221	a	
95-48-7	2-METHYLPHENOL (o-CRESOL)	< 50		ug/Kg	50	63	8270D/3540C	CO	MSQS_170221	a	
106-44-5	4-METHYLPHENOL (p-CRESOL)	< 50		ug/Kg	50	670	8270D/3540C	CO	MSQS_170221	a	
105-67-9	2,4-DIMETHYLPHENOL	< 25		ug/Kg	25	29	8270D/3540C	CO	MSQS_170221	a	
87-86-5	PENTACHLOROPHENOL	< 50		ug/Kg	50	360	8270D/3540C	CO	MSQS_170221	a	
100-51-6	BENZYL ALCOHOL	< 50		ug/Kg	50	57	8270D/3540C	CO	MSQS_170221	a	
65-85-0	BENZOIC ACID	< 500		ug/Kg	500	650	8270D/3540C	CO	MSQS_170221	a	

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SAMPLE INDEPENDENT QUALITY CONTROL REPORT

Calibration Check

Reference Number: **17-03594**

Report Date: 06/28/17

Batch	Analyte	Result	True Value	Units	Method	% Recovery	Limits*	QC Qualifier	QC Type	Comment
6010B_170228A	2 ARSENIC	0.95	1	mg/L	6010B	95	90-110	CAL		
	2 CADMIUM	0.95	1	mg/L	6010B	95	90-110	CAL		
	2 CHROMIUM	0.96	1	mg/L	6010B	96	90-110	CAL		
	2 COPPER	0.93	1	mg/L	6010B	93	90-110	CAL		
	2 LEAD	0.98	1	mg/L	6010B	98	90-110	CAL		
	2 NICKEL	0.94	1	mg/L	6010B	94	90-110	CAL		
	2 SELENIUM	0.97	1	mg/L	6010B	97	90-110	CAL		
	2 SILVER	0.48	0.5	mg/L	6010B	96	90-110	CAL		
	2 ZINC	0.95	1	mg/L	6010B	95	90-110	CAL		
6010B_170302A	2 ARSENIC	0.98	1	mg/L	6010B	98	90-110	CAL		
	2 CADMIUM	0.98	1	mg/L	6010B	98	90-110	CAL		
	2 CHROMIUM	0.98	1	mg/L	6010B	98	90-110	CAL		
	2 COPPER	0.94	1	mg/L	6010B	94	90-110	CAL		
	2 LEAD	0.99	1	mg/L	6010B	99	90-110	CAL		
	2 SILVER	0.49	0.5	mg/L	6010B	98	90-110	CAL		
	2 ZINC	0.97	1	mg/L	6010B	97	90-110	CAL		
7471A_170224	0 MERCURY	0.00194	0.00200	mg/L	7471A	97	85-115	CAL		
	0 MERCURY	0.00202	0.00200	mg/L	7471A	101	85-115	CAL		

*Notation:

% Recovery = (Result of Analysis)/(True Value) * 100

NA = Indicates % Recovery could not be calculated.

Limits are intended for water matrices only. These criteria are for guidance only when reported with soils/solids.



SAMPLE INDEPENDENT QUALITY CONTROL REPORT

Laboratory Fortified Blank

Reference Number: **17-03594**

Report Date: 06/28/17

Batch	Analyte	Result	True Value	Units	Method	% Recovery	Limits*	QC Qualifier	QC Type	Comment
6010B_170228A	0 ARSENIC	1	1	mg/L	6010B	100	85-115	LFB		
	0 CADMIUM	1.02	1	mg/L	6010B	102	85-115	LFB		
	0 CHROMIUM	1.06	1	mg/L	6010B	106	85-115	LFB		
	0 COPPER	1.02	1	mg/L	6010B	102	85-115	LFB		
	0 LEAD	1.03	1	mg/L	6010B	103	85-115	LFB		
	0 NICKEL	1.07	1	mg/L	6010B	107	85-115	LFB		
	0 SELENIUM	1.05	1	mg/L	6010B	105	85-115	LFB		
	0 SILVER	0.47	0.5	mg/L	6010B	94	85-115	LFB		
	0 ZINC	1.06	1	mg/L	6010B	106	85-115	LFB		
6010B_170302A	0 ARSENIC	0.88	1	mg/L	6010B	88	85-115	LFB		
	0 CADMIUM	0.96	1	mg/L	6010B	96	85-115	LFB		
	0 CHROMIUM	0.99	1	mg/L	6010B	99	85-115	LFB		
	0 COPPER	0.91	1	mg/L	6010B	91	85-115	LFB		
	0 LEAD	0.96	1	mg/L	6010B	96	85-115	LFB		
	0 SILVER	0.45	0.5	mg/L	6010B	90	85-115	LFB		
	0 ZINC	0.94	1	mg/L	6010B	94	85-115	LFB		
7471A_170224	0 MERCURY	0.00208	0.00200	mg/L	7471A	104	85-115	LFB		
7471A_170228	0 MERCURY	0.002080	0.00200	mg/L	7471A	104	85-115	LFB		
8082_S170221	0 PCBS (Total Aroclors)	0.15	0.2	mg/Kg	8082	75	85-115	LFB		
8082_S170227	0 PCBS (Total Aroclors)	0.16	0.2	mg/Kg	8082	80	85-115	LFB		
DXS_170223	0 DIESEL (C12 - C24)	93.0	125	mg/Kg	NWTPH-Dx	74	70-130	LFB		
DXS_170227	0 DIESEL (C12 - C24)	107	125	mg/Kg	NWTPH-Dx	86	70-130	LFB		
MSQS_170221	0 1,2 - DICHLOROBENZENE	0.41	0.49	mg/Kg OC	8270D	84	32-129	LFB		
	0 1,2,4-TRICHLOROBENZENE	0.3	0.4	mg/Kg OC	8270D	75	44-142	LFB		
	0 1,4 - DICHLOROBENZENE	0.4	0.49	mg/Kg OC	8270D	82	20-124	LFB		

*Notation:

% Recovery = (Result of Analysis)/(True Value) * 100

NA = Indicates % Recovery could not be calculated.

Limits are intended for water matrices only. These criteria are for guidance only when reported with soils/solids.



SAMPLE INDEPENDENT QUALITY CONTROL REPORT

Laboratory Fortified Blank

Reference Number: **17-03594**

Report Date: 06/28/17

Batch	Analyte	Result	True Value	Units	Method	% Recovery	Limits*	QC Qualifier	QC Type	Comment
MSQS_170221	0 2,4-DIMETHYLPHENOL	470	1000	ug/Kg	8270D	47	32-119		LFB	
	0 2-METHYLNAPHTHALENE	0.68	0.86	mg/Kg OC	8270D	79	70-130		LFB	
	0 2-METHYLPHENOL (o-CRESOL)	910	1000	ug/Kg	8270D	91	40-160		LFB	
	0 4-METHYLPHENOL (p-CRESOL)	860	1000	ug/Kg	8270D	86	25-125		LFB	
	0 ACENAPHTHYLENE	0.71	0.95	mg/Kg OC	8270D	75	33-145		LFB	
	0 ACENAPHTHENE	0.74	0.94	mg/Kg OC	8270D	79	47-145		LFB	
	0 ANTHRACENE	0.76	0.94	mg/Kg OC	8270D	81	27-133		LFB	
	0 BENZ[A]ANTHRACENE	0.63	0.95	mg/Kg OC	8270D	66	33-143		LFB	
	0 BENZO[A]PYRENE	0.66	0.95	mg/Kg OC	8270D	69	17-163		LFB	
	0 BENZO[G,H,I]PERYLENE	0.71	0.96	mg/Kg OC	8270D	74	1-219		LFB	
	0 BENZOIC ACID	1310	2000	ug/Kg	8270D	66	70-130		LFB	
	0 BENZYL ALCOHOL	630	1000	ug/Kg	8270D	63	35-140		LFB	
	0 BENZYL BUTYL PHTHALATE	0.31	0.73	mg/Kg OC	8270D	42	1-152		LFB	
	0 CHRYSENE	0.79	0.95	mg/Kg OC	8270D	83	17-168		LFB	
	0 DI(2-ETHYLHEXYL)PHTHALATE	0.28	0.74	mg/Kg OC	8270D	38	60-140	LR	LFB	
	0 DIBENZO[A,H]ANTHRACENE	0.72	0.95	mg/Kg OC	8270D	76	1-227		LFB	
	0 DIBENZOFURAN	0.7	0.86	mg/Kg OC	8270D	81	50-130		LFB	
	0 DIETHYL PHTHALATE	0.55	0.65	mg/Kg OC	8270D	85	1-114		LFB	
	0 DIMETHYL PHTHALATE	0.54	0.62	mg/Kg OC	8270D	87	1-114		LFB	
	0 DI-N-BUTYL PHTHALATE	0.68	0.69	mg/Kg OC	8270D	99	1-118		LFB	
	0 DI-N-OCTYL PHTHALATE	0.16	0.74	mg/Kg OC	8270D	22	4-146		LFB	
	0 FLUORANTHENE	0.74	0.95	mg/Kg OC	8270D	78	26-137		LFB	
	0 FLUORENE	0.75	0.94	mg/Kg OC	8270D	80	59-121		LFB	
	0 HEXACHLOROBENZENE	0.2	0.25	mg/Kg OC	8270D	80	1-152		LFB	
	0 HEXACHLOROBUTADIENE	0.15	0.18	mg/Kg OC	8270D	83	24-116		LFB	
	0 INDENO[1,2,3-C,D]PYRENE	0.66	0.96	mg/Kg OC	8270D	69	1-171		LFB	
	0 NAPHTHALENE	0.74	0.94	mg/Kg OC	8270D	79	21-133		LFB	
	0 N-NITROSODIPHENYLAMINE	0.6	0.73	mg/Kg OC	8270D	82	70-130		LFB	
	0 PENTACHLOROPHENOL	420	1000	ug/Kg	8270D	42	14-176		LFB	
	0 PHENANTHRENE	0.76	0.94	mg/Kg OC	8270D	81	54-120		LFB	
	0 PHENOL	1080	1000	ug/Kg	8270D	108	5-112		LFB	
	0 PYRENE	0.7	0.95	mg/Kg OC	8270D	74	52-115		LFB	

*Notation:

% Recovery = (Result of Analysis)/(True Value) * 100

NA = Indicates % Recovery could not be calculated.

Limits are intended for water matrices only. These criteria are for guidance only when reported with soils/solids.



SAMPLE INDEPENDENT QUALITY CONTROL REPORT

Laboratory Fortified Blank

Reference Number: **17-03594**

Report Date: 06/28/17

Batch	Analyte	Result	True Value	Units	Method	% Recovery	Limits*	QC Qualifier	QC Type	Comment
MSQS_170227	0 1,2 - DICHLOROBENZENE	0.49	0.49	mg/Kg	OC 8270D	100	32-129		LFB	
	0 1,2,4-TRICHLOROBENZENE	0.39	0.4	mg/Kg	OC 8270D	98	44-142		LFB	
	0 1,4 - DICHLOROBENZENE	0.5	0.49	mg/Kg	OC 8270D	102	20-124		LFB	
	0 2,4-DIMETHYLPHENOL	2760	3000	ug/Kg	8270D	92	32-119		LFB	
	0 2-METHYLNAPHTHALENE	0.78	0.86	mg/Kg	OC 8270D	91	70-130		LFB	
	0 2-METHYLPHENOL (o-CRESOL)	3290	3000	ug/Kg	8270D	110	40-160		LFB	
	0 4-METHYLPHENOL (p-CRESOL)	5810	5000	ug/Kg	8270D	116	25-125		LFB	
	0 ACENAPHTHYLENE	0.85	0.95	mg/Kg	OC 8270D	89	33-145		LFB	
	0 ACENAPHTHENE	0.88	0.94	mg/Kg	OC 8270D	94	47-145		LFB	
	0 ANTHRACENE	0.97	0.94	mg/Kg	OC 8270D	103	27-133		LFB	
	0 BENZ[A]ANTHRACENE	0.84	0.95	mg/Kg	OC 8270D	88	33-143		LFB	
	0 BENZO[A]PYRENE	0.91	0.95	mg/Kg	OC 8270D	96	17-163		LFB	
	0 BENZO[G,H,I]PERYLENE	1.07	0.96	mg/Kg	OC 8270D	111	1-219		LFB	
	0 BENZOIC ACID	1310	2000	ug/Kg	8270D	66	70-130	LR	LFB	
	0 BENZYL ALCOHOL	790	1000	ug/Kg	8270D	79	35-140		LFB	
	0 BENZYL BUTYL PHTHALATE	0.53	0.73	mg/Kg	OC 8270D	73	1-152		LFB	
	0 CHRYSENE	0.93	0.95	mg/Kg	OC 8270D	98	17-168		LFB	
	0 DI(2-ETHYLHEXYL)PHTHALATE	0.61	0.74	mg/Kg	OC 8270D	82	60-140		LFB	
	0 DIBENZO[A,H]ANTHRACENE	1.07	0.95	mg/Kg	OC 8270D	113	1-227		LFB	
	0 DIBENZOFURAN	0.82	0.86	mg/Kg	OC 8270D	95	50-130		LFB	
	0 DIETHYL PHTHALATE	0.58	0.65	mg/Kg	OC 8270D	89	1-114		LFB	
	0 DIMETHYL PHTHALATE	0.54	0.62	mg/Kg	OC 8270D	87	1-114		LFB	
	0 DI-N-BUTYL PHTHALATE	0.82	0.69	mg/Kg	OC 8270D	119	1-118	B8	LFB	
	0 DI-N-OCTYL PHTHALATE	0.38	0.74	mg/Kg	OC 8270D	51	4-146		LFB	
	0 FLUORANTHENE	0.89	0.95	mg/Kg	OC 8270D	94	26-137		LFB	
	0 FLUORENE	0.87	0.94	mg/Kg	OC 8270D	93	59-121		LFB	
	0 HEXACHLOROBENZENE	0.23	0.25	mg/Kg	OC 8270D	92	1-152		LFB	
	0 HEXACHLOROBUTADIENE	0.17	0.18	mg/Kg	OC 8270D	94	24-116		LFB	
	0 INDENO[1,2,3,C,D]PYRENE	1.01	0.96	mg/Kg	OC 8270D	105	1-171		LFB	
	0 NAPHTHALENE	0.97	0.94	mg/Kg	OC 8270D	103	21-133		LFB	
	0 N-NITROSODIPHENYLAMINE	0.7	0.73	mg/Kg	OC 8270D	96	70-130		LFB	

*Notation:

% Recovery = (Result of Analysis)/(True Value) * 100

NA = Indicates % Recovery could not be calculated.

Limits are intended for water matrices only. These criteria are for guidance only when reported with soils/solids.



SAMPLE INDEPENDENT QUALITY CONTROL REPORT

Laboratory Fortified Blank

Reference Number: **17-03594**

Report Date: 06/28/17

Batch	Analyte	Result	True Value	Units	Method	% Recovery	Limits*	QC Qualifier	QC Type	Comment
MSQS_170227	0 PENTACHLOROPHENOL	2220	2000	ug/Kg	8270D	111	14-176	LFB		
	0 PHENANTHRENE	0.96	0.94	mg/Kg	OC 8270D	102	54-120	LFB		
	0 PHENOL	2950	3000	ug/Kg	8270D	98	5-112	LFB		
	0 PYRENE	0.87	0.95	mg/Kg	OC 8270D	92	52-115	LFB		
PAH_S170221	0 1-METHYLNAPHTHALENE	0.7	1	mg/Kg	8270D	70	70-130	LFB		
	0 2-METHYLNAPHTHALENE	0.76	1	mg/Kg	8270D	76	70-130	LFB		
	0 ACENAPHTHYLENE	0.7	1	mg/Kg	8270D	70	33-145	LFB		
	0 ACENAPHTHENE	0.79	1	mg/Kg	8270D	79	47-145	LFB		
	0 ANTHRACENE	0.75	1	mg/Kg	8270D	75	27-133	LFB		
	0 BENZ[A]ANTHRACENE	0.62	1	mg/Kg	8270D	62	33-143	LFB		
	0 BENZO[A]PYRENE	0.67	1	mg/Kg	8270D	67	17-163	LFB		
	0 BENZO[B/J]FLUORANTHENE	0.56	1	mg/Kg	8270D	56	24-159	LFB		
	0 BENZO[G,H,I]PERYLENE	0.77	1	mg/Kg	8270D	77	1-219	LFB		
	0 BENZO[K]FLUORANTHENE	0.75	1	mg/Kg	8270D	75	11-162	LFB		
	0 CHRYSENE	0.79	1	mg/Kg	8270D	79	17-168	LFB		
	0 DIBENZ[A,H]ANTHRACENE	0.71	1	mg/Kg	8270D	71	1-227	LFB		
	0 FLUORANTHENE	0.76	1	mg/Kg	8270D	76	26-137	LFB		
	0 FLUORENE	0.82	1	mg/Kg	8270D	82	59-121	LFB		
	0 INDENO[1,2,3,C,D]PYRENE	0.62	1	mg/Kg	8270D	62	1-171	LFB		
	0 NAPHTHALENE	0.78	1	mg/Kg	8270D	78	21-133	LFB		
	0 PHENANTHRENE	0.76	1	mg/Kg	8270D	76	54-120	LFB		
	0 PYRENE	0.75	1	mg/Kg	8270D	75	52-115	LFB		
PAH_S170227	0 2-METHYLNAPHTHALENE	0.91	1	mg/Kg	8270D	91	70-130	LFB		
	0 ACENAPHTHYLENE	0.9	1	mg/Kg	8270D	90	33-145	LFB		
	0 ACENAPHTHENE	0.94	1	mg/Kg	8270D	94	47-145	LFB		
	0 ANTHRACENE	1.03	1	mg/Kg	8270D	103	27-133	LFB		
	0 BENZ[A]ANTHRACENE	0.88	1	mg/Kg	8270D	88	33-143	LFB		
	0 BENZO[A]PYRENE	0.96	1	mg/Kg	8270D	96	17-163	LFB		
	0 BENZO[B/J]FLUORANTHENE	0.93	1	mg/Kg	8270D	93	24-159	LFB		
	0 BENZO[G,H,I]PERYLENE	1.12	1	mg/Kg	8270D	112	1-219	LFB		

*Notation:

% Recovery = (Result of Analysis)/(True Value) * 100

NA = Indicates % Recovery could not be calculated.

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SAMPLE INDEPENDENT QUALITY CONTROL REPORT

Laboratory Fortified Blank

Reference Number: **17-03594**

Report Date: 06/28/17

Batch	Analyte	Result	True		Method	%	Recovery	Limits*	QC		Comment
			Value	Units					Qualifier	Type	
PAH_S170227	0 BENZO[K]FLUORANTHENE	0.91	1	mg/Kg	8270D	91	11-162			LFB	
	0 CHRYSENE	0.98	1	mg/Kg	8270D	98	17-168			LFB	
	0 DIBENZ[A,H]ANTHRACENE	1.13	1	mg/Kg	8270D	113	1-227			LFB	
	0 FLUORANTHENE	0.94	1	mg/Kg	8270D	94	26-137			LFB	
	0 FLUORENE	0.93	1	mg/Kg	8270D	93	59-121			LFB	
	0 INDENO[1,2,3-C,D]PYRENE	1.05	1	mg/Kg	8270D	105	1-171			LFB	
	0 NAPHTHALENE	1.04	1	mg/Kg	8270D	104	21-133			LFB	
	0 PHENANTHRENE	1.02	1	mg/Kg	8270D	102	54-120			LFB	
	0 PYRENE	0.92	1	mg/Kg	8270D	92	52-115			LFB	

*Notation:

% Recovery = (Result of Analysis)/(True Value) * 100

NA = Indicates % Recovery could not be calculated.

Limits are intended for water matrices only. These criteria are for guidance only when reported with soils/solids.



SAMPLE INDEPENDENT QUALITY CONTROL REPORT

Laboratory Reagent Blank

Reference Number: **17-03594**

Report Date: 06/28/17

Batch	Analyte	Result	True Value	Units	Method	% Recovery	Limits*	QC Qualifier	QC Type	Comment
6010B_170228A	0 ARSENIC	ND		mg/L	6010B	0-0		LRB		
	0 CADMIUM	ND		mg/L	6010B	0-0		LRB		
	0 CHROMIUM	ND		mg/L	6010B	0-0		LRB		
	0 COPPER	ND		mg/L	6010B	0-0		LRB		
	0 LEAD	ND		mg/L	6010B	0-0		LRB		
	0 NICKEL	ND		mg/L	6010B	0-0		LRB		
	0 SELENIUM	ND		mg/L	6010B	0-0		LRB		
	0 SILVER	ND		mg/L	6010B	0-0		LRB		
	0 ZINC	ND		mg/L	6010B	0-0		LRB		
6010B_170302A	0 ARSENIC	ND		mg/L	6010B	0-0		LRB		
	0 CADMIUM	ND		mg/L	6010B	0-0		LRB		
	0 CHROMIUM	ND		mg/L	6010B	0-0		LRB		
	0 COPPER	ND		mg/L	6010B	0-0		LRB		
	0 LEAD	ND		mg/L	6010B	0-0		LRB		
	0 SILVER	ND		mg/L	6010B	0-0		LRB		
	0 ZINC	ND		mg/L	6010B	0-0		LRB		

*Notation:

% Recovery = (Result of Analysis)/(True Value) * 100

NA = Indicates % Recovery could not be calculated.

Limits are intended for water matrices only. These criteria are for guidance only when reported with soils/solids.



SAMPLE INDEPENDENT QUALITY CONTROL REPORT

Method Blank

Reference Number: **17-03594**

Report Date: 06/28/17

Batch	Analyte	Result	True Value	Units	Method	% Recovery	Limits*	QC Qualifier	QC Type	Comment
6010B_170228A	0 ARSENIC	ND		mg/L	6010B	0-0		MB		
	0 CADMIUM	ND		mg/L	6010B	0-0		MB		
	0 CHROMIUM	ND		mg/L	6010B	0-0		MB		
	0 COPPER	ND		mg/L	6010B	0-0		MB		
	0 LEAD	ND		mg/L	6010B	0-0		MB		
	0 NICKEL	ND		mg/L	6010B	0-0		MB		
	0 SELENIUM	ND		mg/L	6010B	0-0		MB		
	0 SILVER	ND		mg/L	6010B	0-0		MB		
	0 ZINC	ND		mg/L	6010B	0-0		MB		
6010B_170302A	0 ARSENIC	ND		mg/L	6010B	0-0		MB		
	0 CADMIUM	ND		mg/L	6010B	0-0		MB		
	0 CHROMIUM	ND		mg/L	6010B	0-0		MB		
	0 COPPER	ND		mg/L	6010B	0-0		MB		
	0 LEAD	ND		mg/L	6010B	0-0		MB		
	0 SILVER	ND		mg/L	6010B	0-0		MB		
	0 ZINC	ND		mg/L	6010B	0-0		MB		
7471A_170224	0 MERCURY	ND		mg/L	7471A	0-0		MB		
7471A_170228	0 MERCURY	ND		mg/L	7471A	0-0		MB		
8082_S170221	0 PCBS (Total Aroclors)	ND		mg/Kg	8082	0-0		MB		
8082_S170227	0 PCBS (Total Aroclors)	ND		mg/Kg	8082	0-0		MB		
DXS_170223	0 DIESEL (C12 - C24)	ND		mg/Kg	NWTPH-Dx	0-0		MB		
	0 HEAVIER OILS (>C24)	ND		mg/Kg	NWTPH-Dx	0-0		MB		
DXS_170227	0 DIESEL (C12 - C24)	ND		mg/Kg	NWTPH-Dx	0-0		MB		
	0 HEAVIER OILS (>C24)	ND		mg/Kg	NWTPH-Dx	0-0		MB		
MSQS_170221	0 1,2 - DICHLOROBENZENE	ND		mg/Kg OC	8270D	0-0		MB		

*Notation:

% Recovery = (Result of Analysis)/(True Value) * 100

NA = Indicates % Recovery could not be calculated.

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SAMPLE INDEPENDENT QUALITY CONTROL REPORT

Method Blank

Reference Number: **17-03594**

Report Date: 06/28/17

Batch	Analyte	Result	True		Method	% Recovery		QC		Comment
			Value	Units		Limits*		Qualifier	Type	
MSQS_170221	0 1,2,4-TRICHLOROBENZENE	ND		mg/Kg OC	8270D	0-0		MB		
	0 1,4 - DICHLOROBENZENE	ND		mg/Kg OC	8270D	0-0		MB		
	0 2,4-DIMETHYLPHENOL	ND		ug/Kg	8270D	0-0		MB		
	0 2-METHYLNAPHTHALENE	ND		mg/Kg OC	8270D	0-0		MB		
	0 2-METHYLPHENOL (o-CRESOL)	ND		ug/Kg	8270D	0-0		MB		
	0 4-METHYLPHENOL (p-CRESOL)	ND		ug/Kg	8270D	0-0		MB		
	0 ACENAPHTHYLENE	ND		mg/Kg OC	8270D	0-0		MB		
	0 ACENAPHTHENE	ND		mg/Kg OC	8270D	0-0		MB		
	0 ANTHRACENE	ND		mg/Kg OC	8270D	0-0		MB		
	0 BENZ[A]ANTHRACENE	ND		mg/Kg OC	8270D	0-0		MB		
	0 BENZO[A]PYRENE	ND		mg/Kg OC	8270D	0-0		MB		
	0 BENZO[G,H,I]PERYLENE	ND		mg/Kg OC	8270D	0-0		MB		
	0 BENZOIC ACID	ND		ug/Kg	8270D	0-0		MB		
	0 BENZYL ALCOHOL	ND		ug/Kg	8270D	0-0		MB		
	0 BENZYL BUTYL PHTHALATE	ND		mg/Kg OC	8270D	0-0		MB		
	0 CHRYSENE	ND		mg/Kg OC	8270D	0-0		MB		
	0 DI(2-ETHYLHEXYL)PHTHALATE	ND		mg/Kg OC	8270D	0-0		MB		
	0 DIBENZO[A,H]ANTHRACENE	ND		mg/Kg OC	8270D	0-0		MB		
	0 DIBENZOFURAN	ND		mg/Kg OC	8270D	0-0		MB		
	0 DIETHYL PHTHALATE	ND		mg/Kg OC	8270D	0-0		MB		
	0 DIMETHYL PHTHALATE	ND		mg/Kg OC	8270D	0-0		MB		
	0 DI-N-BUTYL PHTHALATE	ND		mg/Kg OC	8270D	0-0		MB		
	0 DI-N-OCTYL PHTHALATE	ND		mg/Kg OC	8270D	0-0		MB		
	0 FLUORANTHENE	ND		mg/Kg OC	8270D	0-0		MB		
	0 FLUORENE	ND		mg/Kg OC	8270D	0-0		MB		
	0 HEXACHLOROBENZENE	ND		mg/Kg OC	8270D	0-0		MB		
	0 HEXACHLOROBUTADIENE	ND		mg/Kg OC	8270D	0-0		MB		
	0 INDENO[1,2,3,C,D]PYRENE	ND		mg/Kg OC	8270D	0-0		MB		
	0 NAPHTHALENE	ND		mg/Kg OC	8270D	0-0		MB		
	0 N-NITROSODIPHENYLAMINE	ND		mg/Kg OC	8270D	0-0		MB		
	0 PENTACHLOROPHENOL	ND		ug/Kg	8270D	0-0		MB		
	0 PHENANTHRENE	ND		mg/Kg OC	8270D	0-0		MB		

*Notation:

% Recovery = (Result of Analysis)/(True Value) * 100

NA = Indicates % Recovery could not be calculated.

Limits are intended for water matrices only. These criteria are for guidance only when reported with soils/solids.



SAMPLE INDEPENDENT QUALITY CONTROL REPORT

Method Blank

Reference Number: **17-03594**

Report Date: 06/28/17

Batch	Analyte	Result	True Value	Units	Method	% Recovery	Limits*	QC Qualifier	QC Type	Comment
MSQS_170221	0 PHENOL	ND		ug/Kg	8270D		0-0		MB	
	0 PYRENE	ND		mg/Kg OC	8270D		0-0		MB	
MSQS_170227	0 1,2 - DICHLOROBENZENE	ND		mg/Kg OC	8270D		0-0		MB	
	0 1,2,4-TRICHLOROBENZENE	ND		mg/Kg OC	8270D		0-0		MB	
	0 1,4 - DICHLOROBENZENE	ND		mg/Kg OC	8270D		0-0		MB	
	0 2,4-DIMETHYLPHENOL	ND		ug/Kg	8270D		0-0		MB	
	0 2-METHYLNAPHTHALENE	ND		mg/Kg OC	8270D		0-0		MB	
	0 2-METHYLPHENOL (o-CRESOL)	ND		ug/Kg	8270D		0-0		MB	
	0 4-METHYLPHENOL (p-CRESOL)	ND		ug/Kg	8270D		0-0		MB	
	0 ACENAPHTHYLENE	ND		mg/Kg OC	8270D		0-0		MB	
	0 ACENAPTHENE	ND		mg/Kg OC	8270D		0-0		MB	
	0 ANTHRACENE	ND		mg/Kg OC	8270D		0-0		MB	
	0 BENZ[A]ANTHRACENE	ND		mg/Kg OC	8270D		0-0		MB	
	0 BENZO[A]PYRENE	ND		mg/Kg OC	8270D		0-0		MB	
	0 BENZO[G,H,I]PERYLENE	ND		mg/Kg OC	8270D		0-0		MB	
	0 BENZOIC ACID	ND		ug/Kg	8270D		0-0		MB	
	0 BENZYL ALCOHOL	ND		ug/Kg	8270D		0-0		MB	
	0 BENZYL BUTYL PHTHALATE	ND		mg/Kg OC	8270D		0-0		MB	
	0 CHRYSENE	ND		mg/Kg OC	8270D		0-0		MB	
	0 DI(2-ETHYLHEXYL)PHTHALATE	ND		mg/Kg OC	8270D		0-0		MB	
	0 DIBENZO[A,H]ANTHRACENE	ND		mg/Kg OC	8270D		0-0		MB	
	0 DIBENZOFURAN	ND		mg/Kg OC	8270D		0-0		MB	
	0 DIETHYL PHTHALATE	ND		mg/Kg OC	8270D		0-0		MB	
	0 DIMETHYL PHTHALATE	ND		mg/Kg OC	8270D		0-0		MB	
	0 DI-N-BUTYL PHTHALATE	0.3		mg/Kg OC	8270D		0-0	b0	MB	
	0 DI-N-OCTYL PHTHALATE	ND		mg/Kg OC	8270D		0-0		MB	
	0 FLUORANTHENE	ND		mg/Kg OC	8270D		0-0		MB	
	0 FLUORENE	ND		mg/Kg OC	8270D		0-0		MB	
	0 HEXACHLOROBENZENE	ND		mg/Kg OC	8270D		0-0		MB	
	0 HEXACHLOROBUTADIENE	ND		mg/Kg OC	8270D		0-0		MB	
	0 INDENO[1,2,3,C,D]PYRENE	ND		mg/Kg OC	8270D		0-0		MB	

*Notation:

% Recovery = (Result of Analysis)/(True Value) * 100

NA = Indicates % Recovery could not be calculated.

Limits are intended for water matrices only. These criteria are for guidance only when reported with soils/solids.



SAMPLE INDEPENDENT QUALITY CONTROL REPORT

Method Blank

Reference Number: **17-03594**

Report Date: 06/28/17

Batch	Analyte	Result	True Value	Units	Method	% Recovery	Limits*	QC Qualifier	QC Type	Comment
MSQS_170227	0 NAPHTHALENE	ND		mg/Kg	OC 8270D		0-0		MB	
	0 N-NITROSODIPHENYLAMINE	ND		mg/Kg	OC 8270D		0-0		MB	
	0 PENTACHLOROPHENOL	ND		ug/Kg	8270D		0-0		MB	
	0 PHENANTHRENE	ND		mg/Kg	OC 8270D		0-0		MB	
	0 PHENOL	ND		ug/Kg	8270D		0-0		MB	
	0 PYRENE	ND		mg/Kg	OC 8270D		0-0		MB	
PAH_S170221	0 1-METHYLNAPHTHALENE	ND		mg/Kg	8270D		0-0		MB	
	0 2-METHYLNAPHTHALENE	ND		mg/Kg	8270D		0-0		MB	
	0 ACENAPHTHYLENE	ND		mg/Kg	8270D		0-0		MB	
	0 ACENAPHTHENE	ND		mg/Kg	8270D		0-0		MB	
	0 ANTHRACENE	ND		mg/Kg	8270D		0-0		MB	
	0 BENZ[A]ANTHRACENE	ND		mg/Kg	8270D		0-0		MB	
	0 BENZO[A]PYRENE	ND		mg/Kg	8270D		0-0		MB	
	0 BENZO[B/J]FLUORANTHENE	ND		mg/Kg	8270D		0-0		MB	
	0 BENZO[G,H,I]PERYLENE	ND		mg/Kg	8270D		0-0		MB	
	0 BENZO[K]FLUORANTHENE	ND		mg/Kg	8270D		0-0		MB	
	0 CHRYSENE	ND		mg/Kg	8270D		0-0		MB	
	0 DIBENZ[A,H]ANTHRACENE	ND		mg/Kg	8270D		0-0		MB	
	0 FLUORANTHENE	ND		mg/Kg	8270D		0-0		MB	
	0 FLUORENE	ND		mg/Kg	8270D		0-0		MB	
	0 INDENO[1,2,3,C,D]PYRENE	ND		mg/Kg	8270D		0-0		MB	
	0 NAPHTHALENE	ND		mg/Kg	8270D		0-0		MB	
	0 PHENANTHRENE	ND		mg/Kg	8270D		0-0		MB	
	0 PYRENE	ND		mg/Kg	8270D		0-0		MB	
PAH_S170227	0 2-METHYLNAPHTHALENE	ND		mg/Kg	8270D		0-0		MB	
	0 ACENAPHTHYLENE	ND		mg/Kg	8270D		0-0		MB	
	0 ACENAPHTHENE	ND		mg/Kg	8270D		0-0		MB	
	0 ANTHRACENE	ND		mg/Kg	8270D		0-0		MB	
	0 BENZ[A]ANTHRACENE	ND		mg/Kg	8270D		0-0		MB	
	0 BENZO[A]PYRENE	ND		mg/Kg	8270D		0-0		MB	

*Notation:

% Recovery = (Result of Analysis)/(True Value) * 100

NA = Indicates % Recovery could not be calculated.

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SAMPLE INDEPENDENT QUALITY CONTROL REPORT

Method Blank

Reference Number: **17-03594**

Report Date: 06/28/17

Batch	Analyte	Result	True		Method	% Recovery		QC		Comment
			Value	Units		Limits*		Qualifier	Type	
PAH_S170227	0 BENZO[B/J]FLUORANTHENE	ND		mg/Kg	8270D	0-0		MB		
	0 BENZO[G,H,I]PERYLENE	ND		mg/Kg	8270D	0-0		MB		
	0 BENZO[K]FLUORANTHENE	ND		mg/Kg	8270D	0-0		MB		
	0 CHRYSENE	ND		mg/Kg	8270D	0-0		MB		
	0 DIBENZ[A,H]ANTHRACENE	ND		mg/Kg	8270D	0-0		MB		
	0 FLUORANTHENE	ND		mg/Kg	8270D	0-0		MB		
	0 FLUORENE	ND		mg/Kg	8270D	0-0		MB		
	0 INDENO[1,2,3,C,D]PYRENE	ND		mg/Kg	8270D	0-0		MB		
	0 NAPHTHALENE	ND		mg/Kg	8270D	0-0		MB		
	0 PHENANTHRENE	ND		mg/Kg	8270D	0-0		MB		
	0 PYRENE	ND		mg/Kg	8270D	0-0		MB		

*Notation:

% Recovery = (Result of Analysis)/(True Value) * 100

NA = Indicates % Recovery could not be calculated.

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SAMPLE INDEPENDENT QUALITY CONTROL REPORT

Quality Control Sample

Reference Number: **17-03594**

Report Date: 06/28/17

Batch	Analyte	Result	True Value	Units	Method	% Recovery	Limits*	QC Qualifier	QC Type	Comment
6010B_170228A	0 ARSENIC	1.94	2	mg/L	6010B	97	90-110		QCS	
	0 CADMIUM	1.93	2	mg/L	6010B	97	90-110		QCS	
	0 CHROMIUM	1.97	2	mg/L	6010B	99	90-110		QCS	
	0 COPPER	1.99	2	mg/L	6010B	100	90-110		QCS	
	0 LEAD	1.98	2	mg/L	6010B	99	90-110		QCS	
	0 NICKEL	1.98	2	mg/L	6010B	99	90-110		QCS	
	0 SELENIUM	1.92	2	mg/L	6010B	96	90-110		QCS	
	0 SILVER	0.51	0.5	mg/L	6010B	102	90-110		QCS	
	0 ZINC	1.93	2	mg/L	6010B	97	90-110		QCS	
6010B_170302A	0 ARSENIC	1.98	2	mg/L	6010B	99	90-110		QCS	
	0 CADMIUM	1.98	2	mg/L	6010B	99	90-110		QCS	
	0 CHROMIUM	2.03	2	mg/L	6010B	102	90-110		QCS	
	0 COPPER	2.01	2	mg/L	6010B	101	90-110		QCS	
	0 LEAD	2.01	2	mg/L	6010B	101	90-110		QCS	
	0 SILVER	0.52	0.5	mg/L	6010B	104	90-110		QCS	
	0 ZINC	1.99	2	mg/L	6010B	100	90-110		QCS	

*Notation:

% Recovery = (Result of Analysis)/(True Value) * 100

NA = Indicates % Recovery could not be calculated.

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Reference Number: **17-03594**

Report Date: 6/28/2017

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SAMPLE DEPENDENT QUALITY CONTROL REPORT

Duplicate, Matrix Spike/Matrix Spike Duplicate and Confirmation Result Report

Batch	Sample	Analyte	Duplicate		Units	%RPD	Limits	QC		
			Result	Result				Qualifier	Type	Comments
Duplicate										
6010B_170228A										
	8526	ARSENIC	2.76	1.58	mg/Kg	54.4	0-20	INH	DUP	
	8526	CADMIUM	ND	ND	mg/Kg	NA	0-20		DUP	
	8526	CHROMIUM	43.7	32.0	mg/Kg	30.9	0-20	INH	DUP	
	8526	COPPER	25.4	21.8	mg/Kg	15.3	0-20		DUP	
	8526	LEAD	1.03	0.72	mg/Kg	35.4	0-20	INH	DUP	
	8526	SILVER	ND	ND	mg/Kg	NA	0-20		DUP	
	8526	ZINC	41.3	38.8	mg/Kg	6.2	0-20		DUP	
	8531	ARSENIC	ND	ND	mg/Kg	NA	0-20		DUP	
	8531	CADMIUM	ND	ND	mg/Kg	NA	0-20		DUP	
	8531	CHROMIUM	22.6	35.3	mg/Kg	43.9	0-20	INH	DUP	
	8531	COPPER	26.1	27.8	mg/Kg	6.3	0-20		DUP	
	8531	LEAD	1.42	1.11	mg/Kg	24.5	0-20	INH	DUP	
	8531	SILVER	ND	ND	mg/Kg	NA	0-20		DUP	
	8531	ZINC	60.9	66.7	mg/Kg	9.1	0-20		DUP	
6010B_170302A										
	8532	ARSENIC	2.24	2.14	mg/Kg	4.6	0-20		DUP	
	8532	CADMIUM	ND	ND	mg/Kg	NA	0-20		DUP	
	8532	CHROMIUM	23.8	21.7	mg/Kg	9.2	0-20		DUP	
	8532	COPPER	18.1	14.6	mg/Kg	21.4	0-20	INH	DUP	
	8532	LEAD	10.1	11.4	mg/Kg	12.1	0-20		DUP	
	8532	SILVER	ND	ND	mg/Kg	NA	0-20		DUP	
	8532	ZINC	41.6	40.2	mg/Kg	3.4	0-20		DUP	
	10107	ARSENIC	ND	ND	mg/Kg	NA	0-20		DUP	
	10107	CADMIUM	ND	ND	mg/Kg	NA	0-20		DUP	

%RPD = Relative Percent Difference

NA = Indicates %RPD could not be calculated

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FORM: QC Dependent.rpt

Batch	Sample	Analyte	Duplicate		Units	%RPD	Limits	QC		
			Result	Result				Qualifier	Type	Comments
	10107	CHROMIUM	15.8	15.8	mg/Kg	0.0	0-20		DUP	
	10107	COPPER	54.6	54.7	mg/Kg	0.2	0-20		DUP	
	10107	LEAD	1.60	1.68	mg/Kg	4.9	0-20		DUP	
	10107	ZINC	125	119	mg/Kg	4.9	0-20		DUP	
7471A_170224										
	8517	MERCURY	0.0303	0.0317	mg/Kg	4.5	0-50		DUP	
	8526	MERCURY	0.0367	0.0357	mg/Kg	2.8	0-50		DUP	
7471A_170228										
	9242	MERCURY	0.0277	0.1029	mg/Kg	115.2	0-50		DUP	
DXS_170223										
	9243	DIESEL (C12 - C24)	ND	ND	mg/Kg	NA	0-30		DUP	
	9243	HEAVIER OILS (>C24)	ND	ND	mg/Kg	NA	0-30		DUP	
DXS_170227										
	8532	DIESEL (C12 - C24)	ND	ND	mg/Kg	NA	0-30		DUP	
	8532	HEAVIER OILS (>C24)	1450	1260	mg/Kg	14.0	0-30		DUP	
	9568	DIESEL (C12 - C24)	ND	ND	mg/Kg	NA	0-30		DUP	
	9568	HEAVIER OILS (>C24)	ND	ND	mg/Kg	NA	0-30		DUP	
H2S_170320										
	13984	HYDROGEN SULFIDE	ND	ND	mg/L	NA	0-20		DUP	
MSQS_170221										
	8520	1,2 - DICHLOROBENZENE	ND	ND	mg/Kg OC	NA	0-60		DUP	
	8520	1,2,4-TRICHLOROBENZENE	ND	ND	mg/Kg OC	NA	0-60		DUP	
	8520	1,4 - DICHLOROBENZENE	ND	ND	mg/Kg OC	NA	0-60		DUP	
	8520	2 - FLUOROBIPHENYL (Surr)	83	85	%	2.4	0-60		DUP	
	8520	2 - FLUOROPHENOL (Surr)	30	24	%	22.2	0-60		DUP	
	8520	2,4,6 - TRIBROMOPHENOL (Surr)	71	80	%	11.9	0-60		DUP	
	8520	2,4-DIMETHYLPHENOL	ND	ND	ug/Kg	NA	0-60		DUP	
	8520	2-METHYLNAPHTHALENE	ND	ND	mg/Kg OC	NA	0-60		DUP	
	8520	2-METHYLPHENOL (o-CRESOL)	ND	ND	ug/Kg	NA	0-60		DUP	
	8520	4-METHYLPHENOL (p-CRESOL)	ND	ND	ug/Kg	NA	0-60		DUP	
	8520	ACENAPHTHYLENE	ND	ND	mg/Kg OC	NA	0-60		DUP	
	8520	ACENAPHTHENE	ND	ND	mg/Kg OC	NA	0-60		DUP	
	8520	ANTHRACENE	ND	ND	mg/Kg OC	NA	0-60		DUP	
	8520	BENZ[A]ANTHRACENE	ND	ND	mg/Kg OC	NA	0-60		DUP	

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FORM: QC Dependent.rpt

Batch	Sample	Analyte	Duplicate		Units	%RPD	Limits	QC		
			Result	Result				Qualifier	Type	Comments
	8520	BENZO[A]PYRENE	ND	ND	mg/Kg OC	NA	0-60		DUP	
	8520	BENZO[G,H,I]PERYLENE	ND	ND	mg/Kg OC	NA	0-60		DUP	
	8520	BENZOIC ACID	ND	ND	ug/Kg	NA	0-60		DUP	
	8520	BENZYL ALCOHOL	ND	ND	ug/Kg	NA	0-60		DUP	
	8520	BENZYL BUTYL PHTHALATE	ND	ND	mg/Kg OC	NA	0-60		DUP	
	8520	CHRYSENE	ND	ND	mg/Kg OC	NA	0-60		DUP	
	8520	d5-NITROBENZENE (Surr)	65	64	%	1.6	0-60		DUP	
	8520	d5-PHENOL (Surr)	50	40	%	22.2	0-60		DUP	
	8520	DI(2-ETHYLHEXYL)PHTHALATE	ND	ND	mg/Kg OC	NA	0-60		DUP	
	8520	DIBENZO[A,H]ANTHRACENE	ND	ND	mg/Kg OC	NA	0-60		DUP	
	8520	DIBENZOFURAN	ND	ND	mg/Kg OC	NA	0-60		DUP	
	8520	DIETHYL PHTHALATE	ND	ND	mg/Kg OC	NA	0-60		DUP	
	8520	DIMETHYL PHTHALATE	ND	ND	mg/Kg OC	NA	0-60		DUP	
	8520	DI-N-BUTYL PHTHALATE	ND	ND	mg/Kg OC	NA	0-60		DUP	
	8520	DI-N-OCTYL PHTHALATE	ND	ND	mg/Kg OC	NA	0-60		DUP	
	8520	FLUORANTHENE	ND	ND	mg/Kg OC	NA	0-60		DUP	
	8520	FLUORENE	ND	ND	mg/Kg OC	NA	0-60		DUP	
	8520	HEXACHLOROBENZENE	ND	ND	mg/Kg OC	NA	0-60		DUP	
	8520	HEXACHLOROBUTADIENE	ND	ND	mg/Kg OC	NA	0-60		DUP	
	8520	HIGH MOLECULAR WT PAH	ND	ND	mg/Kg OC	NA	0-60		DUP	
	8520	INDENO[1,2,3,C,D]PYRENE	ND	ND	mg/Kg OC	NA	0-60		DUP	
	8520	LOW MOLECULAR WT PAH	ND	ND	mg/Kg OC*	NA	0-60		DUP	
	8520	NAPHTHALENE	ND	ND	mg/Kg OC	NA	0-60		DUP	
	8520	N-NITROSODIPHENYLAMINE	ND	ND	mg/Kg OC	NA	0-60		DUP	
	8520	PENTACHLOROPHENOL	ND	ND	ug/Kg	NA	0-60		DUP	
	8520	PHENANTHRENE	ND	ND	mg/Kg OC	NA	0-60		DUP	
	8520	PHENOL	ND	ND	ug/Kg	NA	0-60		DUP	
	8520	p-TERPHENYL-d14 (Surr)	76	82	%	7.6	0-60		DUP	
	8520	PYRENE	ND	ND	mg/Kg OC	NA	0-60		DUP	
	8520	TOTAL BENZOFLUORANTHENES	ND	ND	mg/Kg OC	NA	0-60		DUP	
MSQS_170227										
	8532	1,2 - DICHLOROBENZENE	ND	ND	mg/Kg OC	NA	0-60		DUP	
	8532	1,2,4-TRICHLOROBENZENE	ND	ND	mg/Kg OC	NA	0-60		DUP	
	8532	1,4 - DICHLOROBENZENE	ND	ND	mg/Kg OC	NA	0-60		DUP	

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FORM: QC Dependent.rpt

Batch	Sample	Analyte	Duplicate		Units	%RPD	Limits	QC		
			Result	Result				Qualifier	Type	Comments
8532	2 - FLUOROBIPHENYL (Surr)		110	118	%	7.0	0-60		DUP	
8532	2 - FLUOROPHENOL (Surr)		65	77	%	16.9	0-60		DUP	
8532	2,4,6 - TRIBROMOPHENOL (Surr)		82	74	%	10.3	0-60		DUP	
8532	2,4-DIMETHYLPHENOL		ND	ND	ug/Kg	NA	0-60		DUP	
8532	2-METHYLNAPHTHALENE		ND	ND	mg/Kg OC	NA	0-60		DUP	
8532	2-METHYLPHENOL (o-CRESOL)		ND	ND	ug/Kg	NA	0-60		DUP	
8532	4-METHYLPHENOL (p-CRESOL)		ND	ND	ug/Kg	NA	0-60		DUP	
8532	ACENAPHTHYLENE		ND	ND	mg/Kg OC	NA	0-60		DUP	
8532	ACENAPHTHENE		ND	ND	mg/Kg OC	NA	0-60		DUP	
8532	ANTHRACENE		ND	ND	mg/Kg OC	NA	0-60		DUP	
8532	BENZ[A]ANTHRACENE		ND	ND	mg/Kg OC	NA	0-60		DUP	
8532	BENZO[A]PYRENE		ND	ND	mg/Kg OC	NA	0-60		DUP	
8532	BENZO[G,H,I]PERYLENE		ND	ND	mg/Kg OC	NA	0-60		DUP	
8532	BENZOIC ACID		ND	ND	ug/Kg	NA	0-60		DUP	
8532	BENZYL ALCOHOL		ND	ND	ug/Kg	NA	0-60		DUP	
8532	BENZYL BUTYL PHTHALATE		ND	ND	mg/Kg OC	NA	0-60		DUP	
8532	CHRYSENE		0.27	0.30	mg/Kg OC	10.5	0-60		DUP	
8532	d5-NITROBENZENE (Surr)		104	96	%	8.0	0-60		DUP	
8532	d5-PHENOL (Surr)		92	96	%	4.3	0-60		DUP	
8532	DI(2-ETHYLHEXYL)PHTHALATE		ND	ND	mg/Kg OC	NA	0-60		DUP	
8532	DIBENZO[A,H]ANTHRACENE		ND	ND	mg/Kg OC	NA	0-60		DUP	
8532	DIBENZOFURAN		ND	ND	mg/Kg OC	NA	0-60		DUP	
8532	DIETHYL PHTHALATE		ND	ND	mg/Kg OC	NA	0-60		DUP	
8532	DIMETHYL PHTHALATE		ND	ND	mg/Kg OC	NA	0-60		DUP	
8532	DI-N-BUTYL PHTHALATE		ND	ND	mg/Kg OC	NA	0-60		DUP	
8532	DI-N-OCTYL PHTHALATE		ND	ND	mg/Kg OC	NA	0-60		DUP	
8532	FLUORANTHENE		0.24	0.25	mg/Kg OC	4.1	0-60		DUP	
8532	FLUORENE		ND	ND	mg/Kg OC	NA	0-60		DUP	
8532	HEXACHLOROBENZENE		ND	ND	mg/Kg OC	NA	0-60		DUP	
8532	HEXACHLOROBUTADIENE		ND	ND	mg/Kg OC	NA	0-60		DUP	
8532	HIGH MOLECULAR WT PAH		0.71	0.76	mg/Kg OC	6.8	0-60		DUP	
8532	INDENO[1,2,3,C,D]PYRENE		ND	ND	mg/Kg OC	NA	0-60		DUP	
8532	LOW MOLECULAR WT PAH		0.12	0.14	mg/Kg OC*	15.4	0-60		DUP	
8532	NAPHTHALENE		ND	ND	mg/Kg OC	NA	0-60		DUP	

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			Result	Result				Qualifier	Type	Comments
	8532	N-NITROSODIPHENYLAMINE	ND	ND	mg/Kg OC	NA	0-60		DUP	
	8532	PENTACHLOROPHENOL	ND	ND	ug/Kg	NA	0-60		DUP	
	8532	PHENANTHRENE	0.12	0.14	mg/Kg OC	15.4	0-60		DUP	
	8532	PHENOL	ND	ND	ug/Kg	NA	0-60		DUP	
	8532	p-TERPHENYL-d14 (Surr)	94	94	%	0.0	0-60		DUP	
	8532	PYRENE	0.20	0.21	mg/Kg OC	4.9	0-60		DUP	
	8532	TOTAL BENZOFLUORANTHENES	ND	ND	mg/Kg OC	NA	0-60		DUP	
PAH_S170221										
	8487	1-METHYLNAPHTHALENE	1370	1550	mg/Kg	12.3	0-60		DUP	
	8487	2 - FLUOROBIPHENYL (Surr)	-	-	%	NA	0-60		DUP	
	8487	2-METHYLNAPHTHALENE	2790	2670 E	mg/Kg	4.4	0-60		DUP	
	8487	ACENAPHTHYLENE	ND	ND	mg/Kg	NA	0-60		DUP	
	8487	ACENAPTHENE	16	20	mg/Kg	22.2	0-60		DUP	
	8487	ANTHRACENE	ND	ND	mg/Kg	NA	0-60		DUP	
	8487	BENZ[A]ANTHRACENE	ND	ND	mg/Kg	NA	0-60		DUP	
	8487	BENZO[A]PYRENE	ND	ND	mg/Kg	NA	0-60		DUP	
	8487	BENZO[B/J]FLUORANTHENE	ND	ND	mg/Kg	NA	0-60		DUP	
	8487	BENZO[G,H,I]PERYLENE	ND	ND	mg/Kg	NA	0-60		DUP	
	8487	BENZO[K]FLUORANTHENE	ND	ND	mg/Kg	NA	0-60		DUP	
	8487	CHRYSENE	ND	ND	mg/Kg	NA	0-60		DUP	
	8487	d5-NITROBENZENE (Surr)	-	-	%	NA	0-60		DUP	
	8487	DIBENZ[A,H]ANTHRACENE	ND	ND	mg/Kg	NA	0-60		DUP	
	8487	FLUORANTHENE	ND	ND	mg/Kg	NA	0-60		DUP	
	8487	FLUORENE	45	47	mg/Kg	4.3	0-60		DUP	
	8487	INDENO[1,2,3,C,D]PYRENE	ND	ND	mg/Kg	NA	0-60		DUP	
	8487	NAPHTHALENE	1110	1240	mg/Kg	11.1	0-60		DUP	
	8487	PHENANTHRENE	69	68	mg/Kg	1.5	0-60		DUP	
	8487	p-TERPHENYL-d14 (Surr)	-	-	%	NA	0-60		DUP	
	8487	PYRENE	ND	ND	mg/Kg	NA	0-60		DUP	
	8520	2 - FLUOROBIPHENYL (Surr)	83	85	%	2.4	0-60		DUP	
	8520	2-METHYLNAPHTHALENE	ND	ND	mg/Kg	NA	0-60		DUP	
	8520	ACENAPHTHYLENE	ND	ND	mg/Kg	NA	0-60		DUP	
	8520	ACENAPTHENE	ND	ND	mg/Kg	NA	0-60		DUP	
	8520	ANTHRACENE	ND	ND	mg/Kg	NA	0-60		DUP	

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Batch	Sample	Analyte	Duplicate		Units	%RPD	Limits	QC		
			Result	Result				Qualifier	Type	Comments
	8520	BENZ[A]ANTHRACENE	ND	ND	mg/Kg	NA	0-60		DUP	
	8520	BENZO[A]PYRENE	ND	ND	mg/Kg	NA	0-60		DUP	
	8520	BENZO[B/J]FLUORANTHENE	ND	ND	mg/Kg	NA	0-60		DUP	
	8520	BENZO[G,H,I]PERYLENE	ND	ND	mg/Kg	NA	0-60		DUP	
	8520	BENZO[K]FLUORANTHENE	ND	ND	mg/Kg	NA	0-60		DUP	
	8520	CHRYSENE	ND	ND	mg/Kg	NA	0-60		DUP	
	8520	d5-NITROBENZENE (Surr)	65	64	%	1.6	0-60		DUP	
	8520	DIBENZ[A,H]ANTHRACENE	ND	ND	mg/Kg	NA	0-60		DUP	
	8520	FLUORANTHENE	ND	ND	mg/Kg	NA	0-60		DUP	
	8520	FLUORENE	ND	ND	mg/Kg	NA	0-60		DUP	
	8520	INDENO[1,2,3,C,D]PYRENE	ND	ND	mg/Kg	NA	0-60		DUP	
	8520	NAPHTHALENE	ND	ND	mg/Kg	NA	0-60		DUP	
	8520	PHENANTHRENE	ND	ND	mg/Kg	NA	0-60		DUP	
	8520	p-TERPHENYL-d14 (Surr)	76	82	%	7.6	0-60		DUP	
	8520	PYRENE	ND	ND	mg/Kg	NA	0-60		DUP	
PAH_S170227										
	8532	2 - FLUOROBIPHENYL (Surr)	110	110	%	0.0	0-60		DUP	
	8532	2-METHYLNAPHTHALENE	ND	ND	mg/Kg	NA	0-60		DUP	
	8532	ACENAPHTHYLENE	ND	ND	mg/Kg	NA	0-60		DUP	
	8532	ACENAPTHENE	ND	ND	mg/Kg	NA	0-60		DUP	
	8532	ANTHRACENE	ND	ND	mg/Kg	NA	0-60		DUP	
	8532	BENZ[A]ANTHRACENE	ND	ND	mg/Kg	NA	0-60		DUP	
	8532	BENZO[A]PYRENE	ND	ND	mg/Kg	NA	0-60		DUP	
	8532	BENZO[B/J]FLUORANTHENE	ND	ND	mg/Kg	NA	0-60		DUP	
	8532	BENZO[G,H,I]PERYLENE	ND	ND	mg/Kg	NA	0-60		DUP	
	8532	BENZO[K]FLUORANTHENE	ND	ND	mg/Kg	NA	0-60		DUP	
	8532	CHRYSENE	0.29	0.32	mg/Kg	9.8	0-60		DUP	
	8532	d5-NITROBENZENE (Surr)	104	96	%	8.0	0-60		DUP	
	8532	DIBENZ[A,H]ANTHRACENE	ND	ND	mg/Kg	NA	0-60		DUP	
	8532	FLUORANTHENE	0.25	0.27	mg/Kg	7.7	0-60		DUP	
	8532	FLUORENE	ND	ND	mg/Kg	NA	0-60		DUP	
	8532	INDENO[1,2,3,C,D]PYRENE	ND	ND	mg/Kg	NA	0-60		DUP	
	8532	NAPHTHALENE	ND	ND	mg/Kg	NA	0-60		DUP	
	8532	PHENANTHRENE	0.13	0.15	mg/Kg	14.3	0-60		DUP	

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				Result					Qualifier	Type	
TS_170221	8532	p-TERPHENYL-d14 (Surr)	94	94		%	0.0	0-60		DUP	
	8532	PYRENE	0.21	0.22		mg/Kg	4.7	0-60		DUP	
	7397	TOTAL SOLIDS FOR CALCULATION	60.49	59.44		%	1.8	0-20		DUP	
	8523	TOTAL SOLIDS FOR CALCULATION	75.00	73.96		%	1.4	0-20		DUP	
	8532	TOTAL SOLIDS FOR CALCULATION	89.56	88.47		%	1.2	0-20		DUP	

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					Spike Result	Spike Conc			MS	MSD				Qualifier	Type	Comments
Laboratory Fortified Matrix (MS)																
6010B_170228A																
	8526	ARSENIC	2.76	88.1	90.0	99.1	mg/Kg	86	88	75-125	2.2	0-20			LFM	
	8526	CADMIUM	ND	77.1	79.9	99.1	mg/Kg	78	81	75-125	3.6	0-20			LFM	
	8526	CHROMIUM	43.7	121	117	99.1	mg/Kg	78	74	75-125	5.3	0-20			LFM	
	8526	COPPER	25.4	108	112	99.1	mg/Kg	83	87	75-125	4.7	0-20			LFM	
	8526	LEAD	1.03	79.0	79.0	99.1	mg/Kg	79	79	75-125	0.0	0-20			LFM	
	8526	SILVER	ND	37.4	38.1	49.6	mg/Kg	75	77	75-125	1.9	0-20			LFM	
	8526	ZINC	41.3	117	118	99.1	mg/Kg	76	77	75-125	1.3	0-20			LFM	
	8531	ARSENIC	ND	90.6	89.7	102	mg/Kg	89	88	75-125	1.0	0-20			LFM	
	8531	CADMIUM	ND	80.4	82.3	102	mg/Kg	79	81	75-125	2.3	0-20			LFM	
	8531	CHROMIUM	22.6	123	118	102	mg/Kg	98	94	75-125	5.1	0-20			LFM	
	8531	COPPER	26.1	116	116	102	mg/Kg	88	88	75-125	0.0	0-20			LFM	
	8531	LEAD	1.42	81.7	85.7	102	mg/Kg	79	83	75-125	4.9	0-20			LFM	
	8531	SILVER	ND	39.3	36.2	51.6	mg/Kg	76	70	75-125	8.2	0-20			LFM	
	8531	ZINC	60.9	149	151	102	mg/Kg	86	88	75-125	2.2	0-20			LFM	
6010B_170302A																
	8532	ARSENIC	2.24	84.1	88.8	90.0	mg/Kg	91	96	75-125	5.6	0-20			LFM	
	8532	CADMIUM	ND	77.1	74.5	90.0	mg/Kg	86	83	75-125	3.4	0-20			LFM	
	8532	CHROMIUM	23.8	98.0	131	90.0	mg/Kg	82	119	75-125	36.4	0-20	IM		LFM	
	8532	COPPER	18.1	97.7	134	90.0	mg/Kg	88	129	75-125	37.1	0-20	IM		LFM	
	8532	LEAD	10.1	84.6	93.2	90.0	mg/Kg	83	92	75-125	10.9	0-20			LFM	
	8532	SILVER	ND	35.2	36.4	45.0	mg/Kg	78	81	75-125	3.4	0-20			LFM	
	8532	ZINC	41.6	109	131	90.0	mg/Kg	75	99	75-125	28.1	0-20	IM		LFM	
	10107	ARSENIC	ND	162	167	186	mg/Kg	87	90	75-125	3.0	0-20			LFM	
	10107	CADMIUM	ND	153	156	186	mg/Kg	82	84	75-125	1.9	0-20			LFM	
	10107	CHROMIUM	15.8	192	183	186	mg/Kg	95	90	75-125	5.2	0-20			LFM	
	10107	COPPER	54.6	206	215	186	mg/Kg	81	86	75-125	5.8	0-20			LFM	
	10107	LEAD	1.60	157	161	186	mg/Kg	84	86	75-125	2.5	0-20			LFM	
	10107	ZINC	125	270	273	186	mg/Kg	78	80	75-125	2.0	0-20			LFM	
7471A_170224																
	8517	MERCURY	0.0303	0.1336	0.1375	0.0807	mg/Kg	128	133	70-130	3.7	0-20	IM		LFM	
	8526	MERCURY	0.0367	0.1315	0.1337	0.0819	mg/Kg	116	118	70-130	2.3	0-20			LFM	
7471A_170228																

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				Spike Result	Spike Result			MS	MSD						
8082_S170221	9242	MERCURY	0.0277	0.1377	0.1347	0.0834	mg/Kg	132	128	70-130	2.8	0-20	INH	LFM	
	8521	PCBS (Total Aroclors)	ND	0.17		0.2	mg/Kg	85	NA	85-115	NA	0-20		LFM	
8082_S170227	8536	PCBS (Total Aroclors)	ND	0.19		0.2	mg/Kg	95	NA	85-115	NA	0-20		LFM	
	13984	HYDROGEN SULFIDE	ND	1.020		1.000	mg/L	102		80-120	NA	0-20		LFM	
MSQS_170221	8518	1,2 - DICHLOROBENZENE	ND	0.28	0.15	0.49	mg/Kg OC	57	31	32-129	60.5	0-60		LFM	
	8518	1,2,4-TRICHLOROBENZENE	ND	0.32	0.31	0.4	mg/Kg OC	80	78	44-142	3.2	0-60		LFM	
	8518	1,4 - DICHLOROBENZENE	ND	0.26	0.13	0.49	mg/Kg OC	53	27	20-124	66.7	0-60		LFM	
	8518	2 - FLUOROBIPHENYL (Surr)	88	90	100		%		NA	70-130	NA	0-60		LFM	
	8518	2 - FLUOROPHENOL (Surr)	24	32	83		%		NA	70-130	NA	0-60		LFM	
	8518	2,4-DIMETHYLPHENOL	ND	750	940	1000	ug/Kg	75	94	32-119	22.5	0-60		LFM	
	8518	2-METHYLNAPHTHALENE	ND	0.71	0.76	0.86	mg/Kg OC	83	88	70-130	6.8	0-60		LFM	
	8518	2-METHYLPHENOL (o-CRESOL)	ND	770	1010	1000	ug/Kg	77	101	40-160	27.0	0-60		LFM	
	8518	4-METHYLPHENOL (p-CRESOL)	ND	760	1000	1000	ug/Kg	76	100	25-125	27.3	0-60		LFM	
	8518	ACENAPHTHYLENE	ND	0.78	0.84	0.95	mg/Kg OC	82	88	33-145	7.4	0-60		LFM	
	8518	ACENAPHTHENE	ND	0.81	0.95	0.94	mg/Kg OC	86	101	47-145	15.9	0-60		LFM	
	8518	ANTHRACENE	ND	0.87	0.91	0.94	mg/Kg OC	93	97	27-133	4.5	0-60		LFM	
	8518	BENZ[A]ANTHRACENE	ND	0.75	0.83	0.95	mg/Kg OC	79	87	33-143	10.1	0-60		LFM	
	8518	BENZO[A]PYRENE	ND	0.8	0.9	0.95	mg/Kg OC	84	95	17-163	11.8	0-60		LFM	
	8518	BENZO[G,H,I]PERYLENE	ND	0.89	1.15	0.96	mg/Kg OC	93	120	1-219	25.5	0-60		LFM	
	8518	BENZYL ALCOHOL	ND	590	550	1000	ug/Kg	59	55	35-140	7.0	0-60		LFM	
	8518	BENZYL BUTYL PHTHALATE	ND	0.47	0.72	0.73	mg/Kg OC	64	99	1-152	42.0	0-60		LFM	
	8518	CHRYSENE	ND	0.91	0.91	0.95	mg/Kg OC	96	96	17-168	0.0	0-60		LFM	
	8518	d5-NITROBENZENE (Surr)	62	69	84		%		NA	70-130	NA	0-60		LFM	
	8518	d5-PHENOL (Surr)	41	55	100		%		NA	70-130	NA	0-60		LFM	
	8518	DI(2-ETHYLHEXYL)PHTHALATE	ND	0.55	0.69	0.74	mg/Kg OC	74	93	60-140	22.6	0-60		LFM	
	8518	DIBENZO[A,H]ANTHRACENE	ND	0.85	1.1	0.95	mg/Kg OC	89	116	1-227	25.6	0-60		LFM	
	8518	DIBENZOFURAN	ND	0.76	0.85	0.86	mg/Kg OC	88	99	50-130	11.2	0-60		LFM	
	8518	DIETHYL PHTHALATE	ND	0.53	0.71	0.65	mg/Kg OC	82	109	1-114	29.0	0-60		LFM	
	8518	DIMETHYL PHTHALATE	ND	0.52	0.53	0.62	mg/Kg OC	84	85	1-114	1.9	0-60		LFM	
	8518	DI-N-BUTYL PHTHALATE	ND	1.03	1.32	0.69	mg/Kg OC	149	191	1-118	24.7	0-60	B3	LFM	

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				Spike Result	Spike Result			MS	MSD				Qualifier	Type	Comments
	8518	DI-N-OCTYL PHTHALATE	ND	0.32	0.53	0.74	mg/Kg OC	43	72	4-146	49.4	0-60		LFM	
	8518	FLUORANTHENE	ND	0.78	1.08	0.95	mg/Kg OC	82	114	26-137	32.3	0-60		LFM	
	8518	FLUORENE	ND	0.78	0.9	0.94	mg/Kg OC	83	96	59-121	14.3	0-60		LFM	
	8518	HEXACHLOROBENZENE	ND	0.2	0.27	0.25	mg/Kg OC	80	108	1-152	29.8	0-60		LFM	
	8518	HEXACHLOROBUTADIENE	ND	0.13	0.12	0.18	mg/Kg OC	72	67	24-116	8.0	0-60		LFM	
	8518	INDENO[1,2,3-C,D]PYRENE	ND	0.77	1.11	0.96	mg/Kg OC	80	116	1-171	36.2	0-60		LFM	
	8518	NAPHTHALENE	ND	0.84	0.88	0.94	mg/Kg OC	89	94	21-133	4.7	0-60		LFM	
	8518	N-NITROSODIPHENYLAMINE	ND	0.64	0.92	0.73	mg/Kg OC	88	126	70-130	35.9	0-60		LFM	
	8518	PENTACHLOROPHENOL	ND	510	760	1000	ug/Kg	51	76	14-176	39.4	0-60		LFM	
	8518	PHENANTHRENE	ND	0.87	0.96	0.94	mg/Kg OC	93	102	54-120	9.8	0-60		LFM	
	8518	PHENOL	ND	540	900	1000	ug/Kg	54	90	5-112	50.0	0-60		LFM	
	8518	p-TERPHENYL-d14 (Surr)	79	84	97		%		NA	70-130	NA	0-60		LFM	
	8518	PYRENE	ND	0.79	1.07	0.95	mg/Kg OC	83	113	52-115	30.1	0-60		LFM	
MSQS_170227															
	8531	1,2 - DICHLOROBENZENE	ND	0.42		0.49	mg/Kg OC	86	NA	32-129	NA	0-60		LFM	
	8531	1,2,4-TRICHLOROBENZENE	ND	0.36		0.4	mg/Kg OC	90	NA	44-142	NA	0-60		LFM	
	8531	1,4 - DICHLOROBENZENE	ND	0.37		0.49	mg/Kg OC	76	NA	20-124	NA	0-60		LFM	
	8531	2 - FLUOROBIPHENYL (Surr)	94	98			%		NA	70-130	NA	0-60		LFM	
	8531	2 - FLUOROPHENOL (Surr)	84	67			%		NA	70-130	NA	0-60		LFM	
	8531	2,4-DIMETHYLPHENOL	ND	2990		3000	ug/Kg	100	NA	32-119	NA	0-60		LFM	
	8531	2-METHYLNAPHTHALENE	ND	0.84		0.86	mg/Kg OC	98	NA	70-130	NA	0-60		LFM	
	8531	2-METHYLPHENOL (o-CRESOL)	ND	3280		3000	ug/Kg	109	NA	40-160	NA	0-60		LFM	
	8531	4-METHYLPHENOL (p-CRESOL)	ND	5750		5000	ug/Kg	115	NA	25-125	NA	0-60		LFM	
	8531	ACENAPHTHYLENE	ND	0.91		0.95	mg/Kg OC	96	NA	33-145	NA	0-60		LFM	
	8531	ACENAPHTHENE	ND	0.91		0.94	mg/Kg OC	97	NA	47-145	NA	0-60		LFM	
	8531	ANTHRACENE	ND	0.96		0.94	mg/Kg OC	102	NA	27-133	NA	0-60		LFM	
	8531	BENZ[A]ANTHRACENE	ND	0.84		0.95	mg/Kg OC	88	NA	33-143	NA	0-60		LFM	
	8531	BENZO[A]PYRENE	ND	0.93		0.95	mg/Kg OC	98	NA	17-163	NA	0-60		LFM	
	8531	BENZO[G,H,I]PERYLENE	ND	1.08		0.96	mg/Kg OC	113	NA	1-219	NA	0-60		LFM	
	8531	BENZOIC ACID	ND	1620		2000	ug/Kg	81	NA	70-130	NA	0-60		LFM	
	8531	BENZYL ALCOHOL	ND	740		1000	ug/Kg	74	NA	35-140	NA	0-60		LFM	
	8531	BENZYL BUTYL PHTHALATE	ND	0.6		0.73	mg/Kg OC	82	NA	1-152	NA	0-60		LFM	
	8531	CHRYSENE	ND	0.95		0.95	mg/Kg OC	100	NA	17-168	NA	0-60		LFM	
	8531	d5-NITROBENZENE (Surr)	78	80			%		NA	70-130	NA	0-60		LFM	

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				Spike Result	Spike Result			MS	MSD				Qualifier	Type	Comments
	8531	d5-PHENOL (Surr)	100	87			%		NA	70-130	NA	0-60		LFM	
	8531	DI(2-ETHYLHEXYL)PHTHALATE	ND	0.73		0.74	mg/Kg OC	99	NA	60-140	NA	0-60		LFM	
	8531	DIBENZO[A,H]ANTHRACENE	ND	1.02		0.95	mg/Kg OC	107	NA	1-227	NA	0-60		LFM	
	8531	DIBENZOFURAN	ND	0.82		0.86	mg/Kg OC	95	NA	50-130	NA	0-60		LFM	
	8531	DIETHYL PHTHALATE	ND	0.61		0.65	mg/Kg OC	94	NA	1-114	NA	0-60		LFM	
	8531	DIMETHYL PHTHALATE	ND	0.63		0.62	mg/Kg OC	102	NA	1-114	NA	0-60		LFM	
	8531	DI-N-BUTYL PHTHALATE	ND	1.16		0.69	mg/Kg OC	168	NA	1-118	NA	0-60	B3	LFM	
	8531	DI-N-OCTYL PHTHALATE	ND	0.45		0.74	mg/Kg OC	61	NA	4-146	NA	0-60		LFM	
	8531	FLUORANTHENE	ND	0.92		0.95	mg/Kg OC	97	NA	26-137	NA	0-60		LFM	
	8531	FLUORENE	ND	0.91		0.94	mg/Kg OC	97	NA	59-121	NA	0-60		LFM	
	8531	HEXACHLOROBENZENE	ND	0.23		0.25	mg/Kg OC	92	NA	1-152	NA	0-60		LFM	
	8531	HEXACHLOROBUTADIENE	ND	0.17		0.18	mg/Kg OC	94	NA	24-116	NA	0-60		LFM	
	8531	INDENO[1,2,3,C,D]PYRENE	ND	0.91		0.96	mg/Kg OC	95	NA	1-171	NA	0-60		LFM	
	8531	NAPHTHALENE	ND	0.93		0.94	mg/Kg OC	99	NA	21-133	NA	0-60		LFM	
	8531	N-NITROSODIPHENYLAMINE	ND	0.72		0.73	mg/Kg OC	99	NA	70-130	NA	0-60		LFM	
	8531	PENTACHLOROPHENOL	ND	2510		3000	ug/Kg	84	NA	14-176	NA	0-60		LFM	
	8531	PHENANTHRENE	ND	1.03		0.94	mg/Kg OC	110	NA	54-120	NA	0-60		LFM	
	8531	PHENOL	ND	2790		3000	ug/Kg	93	NA	5-112	NA	0-60		LFM	
	8531	p-TERPHENYL-d14 (Surr)	84	89			%		NA	70-130	NA	0-60		LFM	
	8531	PYRENE	ND	0.96		0.95	mg/Kg OC	101	NA	52-115	NA	0-60		LFM	
PAH_S170221															
	8518	2 - FLUOROBIPHENYL (Surr)	88	90	100		%		NA	70-130	NA	0-60		LFM	
	8518	2-METHYLNAPHTHALENE	ND	0.99	1.06	1.2	mg/Kg	83	88	70-130	6.8	0-60		LFM	
	8518	ACENAPHTHYLENE	ND	0.99	1.07	1.2	mg/Kg	83	89	33-145	7.8	0-60		LFM	
	8518	ACENAPTHENE	ND	1.04	1.22	1.2	mg/Kg	87	102	47-145	15.9	0-60		LFM	
	8518	ANTHRACENE	ND	1.10	1.15	1.2	mg/Kg	92	96	27-133	4.4	0-60		LFM	
	8518	BENZ[A]ANTHRACENE	ND	0.95	1.05	1.2	mg/Kg	79	88	33-143	10.0	0-60		LFM	
	8518	BENZO[A]PYRENE	ND	1.01	1.13	1.2	mg/Kg	84	94	17-163	11.2	0-60		LFM	
	8518	BENZO[B/J]FLUORANTHENE	ND	0.93	1.07	1.2	mg/Kg	78	89	24-159	14.0	0-60		LFM	
	8518	BENZO[G,H,I]PERYLENE	ND	1.12	1.44	1.2	mg/Kg	93	120	1-219	25.0	0-60		LFM	
	8518	BENZO[K]FLUORANTHENE	ND	1.10	1.18	1.2	mg/Kg	92	98	11-162	7.0	0-60		LFM	
	8518	CHRYSENE	ND	1.15	1.15	1.2	mg/Kg	96	96	17-168	0.0	0-60		LFM	
	8518	d5-NITROBENZENE (Surr)	62	69	84		%		NA	70-130	NA	0-60		LFM	
	8518	DIBENZO[A,H]ANTHRACENE	ND	1.08	1.40	1.2	mg/Kg	90	117	1-227	25.8	0-60		LFM	

%RPD = Relative Percent Difference

NA = Indicates %RPD could not be calculated

Matrix Spike (MS)/Matrix Spike Duplicate (MSD) analyses are used to determine the accuracy (MS) and precision (MSD) of an analytical method in a given sample matrix. Therefore, the usefulness of this report is limited to samples of similar matrices analyzed in the same analytical batch.

Only Duplicate sample with detections are listed in this report

Limits are intended for water matrices only. These criteria are for guidance only when reported with soils/solids.

FORM: QC Dependent.rpt

Batch	Sample	Analyte	Result	Duplicate		Spike Conc	Units	Percent Recovery		Limits*	%RPD	Limits*	QC		
				Spike Result	Spike Result			MS	MSD				Qualifier	Type	Comments
	8518	FLUORANTHENE	ND	0.99	1.36	1.2	mg/Kg	83	113	26-137	31.5	0-60		LFM	
	8518	FLUORENE	ND	1.00	1.15	1.2	mg/Kg	83	96	59-121	14.0	0-60		LFM	
	8518	INDENO[1,2,3,C,D]PYRENE	ND	0.97	1.39	1.2	mg/Kg	81	116	1-171	35.6	0-60		LFM	
	8518	NAPHTHALENE	ND	1.08	1.12	1.2	mg/Kg	90	93	21-133	3.6	0-60		LFM	
	8518	PHENANTHRENE	ND	1.11	1.22	1.2	mg/Kg	93	102	54-120	9.4	0-60		LFM	
	8518	p-TERPHENYL-d14 (Surr)	79	81	97		%		NA	70-130	NA	0-60		LFM	
	8518	PYRENE	ND	1.00	1.35	1.2	mg/Kg	83	113	52-115	29.8	0-60		LFM	
PAH_S170227															
	8531	2 - FLUOROBIPHENYL (Surr)	94	98			%		NA	70-130	NA	0-60		LFM	
	8531	2-METHYLNAPHTHALENE	ND	1.27		1.3	mg/Kg	98	NA	70-130	NA	0-60		LFM	
	8531	ACENAPHTHYLENE	ND	1.24		1.3	mg/Kg	95	NA	33-145	NA	0-60		LFM	
	8531	ACENAPTHENE	ND	1.26		1.3	mg/Kg	97	NA	47-145	NA	0-60		LFM	
	8531	ANTHRACENE	ND	1.32		1.3	mg/Kg	102	NA	27-133	NA	0-60		LFM	
	8531	BENZ[A]ANTHRACENE	ND	1.15		1.3	mg/Kg	88	NA	33-143	NA	0-60		LFM	
	8531	BENZO[A]PYRENE	ND	1.27		1.3	mg/Kg	98	NA	17-163	NA	0-60		LFM	
	8531	BENZO[B/J]FLUORANTHENE	ND	1.17		1.3	mg/Kg	90	NA	24-159	NA	0-60		LFM	
	8531	BENZO[G,H,I]PERYLENE	ND	1.47		1.3	mg/Kg	113	NA	1-219	NA	0-60		LFM	
	8531	BENZO[K]FLUORANTHENE	ND	1.28		1.3	mg/Kg	98	NA	11-162	NA	0-60		LFM	
	8531	CHRYSENE	ND	1.30		1.3	mg/Kg	100	NA	17-168	NA	0-60		LFM	
	8531	d5-NITROBENZENE (Surr)	78	80			%		NA	70-130	NA	0-60		LFM	
	8531	DIBENZ[A,H]ANTHRACENE	ND	1.39		1.3	mg/Kg	107	NA	1-227	NA	0-60		LFM	
	8531	FLUORANTHENE	ND	1.26		1.3	mg/Kg	97	NA	26-137	NA	0-60		LFM	
	8531	FLUORENE	ND	1.26		1.3	mg/Kg	97	NA	59-121	NA	0-60		LFM	
	8531	INDENO[1,2,3,C,D]PYRENE	ND	1.23		1.3	mg/Kg	95	NA	1-171	NA	0-60		LFM	
	8531	NAPHTHALENE	ND	1.29		1.3	mg/Kg	99	NA	21-133	NA	0-60		LFM	
	8531	PHENANTHRENE	ND	1.42		1.3	mg/Kg	109	NA	54-120	NA	0-60		LFM	
	8531	p-TERPHENYL-d14 (Surr)	84	89			%		NA	70-130	NA	0-60		LFM	
	8531	PYRENE	ND	1.31		1.3	mg/Kg	101	NA	52-115	NA	0-60		LFM	

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NA = Indicates %RPD could not be calculated

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FORM: QC Dependent.rpt



QUALITY CONTROL REPORT SURROGATE REPORT

Reference Number: 17-03594

Report Date: 06/28/17

Lab No	Analyte	Result	Qualifier	Units	Method	Limit
MSQS_170221 8517	2,4,6 - TRIBROMOPHENOL (Surr)	64		%	8270D	Acceptance Limits 34-140%
	2 - FLUOROBIPHENYL (Surr)	82		%		Acceptance Limits 49-127%
	2 - FLUOROPHENOL (Surr)	58		%		Acceptance Limits 28-118%
	d5-PHENOL (Surr)	73		%		Acceptance Limits 23-134%
	p-TERPHENYL-d14 (Surr)	79		%		Acceptance Limits 25-127%
	d5-NITROBENZENE (Surr)	66		%		Acceptance Limits 43-127%
DXS_170223 8517	O-TERPHENYL	98		%	NWTPH-Dx	
PAH_S170221 8517	2 - FLUOROBIPHENYL (Surr)	82		%	8270D	Acceptance Limits 28-130%
	p-TERPHENYL-d14 (Surr)	79		%		Acceptance Limits 32-138%
	d5-NITROBENZENE (Surr)	66		%		Acceptance Limits 43-127%
MSQS_170221 8518	2,4,6 - TRIBROMOPHENOL (Surr)	64		%	8270D	Acceptance Limits 34-140%
	2 - FLUOROBIPHENYL (Surr)	88		%		Acceptance Limits 49-127%
	2 - FLUOROPHENOL (Surr)	24		%		Acceptance Limits 28-118%
	d5-PHENOL (Surr)	41		%		Acceptance Limits 23-134%
	p-TERPHENYL-d14 (Surr)	79		%		Acceptance Limits 25-127%
	d5-NITROBENZENE (Surr)	62		%		Acceptance Limits 43-127%
DXS_170223 8518	O-TERPHENYL	93		%	NWTPH-Dx	
PAH_S170221 8518	2 - FLUOROBIPHENYL (Surr)	88		%	8270D	Acceptance Limits 28-130%
	p-TERPHENYL-d14 (Surr)	79		%		Acceptance Limits 32-138%
	d5-NITROBENZENE (Surr)	62		%		Acceptance Limits 43-127%
MSQS_170221 8519	2,4,6 - TRIBROMOPHENOL (Surr)	71		%	8270D	Acceptance Limits 34-140%
	2 - FLUOROBIPHENYL (Surr)	85		%		Acceptance Limits 49-127%
	2 - FLUOROPHENOL (Surr)	33		%		Acceptance Limits 28-118%
	d5-PHENOL (Surr)	55		%		Acceptance Limits 23-134%
	p-TERPHENYL-d14 (Surr)	82		%		Acceptance Limits 25-127%
	d5-NITROBENZENE (Surr)	62		%		Acceptance Limits 43-127%
DXS_170223 8519	O-TERPHENYL	87		%	NWTPH-Dx	
PAH_S170221 8519	2 - FLUOROBIPHENYL (Surr)	85		%	8270D	Acceptance Limits 28-130%
	p-TERPHENYL-d14 (Surr)	93		%		Acceptance Limits 32-138%
	d5-NITROBENZENE (Surr)	62		%		Acceptance Limits 43-127%
MSQS_170221 8520	2,4,6 - TRIBROMOPHENOL (Surr)	71		%	8270D	Acceptance Limits 34-140%
	2 - FLUOROBIPHENYL (Surr)	83		%		Acceptance Limits 49-127%
	2 - FLUOROPHENOL (Surr)	30		%		Acceptance Limits 28-118%
	d5-PHENOL (Surr)	50		%		Acceptance Limits 23-134%
	p-TERPHENYL-d14 (Surr)	76		%		Acceptance Limits 25-127%
	d5-NITROBENZENE (Surr)	65		%		Acceptance Limits 43-127%
DXS_170223 8520	O-TERPHENYL	94		%	NWTPH-Dx	

*Notation:

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QUALITY CONTROL REPORT SURROGATE REPORT

Reference Number: 17-03594

Report Date: 06/28/17

Lab No	Analyte	Result	Qualifier	Units	Method	Limit
PAH_S170221 8520	2 - FLUOROBIPHENYL (Surr)	83		%	8270D	Acceptance Limits 28-130%
	p-TERPHENYL-d14 (Surr)	76		%		Acceptance Limits 32-138%
	d5-NITROBENZENE (Surr)	65		%		Acceptance Limits 43-127%
MSQS_170221 8521	2,4,6 - TRIBROMOPHENOL (Surr)	73		%	8270D	Acceptance Limits 34-140%
	2 - FLUOROBIPHENYL (Surr)	75		%		Acceptance Limits 49-127%
	2 - FLUOROPHENOL (Surr)	89		%		Acceptance Limits 28-118%
	d5-PHENOL (Surr)	87		%		Acceptance Limits 23-134%
	p-TERPHENYL-d14 (Surr)	71		%		Acceptance Limits 25-127%
	d5-NITROBENZENE (Surr)	63		%		Acceptance Limits 43-127%
DXS_170223 8521	O-TERPHENYL	95		%	NWTPH-Dx	
PAH_S170221 8521	2 - FLUOROBIPHENYL (Surr)	75		%	8270D	Acceptance Limits 28-130%
	p-TERPHENYL-d14 (Surr)	71		%		Acceptance Limits 32-138%
	d5-NITROBENZENE (Surr)	63		%		Acceptance Limits 43-127%
MSQS_170221 8522	2,4,6 - TRIBROMOPHENOL (Surr)	62		%	8270D	Acceptance Limits 34-140%
	2 - FLUOROBIPHENYL (Surr)	70		%		Acceptance Limits 49-127%
	2 - FLUOROPHENOL (Surr)	80		%		Acceptance Limits 28-118%
	d5-PHENOL (Surr)	84		%		Acceptance Limits 23-134%
	p-TERPHENYL-d14 (Surr)	70		%		Acceptance Limits 25-127%
	d5-NITROBENZENE (Surr)	52		%		Acceptance Limits 43-127%
DXS_170223 8522	O-TERPHENYL	94		%	NWTPH-Dx	
PAH_S170221 8522	2 - FLUOROBIPHENYL (Surr)	70		%	8270D	Acceptance Limits 28-130%
	p-TERPHENYL-d14 (Surr)	70		%		Acceptance Limits 32-138%
	d5-NITROBENZENE (Surr)	52		%		Acceptance Limits 43-127%
MSQS_170221 8523	2,4,6 - TRIBROMOPHENOL (Surr)	45		%	8270D	Acceptance Limits 34-140%
	2 - FLUOROBIPHENYL (Surr)	54		%		Acceptance Limits 49-127%
	2 - FLUOROPHENOL (Surr)	67		%		Acceptance Limits 28-118%
	d5-PHENOL (Surr)	68		%		Acceptance Limits 23-134%
	p-TERPHENYL-d14 (Surr)	44		%		Acceptance Limits 25-127%
	d5-NITROBENZENE (Surr)	42		%		Acceptance Limits 43-127%
DXS_170223 8523	O-TERPHENYL	94		%	NWTPH-Dx	
PAH_S170221 8523	2 - FLUOROBIPHENYL (Surr)	54		%	8270D	Acceptance Limits 28-130%
	p-TERPHENYL-d14 (Surr)	44		%		Acceptance Limits 32-138%
	d5-NITROBENZENE (Surr)	42		%		Acceptance Limits 43-127%
MSQS_170221 8524	2,4,6 - TRIBROMOPHENOL (Surr)	70		%	8270D	Acceptance Limits 34-140%
	2 - FLUOROBIPHENYL (Surr)	82		%		Acceptance Limits 49-127%
	2 - FLUOROPHENOL (Surr)	89		%		Acceptance Limits 28-118%

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QUALITY CONTROL REPORT SURROGATE REPORT

Reference Number: 17-03594

Report Date: 06/28/17

Lab No	Analyte	Result	Qualifier	Units	Method	Limit
8524	d5-PHENOL (Surr)	95		%	8270D	Acceptance Limits 23-134%
	p-TERPHENYL-d14 (Surr)	67		%		Acceptance Limits 25-127%
	d5-NITROBENZENE (Surr)	72		%		Acceptance Limits 43-127%
DXS_170227 8524	O-TERPHENYL	106		%	NWTPH-Dx	
PAH_S170221 8524	2 - FLUOROBIPHENYL (Surr)	82		%	8270D	Acceptance Limits 28-130%
	p-TERPHENYL-d14 (Surr)	67		%		Acceptance Limits 32-138%
	d5-NITROBENZENE (Surr)	72		%		Acceptance Limits 43-127%
MSQS_170221 8525	2,4,6 - TRIBROMOPHENOL (Surr)	68		%	8270D	Acceptance Limits 34-140%
	2 - FLUOROBIPHENYL (Surr)	74		%		Acceptance Limits 49-127%
	2 - FLUOROPHENOL (Surr)	81		%		Acceptance Limits 28-118%
	d5-PHENOL (Surr)	92		%		Acceptance Limits 23-134%
	p-TERPHENYL-d14 (Surr)	67		%		Acceptance Limits 25-127%
	d5-NITROBENZENE (Surr)	52		%		Acceptance Limits 43-127%
DXS_170227 8525	O-TERPHENYL	105		%	NWTPH-Dx	
PAH_S170221 8525	2 - FLUOROBIPHENYL (Surr)	74		%	8270D	Acceptance Limits 28-130%
	p-TERPHENYL-d14 (Surr)	67		%		Acceptance Limits 32-138%
	d5-NITROBENZENE (Surr)	52		%		Acceptance Limits 43-127%
MSQS_170221 8526	2,4,6 - TRIBROMOPHENOL (Surr)	80		%	8270D	Acceptance Limits 34-140%
	2 - FLUOROBIPHENYL (Surr)	76		%		Acceptance Limits 49-127%
	2 - FLUOROPHENOL (Surr)	83		%		Acceptance Limits 28-118%
	d5-PHENOL (Surr)	86		%		Acceptance Limits 23-134%
	p-TERPHENYL-d14 (Surr)	75		%		Acceptance Limits 25-127%
	d5-NITROBENZENE (Surr)	66		%		Acceptance Limits 43-127%
DXS_170227 8526	O-TERPHENYL	98		%	NWTPH-Dx	
PAH_S170221 8526	2 - FLUOROBIPHENYL (Surr)	76		%	8270D	Acceptance Limits 28-130%
	p-TERPHENYL-d14 (Surr)	75		%		Acceptance Limits 32-138%
	d5-NITROBENZENE (Surr)	66		%		Acceptance Limits 43-127%
DXS_170227 8527	O-TERPHENYL	87		%	NWTPH-Dx	
PAH_S170221 8527	2,4,6 - TRIBROMOPHENOL (Surr)	95	N1	%	8270D	
	2 - FLUOROBIPHENYL (Surr)	108		%		Acceptance Limits 28-130%
	p-TERPHENYL-d14 (Surr)	83		%		Acceptance Limits 25-127%
	d5-NITROBENZENE (Surr)	79		%		Acceptance Limits 43-127%
MSQS_170221 8528	2,4,6 - TRIBROMOPHENOL (Surr)	94		%	8270D	Acceptance Limits 34-140%
	2 - FLUOROBIPHENYL (Surr)	101		%		Acceptance Limits 49-127%
	2 - FLUOROPHENOL (Surr)	78		%		Acceptance Limits 28-118%
	d5-PHENOL (Surr)	103		%		Acceptance Limits 23-134%

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QUALITY CONTROL REPORT SURROGATE REPORT

Reference Number: 17-03594

Report Date: 06/28/17

Lab No	Analyte	Result	Qualifier	Units	Method	Limit
8528	p-TERPHENYL-d14 (Surr)	88		%	8270D	Acceptance Limits 25-127%
	d5-NITROBENZENE (Surr)	96		%		Acceptance Limits 43-127%
DXS_170227 8528	O-TERPHENYL	94		%	NWTPH-Dx	
PAH_S170221 8528	2 - FLUOROBIPHENYL (Surr)	101		%	8270D	Acceptance Limits 28-130%
	p-TERPHENYL-d14 (Surr)	88		%		Acceptance Limits 32-138%
	d5-NITROBENZENE (Surr)	96		%		Acceptance Limits 43-127%
MSQS_170221 8529	2,4,6 - TRIBROMOPHENOL (Surr)	88		%	8270D	Acceptance Limits 34-140%
	2 - FLUOROBIPHENYL (Surr)	88		%		Acceptance Limits 49-127%
	2 - FLUOROPHENOL (Surr)	93		%		Acceptance Limits 28-118%
	d5-PHENOL (Surr)	110		%		Acceptance Limits 23-134%
	p-TERPHENYL-d14 (Surr)	93		%		Acceptance Limits 25-127%
	d5-NITROBENZENE (Surr)	57		%		Acceptance Limits 43-127%
DXS_170227 8529	O-TERPHENYL	103		%	NWTPH-Dx	
PAH_S170221 8529	2 - FLUOROBIPHENYL (Surr)	88		%	8270D	Acceptance Limits 28-130%
	p-TERPHENYL-d14 (Surr)	93		%		Acceptance Limits 32-138%
	d5-NITROBENZENE (Surr)	57		%		Acceptance Limits 43-127%
MSQS_170221 8530	2,4,6 - TRIBROMOPHENOL (Surr)	98		%	8270D	Acceptance Limits 34-140%
	2 - FLUOROBIPHENYL (Surr)	94		%		Acceptance Limits 49-127%
	2 - FLUOROPHENOL (Surr)	59		%		Acceptance Limits 28-118%
	d5-PHENOL (Surr)	91		%		Acceptance Limits 23-134%
	p-TERPHENYL-d14 (Surr)	91		%		Acceptance Limits 25-127%
	d5-NITROBENZENE (Surr)	57		%		Acceptance Limits 43-127%
DXS_170227 8530	O-TERPHENYL	104		%	NWTPH-Dx	
PAH_S170221 8530	2 - FLUOROBIPHENYL (Surr)	94		%	8270D	Acceptance Limits 28-130%
	p-TERPHENYL-d14 (Surr)	91		%		Acceptance Limits 32-138%
	d5-NITROBENZENE (Surr)	57		%		Acceptance Limits 43-127%
MSQS_170227 8531	2,4,6 - TRIBROMOPHENOL (Surr)	101		%	8270D	Acceptance Limits 34-140%
	2 - FLUOROBIPHENYL (Surr)	94		%		Acceptance Limits 49-127%
	2 - FLUOROPHENOL (Surr)	84		%		Acceptance Limits 28-118%
	d5-PHENOL (Surr)	100		%		Acceptance Limits 23-134%
	p-TERPHENYL-d14 (Surr)	84		%		Acceptance Limits 25-127%
	d5-NITROBENZENE (Surr)	78		%		Acceptance Limits 43-127%
DXS_170227 8531	O-TERPHENYL	101		%	NWTPH-Dx	
PAH_S170227 8531	2 - FLUOROBIPHENYL (Surr)	94		%	8270D	Acceptance Limits 28-130%
	p-TERPHENYL-d14 (Surr)	84		%		Acceptance Limits 32-138%
	d5-NITROBENZENE (Surr)	78		%		Acceptance Limits 43-127%

*Notation:

A surrogate is a pure compound added to a sample in the laboratory just before processing so that the overall efficiency of a method can be determined.

The Acceptance Limits (or Control Limits) approximate a 99% confidence interval around the mean recovery.



QUALITY CONTROL REPORT SURROGATE REPORT

Reference Number: 17-03594

Report Date: 06/28/17

Lab No	Analyte	Result	Qualifier	Units	Method	Limit
MSQS_170227 8532	2,4,6 - TRIBROMOPHENOL (Surr)	82		%	8270D	Acceptance Limits 34-140%
	2 - FLUOROBIPHENYL (Surr)	110		%		Acceptance Limits 49-127%
	2 - FLUOROPHENOL (Surr)	65		%		Acceptance Limits 28-118%
	d5-PHENOL (Surr)	92		%		Acceptance Limits 23-134%
	p-TERPHENYL-d14 (Surr)	94		%		Acceptance Limits 25-127%
	d5-NITROBENZENE (Surr)	104		%		Acceptance Limits 43-127%
DXS_170227 8532	O-TERPHENYL	96		%	NWTPH-Dx	
PAH_S170227 8532	2 - FLUOROBIPHENYL (Surr)	110		%	8270D	Acceptance Limits 28-130%
	p-TERPHENYL-d14 (Surr)	94		%		Acceptance Limits 32-138%
	d5-NITROBENZENE (Surr)	104		%		Acceptance Limits 43-127%
MSQS_170227 8533	2,4,6 - TRIBROMOPHENOL (Surr)	81		%	8270D	Acceptance Limits 34-140%
	2 - FLUOROBIPHENYL (Surr)	92		%		Acceptance Limits 49-127%
	2 - FLUOROPHENOL (Surr)	48		%		Acceptance Limits 28-118%
	d5-PHENOL (Surr)	70		%		Acceptance Limits 23-134%
	p-TERPHENYL-d14 (Surr)	78		%		Acceptance Limits 25-127%
	d5-NITROBENZENE (Surr)	68		%		Acceptance Limits 43-127%
DXS_170227 8533	O-TERPHENYL	75		%	NWTPH-Dx	
PAH_S170227 8533	2 - FLUOROBIPHENYL (Surr)	92		%	8270D	Acceptance Limits 28-130%
	p-TERPHENYL-d14 (Surr)	78		%		Acceptance Limits 32-138%
	d5-NITROBENZENE (Surr)	68		%		Acceptance Limits 43-127%
MSQS_170227 8534	2,4,6 - TRIBROMOPHENOL (Surr)	78		%	8270D	Acceptance Limits 34-140%
	2 - FLUOROBIPHENYL (Surr)	91		%		Acceptance Limits 49-127%
	2 - FLUOROPHENOL (Surr)	46		%		Acceptance Limits 28-118%
	d5-PHENOL (Surr)	62		%		Acceptance Limits 23-134%
	p-TERPHENYL-d14 (Surr)	86		%		Acceptance Limits 25-127%
	d5-NITROBENZENE (Surr)	68		%		Acceptance Limits 43-127%
DXS_170227 8534	O-TERPHENYL	98		%	NWTPH-Dx	
PAH_S170227 8534	2 - FLUOROBIPHENYL (Surr)	91		%	8270D	Acceptance Limits 28-130%
	p-TERPHENYL-d14 (Surr)	86		%		Acceptance Limits 32-138%
	d5-NITROBENZENE (Surr)	68		%		Acceptance Limits 43-127%
MSQS_170227 8535	2,4,6 - TRIBROMOPHENOL (Surr)	70		%	8270D	Acceptance Limits 34-140%
	2 - FLUOROBIPHENYL (Surr)	92		%		Acceptance Limits 49-127%
	2 - FLUOROPHENOL (Surr)	58		%		Acceptance Limits 28-118%
	d5-PHENOL (Surr)	75		%		Acceptance Limits 23-134%
	p-TERPHENYL-d14 (Surr)	88		%		Acceptance Limits 25-127%
	d5-NITROBENZENE (Surr)	70		%		Acceptance Limits 43-127%

DXS_170227

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QUALITY CONTROL REPORT SURROGATE REPORT

Reference Number: 17-03594

Report Date: 06/28/17

Lab No	Analyte	Result	Qualifier	Units	Method	Limit
8535	O-TERPHENYL	102		%	NWTPH-Dx	
PAH_S170227 8535	2 - FLUOROBIPHENYL (Surr)	92		%	8270D	Acceptance Limits 28-130%
	p-TERPHENYL-d14 (Surr)	88		%		Acceptance Limits 32-138%
	d5-NITROBENZENE (Surr)	70		%		Acceptance Limits 43-127%
MSQS_170227 8536	2,4,6 - TRIBROMOPHENOL (Surr)	95		%	8270D	Acceptance Limits 34-140%
	2 - FLUOROBIPHENYL (Surr)	103		%		Acceptance Limits 49-127%
	2 - FLUOROPHENOL (Surr)	75		%		Acceptance Limits 28-118%
	d5-PHENOL (Surr)	104		%		Acceptance Limits 23-134%
	p-TERPHENYL-d14 (Surr)	81		%		Acceptance Limits 25-127%
	d5-NITROBENZENE (Surr)	68		%		Acceptance Limits 43-127%
DXS_170227 8536	O-TERPHENYL	101		%	NWTPH-Dx	
PAH_S170227 8536	2 - FLUOROBIPHENYL (Surr)	103		%	8270D	Acceptance Limits 28-130%
	p-TERPHENYL-d14 (Surr)	81		%		Acceptance Limits 32-138%
	d5-NITROBENZENE (Surr)	68		%		Acceptance Limits 43-127%

*Notation:

A surrogate is a pure compound added to a sample in the laboratory just before processing so that the overall efficiency of a method can be determined.

The Acceptance Limits (or Control Limits) approximate a 99% confidence interval around the mean recovery.

Qualifier Definitions

Reference Number: 17-03594

Report Date: 06/28/17

Qualifier	Definition
b0	Phthalate compounds are commonly found in plastics used within the extraction method. Background amounts are not unexpected and are typically below the MRL. Results reported are likely biased high.
B3	The recovery of the Matrix Spike is outside the upper limit due to a sample amount that is less than the reporting limit.
B8	This compound was detected in the method blank below the MRL. This flag denotes possible trace contribution from laboratory background.
E	Indicates that the concentration exceeds the calibration range. Values which are outside the calibration curve are estimates only.
IM	Matrix induced bias assumed
INH	The sample was non-homogeneous
IS	The ratio of the spike concentration to sample background was too low to meet performance criteria
J	Indicates an estimated concentration. This occurs when an analyte concentration is below the calibration curve but is above the method detection limit.
LR	Low recovery can not be accounted for. However, there is adequate sensitivity to detect the compound at the MRL. No sample detections so no further action for this analysis batch.
N1	See case narrative.

Note: Some qualifier definitions found on this page may pertain to results or QC data which are not printed with this report.



Prep Method Definitions

Reference Number: 17-03594

Report Date: 03/21/17

Prep Method	Definition
3051	Microwave Digestion of Solids
3540C	Soxhlet Extraction
3550B	Ultrasonic Extraction