Groundwater Monitoring Report
April 2018 through March 2019
Cascade Pole Site
Olympia, Washington

August 6, 2019

Prepared for

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1.0 INTRODUCTION

This report summarizes groundwater monitoring activities conducted between April 1, 2018 and March 31, 2019 at the Cascade Pole Site (CPC; Site), in Olympia, Washington. This report is the twelfth annual report summarizing the groundwater monitoring that has been conducted as part of the Long-Term Groundwater Compliance Monitoring (LTGCM) program outlined in the first amendment to Agreed Order No. DE 00TCPSR-753 (Washington State Department of Ecology; Ecology 2004). The compliance monitoring plan (CMP; Landau Associates, Inc.; LAI 2007) identifies the processes for the collection of groundwater samples and the measurement of groundwater elevations. The LTGCM program consists of the following elements:

- Hydraulic Control Monitoring: Monthly monitoring of groundwater elevations at perimeter and interior monitoring wells. The groundwater elevation data are utilized to monitor the effectiveness of the groundwater extraction and treatment system in achieving hydraulic control. The locations of monitoring wells are shown on Figures 1 and 2.
- Perimeter Well Monitoring: Collection of semiannual water quality samples from four paired monitoring wells located along the perimeter (inside and outside) of the slurry wall. Groundwater samples are collected from the following paired wells: PZ 12 and PZ-13, LW-3 and PZ-17, LW-4R and PZ-18, and MW-02S and PZ-19, as shown on Figure 1. The analytical results for the groundwater quality samples are utilized in the evaluation of the effectiveness of the extraction and treatment system in controlling horizontal migration of contaminants.
- Interior Well Monitoring: Collection of semiannual water quality samples from three paired upper and lower aquifer wells located within the interior of the containment area. Groundwater samples are collected from the following paired interior wells: MW 01S and MW-01D, MW-02S and MW-02D, and MW-05S and MW-05D, as shown on Figure 2. In addition to the paired upper and lower aquifer wells, semiannual water quality samples are collected from well CW-13, as requested by Ecology. The analytical results for the paired upper and lower aquifer wells are utilized in the evaluation of vertical containment.
- Reporting: The results of semiannual groundwater monitoring are presented in an annual report and submitted to Ecology.

1.1 Background

The former CPC wood-treatment Site is located approximately 1 mile north of downtown Olympia, at the northern end of the peninsula that extends into Budd Inlet. The Port of Olympia (Port) owns the property, adjacent parcels, and adjacent in-waterway sediments area. A detailed history of the Site can be found in the CPC remedial investigation (RI) and feasibility study (FS) reports for the Sediments Operable Unit (SOU; LAI 1993a; LAI 1993b). Environmental cleanup of the Site is proceeding under the Washington State Model Toxics Control Act (MTCA).

The Port implemented several interim remedial actions in the upland area of the Site to address contamination from the former wood treatment activities. These interim actions prevented further migration of hazardous substances from contaminated soil and groundwater into the adjacent groundwater, surface water, and sediment. A groundwater extraction and non-aqueous phase liquid

(NAPL) recovery and treatment system was installed in 1991 and 1992. In early 1993, a dense NAPL (DNAPL) recovery trench and an associated sheet pile cutoff wall were installed along a portion of the shoreline to eliminate the migration of DNAPL into Budd Inlet. The cutoff wall was extended to encircle the Site through installation of a soil-bentonite slurry wall in 1996 and 1997. The cutoff wall was keyed into the aquitard and encompasses the former wood treating facility and treated pole storage yards; areas where NAPL has been observed and impacted groundwater. The trench was abandoned in 2001 due to low DNAPL recovery rates.

Excavated and dredged sediments generated from cleanup of the SOU were placed in an upland containment cell within the cutoff wall, which was constructed within the northeast portion of the SOU. In addition, contaminated sediment and soil near the original sheet pile cutoff wall were contained during cleanup of the SOU by a second sheet pile cutoff wall. The second sheet pile cutoff wall was keyed into the existing slurry wall on each end and the underlying aquitard, forming a shoreline containment cell. The groundwater extraction and NAPL recovery and treatment system was expanded in 1999 and modified in conjunction with the construction of the upland sediment containment cell.

A major portion of the Site was paved between the fall of 1997 and the summer of 1998 to assist with stormwater runoff control and to reduce surface water infiltration. Capping of the Site was conducted in three phases: Phase I was conducted in 2004, Phase II was conducted in 2009, and Phase III was completed in 2010. Upon completion of the capping activities, a new groundwater treatment system was installed to replace the 1993 system and to increase the Site treatment capacity by threefold. The new system began operation in January 2012.

1.2 Hydraulic Control Goals

Ecology's short-term goal for hydraulic containment has been identified for the Site pending development of long-term goals. The short-term goal of the hydraulic control system at the Site is to prevent overtopping of the cutoff wall throughout the containment area. The short-term performance criterion consists of maximum groundwater elevations within the cutoff wall, depending on adjacent cutoff wall top elevations (LAI 2000). The groundwater elevation performance criteria are 15.5 feet mean lower low water (ft MLLW) along the majority of the cutoff wall alignment, and 16.5 ft MLLW along wall alignment sections adjacent to Budd Inlet.

1.3 Groundwater Quality Compliance Monitoring Goals

The goal of the groundwater quality compliance monitoring is to assess the effectiveness of the groundwater extraction and treatment system. The CMP identifies four pairs of shallow monitoring wells located along the perimeter (inside and outside) of the bentonite cutoff wall and three shallow and deep well pairs within the containment area to monitor the effectiveness of the containment system. One additional shallow extraction well not currently being operated, CW-13, is also being sampled at Ecology's request.

Groundwater quality results are compared to MTCA Method B values for the protection of marine surface water with the exception of petroleum hydrocarbons, which are compared to MTCA Method A cleanup levels. To evaluate the analytical data for carcinogenic polycyclic aromatic hydrocarbons (cPAHs), the toxicity equivalency quotients (TEQ) of individual cPAHs were calculated and summed for comparison to the benzo(a)pyrene cleanup level using the methodology established in Washington Administrative Code (WAC) 173-340-708. To calculate the TEQ, the toxicity equivalency factor (TEF) for a given cPAH compound was multiplied by the compound concentration, or half the reporting limit for compounds that were not detected above the laboratory reporting limit, and the resulting values were summed. The resulting TEQ was compared to the MTCA Method B cleanup level for benzo(a)pyrene of 0.1 micrograms per liter (µg/L). Pentachlorophenol (PCP) is initially analyzed using US Environmental Protection Agency (EPA) Method 8270 with a reporting limit of 10.0 µg/L. If the initial PCP results are not detected at the reporting limit, then samples are selected for follow-up analysis using EPA Method 8041 with a lower reporting limit of 0.25 µg/L. The PCP analysis sequence is conducted to allow for initial screening for elevated detections of the compound without damage to laboratory equipment, and the follow-up analysis allows for comparison of results to MTCA Method B cleanup levels.

2.0 COMPLIANCE MONITORING PROCEDURES

Two groundwater quality monitoring events were conducted at the Site during this reporting period (September 2018 and March 2019). Monthly groundwater elevation data were also collected to evaluate system hydraulic control measures in accordance with the CMP (LAI 2007). The following sections describe the sampling methods for collection of water level measurements and groundwater sampling.

2.1 Hydraulic Control Measurements

Monthly groundwater level measurements from the selected compliance perimeter well pairs (PZ-12 and PZ-13, LW-3 and PZ-17, LW-4R and PZ-18, and MW-02S and PZ-19) and from interior monitoring well shallow and deep aquifer pairs (MW-01S and MW-01D; MW-02S and MW-02D; and MW-05S and MW5D) have been collected throughout the reporting period (April 2018 through March 2019).

The depths to groundwater measurements were collected using an electronic water level meter and measurements were recorded to the nearest 0.01 ft. Measurements were made from surveyed reference points on the top of the well casing. Depth to groundwater was converted to groundwater elevation for each well using a surveyed reference elevation at the top of the casing.

2.2 Groundwater Sampling

Groundwater quality monitoring events were conducted in September 2018 during a time of low groundwater elevations, which corresponded to a typical “dry season”, and in March 2019 at a time when high groundwater elevations corresponded to a typical “wet season.”

Groundwater samples were collected using low-flow sampling techniques as described in the CMP. Groundwater was purged from the selected wells using a non-dedicated peristaltic pump and dedicated sampling tubing. Field parameters (pH, conductivity, redox, and temperature), along with groundwater levels, were monitored every 3 to 5 minutes during the purge process to verify the flow rate and to minimize groundwater level drawdown. Groundwater samples were collected directly into laboratory-prepared containers, labeled, stored in a cooler with a maintained temperature of 4°centigrade (°C) to 6°C, and transported to the laboratory in accordance with proper chain-of-custody procedures.

A total of 14 wells were sampled as part of the LTGCM plan. The selected wells included perimeter well pairs (PZ-12 and PZ-13, LW-3 and PZ-17, LW 4R and PZ-18, and MW-02S and PZ-19) and interior wells MW-01S and MW01D; MW-02S and MW-02D; MW-05S and MW-05D; and CW-13).

Groundwater samples were submitted to Analytical Resources Inc. (ARI) located in Tukwila, Washington. Samples were analyzed for PAHs using EPA Method 8270 with selected ion monitoring (SIM); gasoline-range total petroleum hydrocarbons (TPH-G) using Method NWTPH-G; and diesel- and oil-range TPH (TPH-D and TPH-O, respectively), and creosote using Method NWTPH-Dx. Follow-up PCP analysis was conducted using low reporting limit testing, EPA Method 8041, if results from the PAH testing using EPA Method 8270 indicated results were below the associated method reporting limit.

3.0 COMPLIANCE MONITORING RESULTS

The following sections discuss the performance of the system in regards to the hydraulic control and groundwater quality criteria. Groundwater elevation data collected during this reporting period is summarized in Table 1. Groundwater quality compliance monitoring data collected during this reporting period is summarized in Table 2. Historical data (groundwater elevation and groundwater quality) are presented in Appendix A. Laboratory reports for the two events (September 2018 and March 2019) are presented in Appendix B.

3.1 Hydraulic Control

The LTGCM plan indicates that hydraulic control for the Site will be conducted by pumping groundwater from a series of shallow extraction wells, directing water to the onsite treatment system. The short-term groundwater elevation performance goals are maintaining groundwater levels below the top of the perimeter cutoff wall, which requires maintaining groundwater elevations below 15.5 ft MLLW along the majority of the cutoff wall alignment, and below 16.5 ft MLLW along wall alignment sections adjacent to Budd Inlet. The monthly hydraulic control data is summarized in Table 1.

Available groundwater elevation data collected during this reporting period indicate that the short-term elevation goals were met at well PZ-12 (northwest portion of the Site) and LW-3 (southwestern portion of the Site). However, the short-term groundwater elevation criteria were exceeded during the reporting period at the following times and location:

- Groundwater elevations were not measured at perimeter well LW-4R due to accumulation of logs and bark piles in May, July, or November; therefore, the hydraulic capture during these timeframes cannot be evaluated. During the remainder of the reporting period, groundwater elevations at well LW-4R exceeded the short-term goal five times (April, June, August, September, and October). The measurements where the goal was not exceeded occurred during the “wet season” (December 2018 through March 2019).
- Groundwater elevations observed at perimeter well MW-02S exceeded the short-term goal nine out of the twelve measurements collected during this reporting period. The measurements where the goal was not exceeded occurred during the dry season (September through November, 2018).
- Groundwater elevations observed at perimeter well MW-05S exceeded the short-term goal five out of the twelve measurements collected during this reporting period. The measurements where the goal was not exceeded were observed during between June and December 2018.

According to the Port, extraction wells CW-1, CW-2, CW-3, and CW-8 operated nearly full time during this reporting period, while extraction wells CW-4, CW-5, CW-6, CW-7, and CW-10 operated between 10 to 45 percent (%) of the time. Extraction wells CW-9 and CW-11 were not operational during this reporting period. Future increased operation of the extraction well system toward full containment capacity should reduce the exceedances of the short-term groundwater elevation performance criteria.

3.2 Groundwater Analytical Results

The groundwater analytical results for the two sampling events (September 2018 and March 2019) are summarized in Table 2. Analytical results for constituents detected above the cleanup screening levels during this reporting period are shown on Figure 3. The following paragraphs summarize the analytical results for this reporting period.

3.2.1 Exterior Shallow Wells

Exterior shallow wells (PZ-13, PZ-17, PZ-18, and PZ-19) represent groundwater outside of the hydraulic containment system and, as such, exceedance of screening levels in these wells may indicate a lack of hydraulic containment in the vicinity of the subject exterior well.

Analytical results for the exterior shallow wells (located outside of the slurry wall) were below the laboratory reporting limits during this reporting period for wells PZ-13, PZ-18, and PZ-19. Low-level concentrations of acenaphthene (September 2018 event), and TPH-G, and TPH-D (March 2019 event) were reported at well PZ-17; however, these concentrations are all below the respective screening levels (no screening level is established for acenaphthene). Sample results from well PZ-17 also indicate creosote-range TPH was detected at 374 µg/L (September 2018 event) and 1,210 µg/L (March 2019 event), with the March concentration being above the screening level (500 µg/L).

3.2.2 Interior Shallow Wells

Interior shallow wells (PZ-12, LW-3, LW-4R, MW-01S, MW-02S, MW-05S, and CW-13) represent the groundwater that is being contained by the hydraulic containment system. As a result, exceedance of groundwater screening levels are anticipated.

No constituents were detected above laboratory reporting limits at PZ-12 or LW-4R during the reporting period. Low-level concentrations (below the respective screening levels) of a number of compounds were detected at MW-1S, MW-05S and CW-13. Creosote-range TPH (1,080 µg/L [September 2018 event] and 763 µg/L [March 2019 event]) was reported above the screening level at LW-3 during this reporting period. Creosote-range TPH (1,930 µg/L) was also reported above the screening level at MW-02S during the September 2018 event. Shallow monitoring well MW-01S reported concentrations above the screening levels during both the September 2018 event and the March 2019 event. In addition to the low-level detected compounds at MW-01S, the following compounds were detected above the screening levels at MW-01S: pentachlorophenol (426 to 6,190 µg/L), total cPAH values (0.28 to 1.42 µg/L), TPH-G (16,700 to 27,000 µg/L), TPH-D (5,150 to 8,670 µg/L), and creosote-range TPH (35,000 to 53,000 µg/L). The observed concentrations during this reporting period were within historical ranges for each of the interior shallow wells.

3.2.3 Interior Deep Wells

Interior deep wells MW-01D, MW-02D, and MW-05D were monitored for groundwater quality during the reporting period. These wells are screened in the lower aquifer that underlies the Site, are located

within the interior of the slurry wall, and are in close proximity to the shallow interior wells. The intent of the deep wells is to monitor potential vertical migration of contaminants from the overlying containment system.

Analytical results for the interior deep wells indicate that concentrations of Site constituents of concern were below the respective screening levels during this reporting period, except for creosote-range TPH at MW-02D, which ranged from non-detect at the reporting limit (March 2019) to 694 µg/L (September 2018), which is above the screening level (500 µg/L). Deep well MW-02D also had low-level detections of naphthalene, 2-methylnaphthalene, acenaphthene, dibenzofuran, fluorine, phenanthrene, and 1-methylnaphthalene reported during both sampling events, along with TPH-G and TPH-D during the September 2018 event; however the low-level concentrations are all below the respective screening levels. Well MW-01D had a low-level detection of naphthalene and well MW-05D had a low-level detection of acenaphthene during the September 2018 event. Analytical results for the deep wells are consistent with historical concentrations.

4.0 CONCLUSIONS AND RECOMMENDATIONS

Evaluation of groundwater elevations for shallow monitoring wells located along the perimeter of the bentonite slurry wall indicates that the hydraulic control system is achieving the short-term hydraulic containment goals some of the time. Reoccurring exceedances of the hydraulic containment goals occurred at LW-4R, MW-02S, and MW-05S during this reporting period. However, containment goals were routinely achieved at wells PZ-12 and LW-3. Maintenance of the extraction wells is recommended to increase the individual well operational time.

Analytical results indicate no exceedances of the groundwater screening levels in the majority of the wells (PZ-12, PZ-13, PZ-18, PZ-19, LW-4R, MW-05S, MW-01D, MW-05D, and CW-13). Creosote-range TPH was detected at concentrations exceeding the screening level during one or both sampling events at PZ-17, LW-3, MW-01S, MW-02S, and MW-02D. Groundwater screening levels were exceeded for a number of constituents in samples collected from interior shallow well MW-01S. Exceedances at MW-01S, LW-3, and MW-02S are anticipated, as these wells are located inside the containment system perimeter.

The next semiannual sampling event is currently scheduled for late August to early October 2019, to coincide with typical low groundwater elevations representative of a “dry season” event. The “wet season” event will be conducted in February or March 2020, depending on precipitation rates.

5.0 LIMITATIONS

This report has been prepared for the exclusive use of the Port of Olympia for specific application to the Cascade Pole Site in Olympia, Washington. No other party is entitled to rely on the information, conclusions, and recommendations included in this document without the express written consent of Landau Associates. Further, the reuse of information, conclusions, and recommendations provided herein for extensions of the project or for any other project, without review and authorization by Landau Associates, shall be at the user's sole risk. Landau Associates warrants that within the limitations of scope, schedule, and budget, our services have been provided in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing in the same locality under similar conditions as this project. We make no other warranty, either express or implied.

6.0 REFERENCES

Ecology. 2004. Amendment No. 1 to Agreed Order No. DE 00TCPSR-753; In The Matter of Remedial Action by: The Port of Olympia. Washington State Department of Ecology. July 3.

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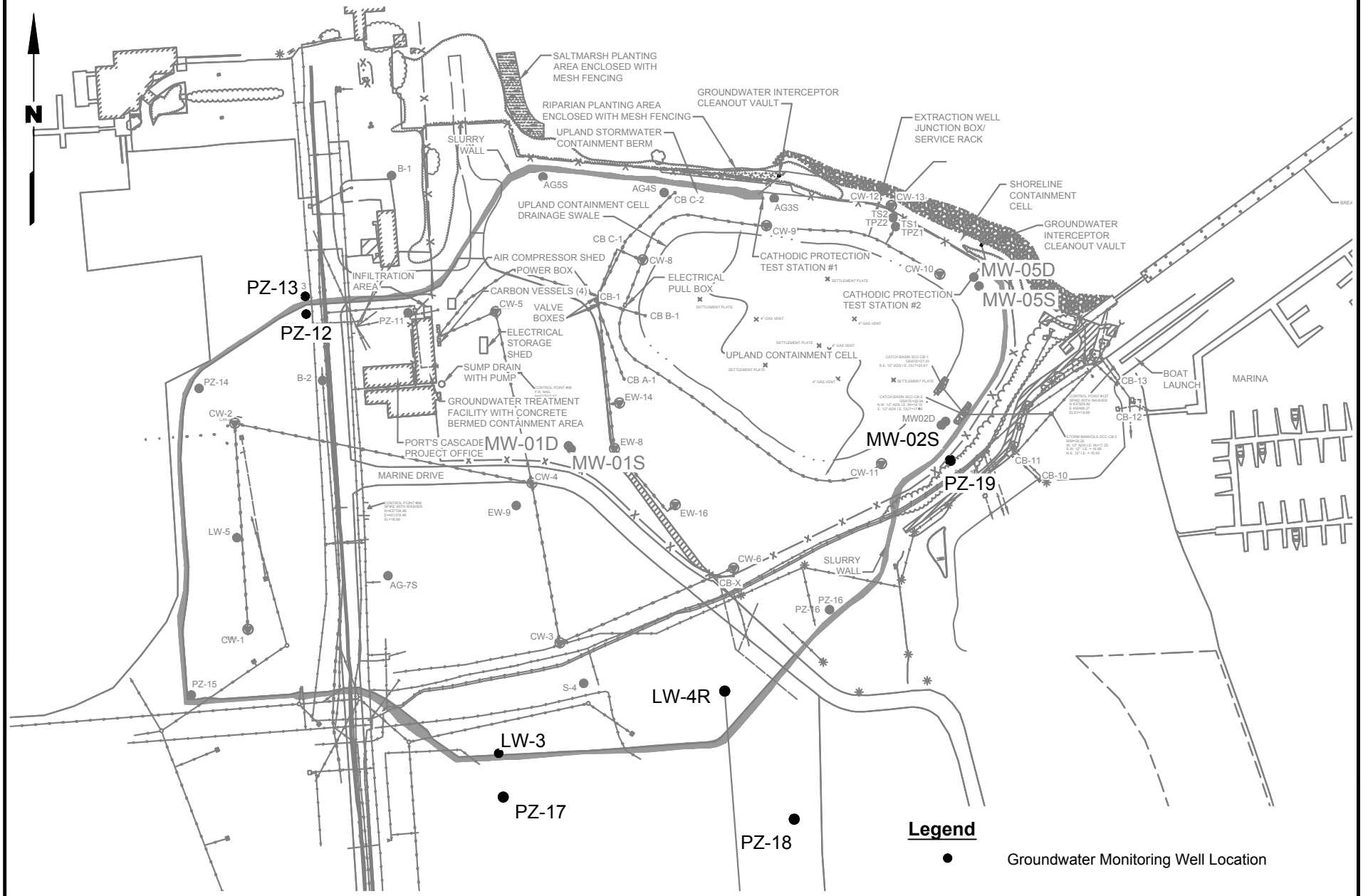

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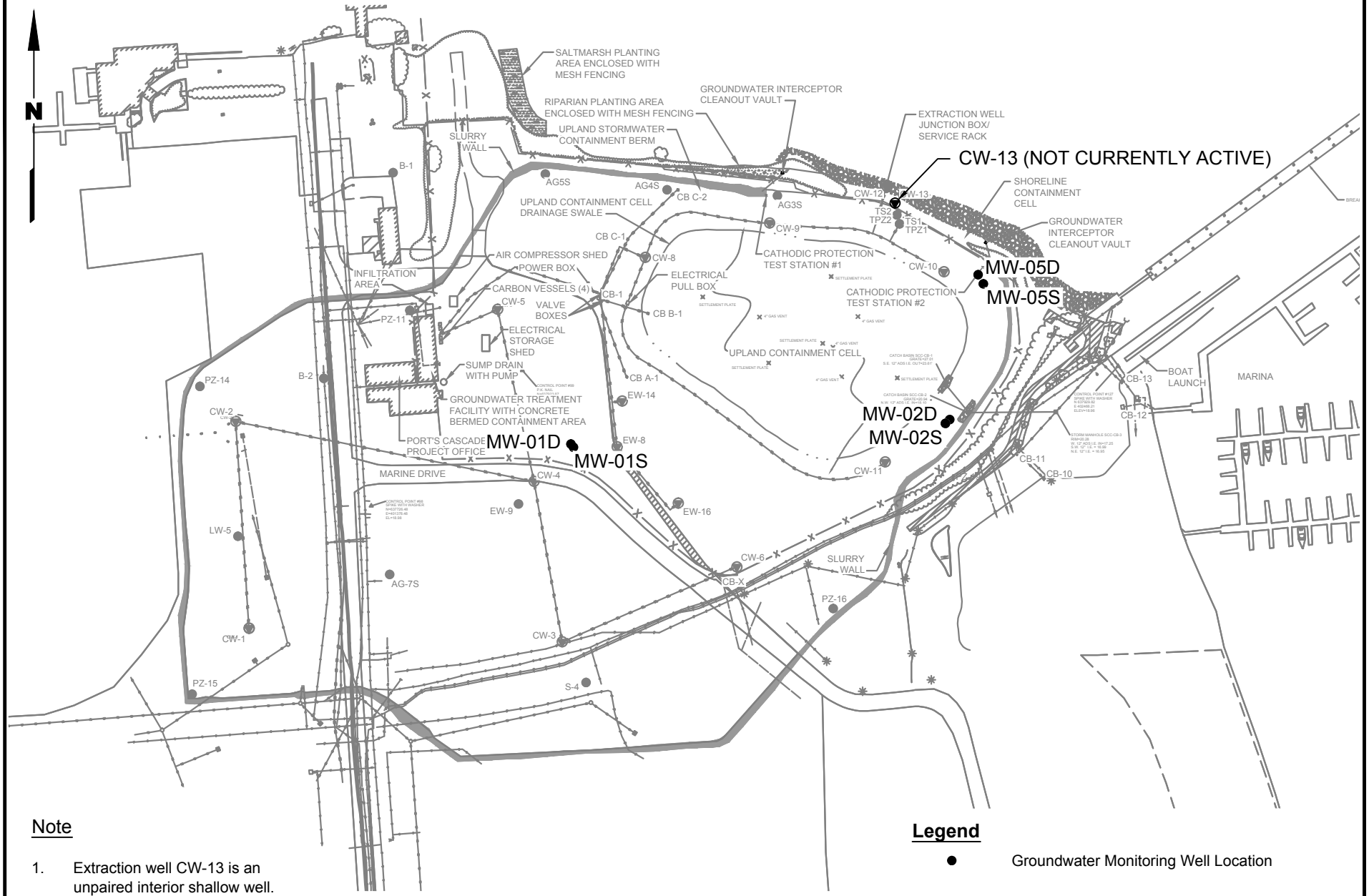
Olympia, Washington

Perimeter Paired Groundwater Monitoring Network Well Locations

Figure 1



Note

1. Extraction well CW-13 is an unpaired interior shallow well.

Legend

● Groundwater Monitoring Well Location

0 200 400

Scale in Feet

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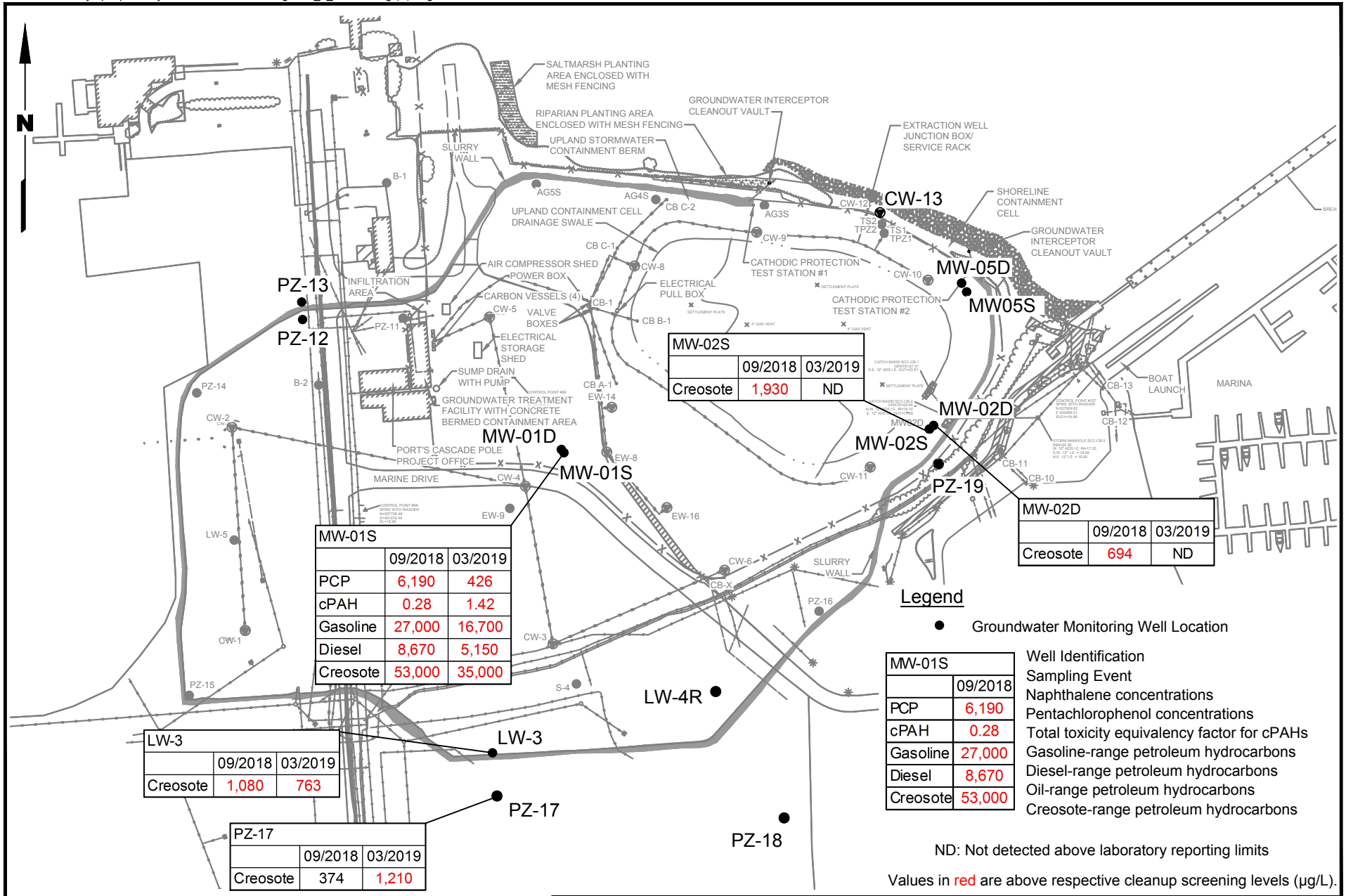
Deep and Shallow Interior Groundwater Monitoring Well Pairs

Figure 2



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Groundwater Quality Exceedances

Figure 3

Table 1
Groundwater Elevations
Cascade Pole Site
Port of Olympia, Washington

Collection Date	Well ID	Depth to Groundwater (ft) (a)	Top of Well Casing Elevation (MLLW)	Groundwater Elevation (MLLW) (a)	Maximum Elevation Goal (b)	Goal Exceeded?	Notes
4/27/2018	PZ-13	5.99	19.50	13.51	--		
4/27/2018	PZ-12	3.65	19.00	15.35	15.50	No	
5/28/2018	PZ-13	6.93	19.50	12.57	--		
5/28/2018	PZ-12	4.06	19.00	14.94	15.50	No	
6/29/2018	PZ-13	7.15	19.50	12.35	--		
6/29/2018	PZ-12	4.31	19.00	14.69	15.50	No	
7/15/2018	PZ-13	6.93	19.50	12.57	--		
7/15/2018	PZ-12	4.34	19.00	14.66	15.50	No	
8/12/2018	PZ-13	6.94	19.50	12.56	--		
8/12/2018	PZ-12	4.58	19.00	14.42	15.50	No	
9/12/2018	PZ-13	7.06	19.50	12.44	--		
9/12/2018	PZ-12	4.74	19.00	14.26	15.50	No	
10/6/2018	PZ-13	7.12	19.50	12.38	--		
10/6/2018	PZ-12	4.77	19.00	14.23	15.50	No	
11/4/2018	PZ-13	6.63	19.50	12.87	--		
11/4/2018	PZ-12	4.44	19.00	14.56	15.50	No	
12/2/2018	PZ-13	5.72	19.50	13.78	--		
12/2/2018	PZ-12	4.38	19.00	14.62	15.50	No	
1/1/2019	PZ-13	5.44	19.50	14.06	--		
1/1/2019	PZ-12	4.12	19.00	14.88	15.50	No	
2/2/2019	PZ-13	5.89	19.50	13.61	--		
2/2/2019	PZ-12	4.02	19.00	14.98	15.50	No	
3/11/2019	PZ-13	6.45	19.50	13.05	--		
3/11/2019	PZ-12	4.10	19.00	14.90	15.50	No	
4/27/2018	PZ-17	5.83	20.48	14.65	--		
4/27/2018	LW-3	4.57	19.83	15.26	15.50	No	
5/28/2018	PZ-17	6.22	20.48	14.26	--		
5/28/2018	LW-3	4.61	19.83	15.22	15.50	No	
6/29/2018	PZ-17	6.57	20.48	13.91	--		
6/29/2018	LW-3	5.06	19.83	14.77	15.50	No	
7/15/2018	PZ-17	6.57	20.48	13.91	--		
7/15/2018	LW-3	4.95	19.83	14.88	15.50	No	
8/12/2018	PZ-17	6.77	20.48	13.71	--		
8/12/2018	LW-3	5.09	19.83	14.74	15.50	No	
9/12/2018	PZ-17	6.99	20.48	13.49	--		
9/12/2018	LW-3	5.48	19.83	14.35	15.50	No	
10/6/2018	PZ-17	7.15	20.48	13.33	--		
10/6/2018	LW-3	5.53	19.83	14.30	15.50	No	

Table 1
Groundwater Elevations
Cascade Pole Site
Port of Olympia, Washington

Collection Date	Well ID	Depth to Groundwater (ft) (a)	Top of Well Casing Elevation (MLLW)	Groundwater Elevation (MLLW) (a)	Maximum Elevation Goal (b)	Goal Exceeded?	Notes
11/4/2018	PZ-17	7.12	20.48	13.36	--		
11/4/2018	LW-3	5.43	19.83	14.40	15.50	No	
12/2/2018	PZ-17	7.08	20.48	13.40	--		
12/2/2018	LW-3	5.70	19.83	14.13	15.50	No	
1/1/2019	PZ-17	6.47	20.48	14.01	--		
1/1/2019	LW-3	5.21	19.83	14.62	15.50	No	
2/2/2019	PZ-17	ND	20.48	--	--		inacessible; covered with logs
2/2/2019	LW-3	4.87	19.83	14.96	15.50	No	
3/11/2019	PZ-17	5.99	20.48	14.49	--		
3/11/2019	LW-3	4.73	19.83	15.10	15.50	No	
4/27/2018	PZ-18	ND	21.20	--	--		inacessible; covered with logs
4/27/2018	LW-4R	6.01	22.02	16.01	15.50	Yes	
5/28/2018	PZ-18	ND	21.20	--	--		inacessible; covered with logs
5/28/2018	LW-4R	ND	22.02	--	15.50	--	inacessible; covered with logs
6/29/2018	PZ-18	9.32	21.20	11.88	--		
6/29/2018	LW-4R	5.51	22.02	16.51	15.50	Yes	
7/15/2018	PZ-18	6.07	21.20	15.13	--		
7/15/2018	LW-4R	ND	22.02	--	15.50	--	inacessible; bark pile over well
8/12/2018	PZ-18	ND	21.20	--	--		inacessible; covered with logs
8/12/2018	LW-4R	5.49	22.02	16.53	15.50	Yes	
9/12/2018	PZ-18	6.90	21.20	14.30	--		
9/12/2018	LW-4R	5.93	22.02	16.09	15.50	Yes	
10/6/2018	PZ-18	7.10	21.20	14.10	--		
10/6/2018	LW-4R	6.04	22.02	15.98	15.50	Yes	
11/4/2018	PZ-18	6.62	21.20	14.58	--		
11/4/2018	LW-4R	--	22.02	--	15.50	--	Well covered in water and bark
12/2/2018	PZ-18	6.61	21.20	14.59	--		
12/2/2018	LW-4R	7.17	22.02	14.85	15.50	No	
1/1/2019	PZ-18	6.86	21.20	14.34	--		
1/1/2019	LW-4R	7.51	22.02	14.51	15.50	No	
2/2/2019	PZ-18	7.08	21.20	14.12	--		
2/2/2019	LW-4R	6.53	22.02	15.49	15.50	No	
3/11/2019	PZ-18	7.80	21.20	13.40	--		
3/11/2019	LW-4R	6.87	22.02	15.15	15.50	No	
4/27/2018	PZ-19	12.97	23.67	10.70	--		
4/27/2018	MW-02S	14.26	31.96	17.70	15.50	Yes	
5/28/2018	PZ-19	16.16	23.67	7.51	--		
5/28/2018	MW-02S	15.53	31.96	16.43	15.50	Yes	

Table 1
Groundwater Elevations
Cascade Pole Site
Port of Olympia, Washington

Collection Date	Well ID	Depth to Groundwater (ft) (a)	Top of Well Casing Elevation (MLLW)	Groundwater Elevation (MLLW) (a)	Maximum Elevation Goal (b)	Goal Exceeded?	Notes
6/29/2018	PZ-19	15.62	23.67	8.05	--		
6/29/2018	MW-02S	15.93	31.96	16.03	15.50	Yes	
7/15/2018	PZ-19	16.23	23.67	7.44	--		
7/15/2018	MW-02S	15.96	31.96	16.00	15.50	Yes	
8/12/2018	PZ-19	15.42	23.67	8.25	--		
8/12/2018	MW-02S	16.26	31.96	15.70	15.50	Yes	
9/12/2018	PZ-19	13.09	23.67	10.58	--		
9/12/2018	MW-02S	16.47	31.96	15.49	15.50	No	
10/6/2018	PZ-19	13.89	23.67	9.78	--		
10/6/2018	MW-02S	16.73	31.96	15.23	15.50	No	
11/4/2018	PZ-19	12.94	23.67	10.73	--		
11/4/2018	MW-02S	16.62	31.96	15.34	15.50	No	
12/2/2018	PZ-19	12.15	23.67	11.52	--		
12/2/2018	MW-02S	16.16	31.96	15.80	15.50	Yes	
1/1/2019	PZ-19	14.21	23.67	9.46	--		
1/1/2019	MW-02S	15.13	31.96	16.83	15.50	Yes	
2/2/2019	PZ-19	12.72	23.67	10.95	--		
2/2/2019	MW-02S	15.11	31.96	16.85	15.50	Yes	
3/11/2019	PZ-19	13.31	23.67	10.36	--		
3/11/2019	MW-02S	15.32	31.96	16.64	15.50	Yes	
4/27/2018	MW-02S	14.26	31.96	17.70	15.50	Yes	
4/27/2018	MW-02D	17.07	31.81	14.74	--		
5/28/2018	MW-02S	15.53	31.96	16.43	15.50	Yes	
5/28/2018	MW-02D	21.29	31.81	10.52	--		
6/29/2018	MW-02S	15.93	31.96	16.03	15.50	Yes	
6/29/2018	MW-02D	18.31	31.81	13.50	--		
7/15/2018	MW-02S	15.96	31.96	16.00	15.50	Yes	
7/15/2018	MW-02D	19.70	31.81	12.11	--		
8/12/2018	MW-02S	16.26	31.96	15.70	15.50	Yes	
8/12/2018	MW-02D	18.09	31.81	13.72	--		
9/12/2018	MW-02S	16.47	31.96	15.49	15.50	No	
9/12/2018	MW-02D	17.05	31.81	14.76	--		
10/6/2018	MW-02S	16.73	31.96	15.23	15.50	No	
10/6/2018	MW-02D	16.51	31.81	15.30	--		
11/4/2018	MW-02S	16.62	31.96	15.34	15.50	No	
11/4/2018	MW-02D	16.09	31.81	15.72	--		
12/2/2018	MW-02S	16.16	31.96	15.80	15.50	Yes	
12/2/2018	MW-02D	15.73	31.81	16.08	--		

Table 1
Groundwater Elevations
Cascade Pole Site
Port of Olympia, Washington

Collection Date	Well ID	Depth to Groundwater (ft) (a)	Top of Well Casing Elevation (MLLW)	Groundwater Elevation (MLLW) (a)	Maximum Elevation Goal (b)	Goal Exceeded?	Notes
1/1/2019	MW-02S	15.13	31.96	16.83	15.50	Yes	
1/1/2019	MW-02D	19.45	31.81	12.36	--		
2/2/2019	MW-02S	15.11	31.96	16.85	15.50	Yes	
2/2/2019	MW-02D	17.63	31.81	14.18	--		
3/11/2019	MW-02S	15.32	31.96	16.64	15.50	Yes	
3/11/2019	MW-02D	16.54	31.81	15.27	--		
4/27/2018	MW-01S	5.22	21.64	16.42	--		
4/27/2018	MW-01D	6.52	21.72	15.20	--		
5/28/2018	MW-01S	5.80	21.64	15.84	--		
5/28/2018	MW-01D	10.51	21.72	11.21	--		
6/29/2018	MW-01S	6.17	21.64	15.47	--		
6/29/2018	MW-01D	8.75	21.72	12.97	--		
7/15/2018	MW-01S	6.23	21.64	15.41	--		
7/15/2018	MW-01D	9.93	21.72	11.79	--		
8/12/2018	MW-01S	6.51	21.64	15.13	--		
8/12/2018	MW-01D	8.80	21.72	12.92	--		
9/12/2018	MW-01S	6.75	21.64	14.89	--		
9/12/2018	MW-01D	7.83	21.72	13.89	--		
10/6/2018	MW-01S	6.91	21.64	14.73	--		
10/6/2018	MW-01D	7.32	21.72	14.40	--		
11/4/2018	MW-01S	6.73	21.64	14.91	--		
11/4/2018	MW-01D	6.92	21.72	14.80	--		
12/2/2018	MW-01S	6.73	21.64	14.91	--		
12/2/2018	MW-01D	6.52	21.72	15.20	--		
1/1/2019	MW-01S	6.29	21.64	15.35	--		
1/1/2019	MW-01D	8.96	21.72	12.76	--		
2/2/2019	MW-01S	5.91	21.64	15.73	--		
2/2/2019	MW-01D	7.30	21.72	14.42	--		
3/11/2019	MW-01S	5.81	21.64	15.83	--		
3/11/2019	MW-01D	7.26	21.72	14.46	--		
4/27/2018	MW-05S	11.64	29.45	17.81	16.50	Yes	
4/27/2018	MW-05D	10.64	26.50	15.86	--		
5/28/2018	MW-05S	12.91	29.45	16.54	16.50	Yes	
5/28/2018	MW-05D	15.97	26.50	10.53	--		
6/29/2018	MW-05S	13.23	29.45	16.22	16.50	No	
6/29/2018	MW-05D	12.04	26.50	14.46	--		
7/15/2018	MW-05S	13.23	29.45	16.22	16.50	No	
7/15/2018	MW-05D	13.78	26.50	12.72	--		

Table 1
Groundwater Elevations
Cascade Pole Site
Port of Olympia, Washington

Collection Date	Well ID	Depth to Groundwater (ft) (a)	Top of Well Casing Elevation (MLLW)	Groundwater Elevation (MLLW) (a)	Maximum Elevation Goal (b)	Goal Exceeded?	Notes
8/12/2018	MW-05S	13.48	29.45	15.97	16.50	No	
8/12/2018	MW-05D	11.76	26.50	14.74	--		
9/12/2018	MW-05S	13.70	29.45	15.75	16.50	No	
9/12/2018	MW-05D	10.53	26.50	15.97	--		
10/6/2018	MW-05S	13.99	29.45	15.46	16.50	No	
10/6/2018	MW-05D	10.14	26.50	16.36	--		
11/4/2018	MW-05S	13.96	29.45	15.49	16.50	No	
11/4/2018	MW-05D	9.61	26.50	16.89	--		
12/2/2018	MW-05S	13.31	29.45	16.14	16.50	No	
12/2/2018	MW-05D	9.27	26.50	17.23	--		
1/1/2019	MW-05S	12.33	29.45	17.12	16.50	Yes	
1/1/2019	MW-05D	13.81	26.50	12.69	--		
2/2/2019	MW-05S	12.76	29.45	16.69	16.50	Yes	
2/2/2019	MW-05D	12.17	26.50	14.33	--		
3/11/2019	MW-05S	12.91	29.45	16.54	16.50	Yes	
3/11/2019	MW-05D	10.18	26.50	16.32	--		

Abbreviations and Acronyms:

ft = feet
ID = identification
MLLW = mean lower low water
NA = not available
NM = not measured
PVC = polyvinyl chloride

Notes:

Groundwater elevations determined by subtracting depth to groundwater below top of casing (ft) from top of well casing elevation (MLLW, ft).

(a) Below top of PVC well casing.
(b) Short-term hydraulic control goal is 15.5 ft along the majority of the cutoff wall alignment and 16.5 ft adjacent to Budd Inlet.

Table 2
Summary of Current Analytical Results
Groundwater Compliance Monitoring
Cascade Pole Site
Port of Olympia, Washington

	Cleanup Screening Levels (a)	PZ-12 18I0183-13 9/12/2018	PZ-12 19C0223-13 3/11/2019	PZ-13 18I0183-14 9/12/2018	PZ-13 19C0223-14 3/11/2019	PZ-17 18I0183-05 9/12/2018	PZ-17 19C0223-05 3/11/2019	PZ-18 18I0183-04 9/12/2018	PZ-18 19C0223-04 3/11/2019	PZ-19 18I0183-12 9/13/2018	PZ-19 19C0223-12 3/12/2019	LW-3 18I0183-08 9/12/2018	LW-3 19C0223-08 3/11/2019	LW-4R 18I0183-09 9/12/2018	LW-4R 19C0223-09 3/11/2019	MW-01S 18I0183-16 9/13/2018	MW-01S 19C0223-16 3/12/2019
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs) (µg/L)																	
EPA Method SW8270D / SW8270D-SIM																	
Naphthalene	4900	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	**4,230**	**1,620**
2-Methylnaphthalene		1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	**555**	**329**
Acenaphthylene		1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	**7.2**	3.0 U
Acenaphthene		1.0 U	1.0 U	1.0 U	1.0 UJ	**1.0**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	**260**	**201**
Dibenzofuran		1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	**98.2**	**79.9**
Fluorene		1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	**92.5**	**74.2**
Pentachlorophenol	3	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	**6,190**	**426**
Phenanthrene		1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	**89.2**	**93.8**
Anthracene		1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	**15.5**	**20.1**
Fluoranthene		1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	**11.0**	**26.0**
Pyrene	2600	1.0 U	1.0 UJ	1.0 U	1.0 UJ	1.0 U	1.0 UJ	1.0 U	1.0 UJ	1.0 U	1.0 UJ	1.0 U	1.0 UJ	1.0 U	1.0 UJ	**8.2**	**17.5**
Benzo(a)Anthracene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	**0.61**	**2.52**
Chrysene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	**0.65**	**2.84**
Benzo(a)Pyrene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.30 U	**0.91**
Indeno(1,2,3-cd)Pyrene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.30 U	**0.22**
Dibenz(a,h)Anthracene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.30 U	0.10 U
Benzo(g,h,i)Perylene		1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	3.0 U	3.0 U
1-Methylnaphthalene		1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	**391**	**237**
Total Benzofluoranthenes		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	0.20 U	0.20 U	0.20 U	0.20 U	0.60 U	**2.00**
cPAH TEQ (b)	0.1 (c)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.07**	**1.41**
cPAH TEQ (b) (Using 1/2 RL for ND)	0.1 (c)	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076	**0.28**	**1.42**
PENTACHLOROPHENOL (µg/L)																	
EPA Method SW8041A/SW8270C,D																	
Pentachlorophenol	3	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	NA	NA
PETROLEUM HYDROCARBONS																	
Method NWTPH-Gx (µg/L)																	
Gasoline	1,000	100 U	100 U	100 U	100 U	100 U	**443**	100 U	100 U	100 U	100 U	**230**	**207**	100 U	100 U	**27,000**	**16,700**
Method NWTPH-Dx (µg/L)																	
Diesel	500	100 U	100 U	100 U	100 U	100 U	**182**	100 U	100 U	100 U	100 U	**200**	**133**	100 U	100 U	**8,670**	**5,150**
Motor Oil	500	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U	4,000 U	234
Creosote Oil	500	200 U	200 U	200 U	200 U	**374**	**1,210**	200 U	200 U	200 U	200 U	**1,080**	**763**	200 U	200 U	**53,000**	**35,000**

Table 2
Summary of Current Analytical Results
Groundwater Compliance Monitoring
Cascade Pole Site
Port of Olympia, Washington

	Cleanup Screening Levels (a)	MW-02S 18I0183-10 9/13/2018	MW-02S 19C0223-10 3/12/2019	MW-05S 18I0183-02 9/12/2018	Dup of MW-05S PZ-30 18I0183-03 9/12/2018	MW-05S 19C0223-02 3/11/2019	Dup of MW-05S PZ-30 19C0223-03 3/11/2019	MW-01D 18I0183-15 9/13/2018	MW-01D 19C0223-15 3/12/2019	MW-02D 18I0183-11 9/13/2018	MW-02D 19C0223-11 3/12/2019	MW-05D 18I0183-07 9/12/2018	MW-05D 19C0223-07 3/11/2019	CW-13 18I0183-06 9/12/2018	CW-13 19C0223-06 3/11/2019
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs) (µg/L)															
EPA Method SW8270D / SW8270D-SIM															
Naphthalene	4900	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 UJ	1.0 UJ	**1.1**	1.0 U	**37.6**	**4.3**	1.0 U	1.0 U	1.0 U	**24.4**
2-Methylnaphthalene		1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 UJ	1.0 UJ	1.0 U	1.0 U	**6.7**	**1.3**	1.0 U	1.0 U	1.0 U	1.0 U
Acenaphthylene		1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 UJ	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Acenaphthene		**1.3**	1.0 UJ	**5.0**	**6.0**	1.0 UJ	**4.4** J	1.0 U	1.0 U	**12.7**	**3.6**	**4.6**	1.0 U	1.0 U	**9.8**
Dibenzofuran		1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 UJ	1.0 UJ	1.0 U	1.0 U	**3.8**	**1.2**	1.0 U	1.0 U	1.0 U	**2.7**
Fluorene		1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 UJ	1.0 UJ	1.0 U	1.0 U	**4.1**	**1.3**	1.0 U	1.0 U	1.0 U	**3.8**
Pentachlorophenol	3	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Phenanthrene		1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 UJ	1.0 UJ	1.0 U	1.0 U	**4.9**	**1.2**	1.0 U	1.0 U	1.0 U	**1.8**
Anthracene		1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 UJ	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Fluoranthene		1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 UJ	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Pyrene	2600	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 UJ	1.0 UJ	1.0 U	1.0 UJ	1.0 U	1.0 UJ	1.0 U	1.0 UJ	1.0 U	1.0 UJ
Benzo(a)Anthracene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Chrysene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Benzo(a)Pyrene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Indeno(1,2,3-cd)Pyrene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Dibenz(a,h)Anthracene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Benzo(g,h,i)Perylene		1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 UJ	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1-Methylnaphthalene		1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 UJ	1.0 UJ	1.0 U	1.0 U	**7.7**	**1.5**	1.0 U	1.0 U	1.0 U	**5.9**
Total Benzofluoranthenes		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	0.20 U	0.20 U	0.20 U	0.20 U
cPAH TEQ (b)	0.1 (c)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cPAH TEQ (b) (Using 1/2 RL for ND)	0.1 (c)	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076
PENTACHLOROPHENOL (µg/L)															
EPA Method SW8041A/SW8270C,D															
Pentachlorophenol	3	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
PETROLEUM HYDROCARBONS															
Method NWTPH-Gx (µg/L)															
Gasoline	1,000	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	**131**	100 U	100 U	100 U	100 U	**280**
Method NWTPH-Dx (µg/L)															
Diesel	500	**311**	100 U	100 U	100 U	100 U	100 U	100 U	100 U	**109**	100 U	100 U	100 U	100 U	100 U
Motor Oil	500	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U
Creosote Oil	500	**1,930**	200 U	**377**	**263**	200 U	200 U	200 U	200 U	**694**	200 U	200 U	200 U	200 U	200 U

Abbreviations and Acronyms:

cPAH = carcinogenic polycyclic aromatic hydrocarbon
µg/L = micrograms per liter
EPA = US Environmental Protection Agency
MTCA = Model Toxics Control Act
NA = not analyzed
ND = Not Detected.
NWTPH-Dx = total petroleum hydrocarbons diesel range
NWTPH-Gx = TPH gasoline range
PCP = pentachlorophenol
RL = reporting limit
SIM = select ion monitoring
WAC = Washington Administrative Code

Notes:

U = Indicates the compound was undetected at the given reporting limit.
J = Indicates the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
UJ = The analyte was not detected in the sample; the reported sample reporting limit is an estimate.
Bold indicates detected compound. Box indicates exceedance of screening levels.
Box indicates exceedance of screening level.

(a) Groundwater screening levels are MTCA Method B for marine surface water for cPAHs and PCP; MTCA Method A for TPH-Gx/TPH-Dx.
(b) Toxicity equivalency factor (TEQ) as described in WAC 173-340-708 (8).
(c) cPAH cleanup screening levels based on practical quantitation limit (PQL) for individual cPAHs.

APPENDIX A

Historical Analytical Results and Groundwater Elevations

Table A-1
Historical Analyltical Results
Groundwater Compliance Monitoring
Cascade Pole Site
Port of Olympia, Washington

	Cleanup Screening Levels for Groundwater	PZ-12 2005060439-08 6/27/2005	PZ-12 2006030253-01 3/20/2006	PZ-12 2006110182-02 11/11/2006	PZ-12 LS10B 10/1/2007	PZ-12 MO26G 3/20/208	PZ-12 NH92A 7/29/208	PZ-12 OH11B 1/8/2009	PZ-12 PK28A 8/11/2009	PZ-12 QF84J 1/15/2010	PZ-12 RS33A 10/18/2010	PZ-12 SO90O 3/24/2011	PZ-12 TH68B 8/8/2011	PZ-12 UL19B 3/7/2012	PZ-12 VP53F 10/25/2012	PZ-12 WF57A 2/27/2013	PZ-12 XC89D 8/29/2013	PZ-12 YA02K 2/19/2014
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs) (µg/L)																		
EPA Method SW8270D / SW8270D-SIM																		
Naphthalene	4900	0.10 U	NA	**0.30**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**3.0**	1.0 U	1.0 U	1.0 U	1.0 U	**1.8**	1.0 U
2-Methylnaphthalene		NA	NA	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Acenaphthylene		0.10 U	NA	0.10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Acenaphthene		0.10 U	NA	0.10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dibenzofuran		NA	NA	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Fluorene		0.10 U	NA	0.10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Pentachlorophenol	3	NA	NA	NA	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	10 U	10 U	10 U
Phenanthrene		0.10 U	NA	0.10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbazole		NA	NA	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	NA	NA	NA
Anthracene		**0.20**	NA	0.10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Fluoranthene		0.10 U	NA	0.10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Pyrene	2600	0.10 U	NA	0.10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Benzo(a)Anthracene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Chrysene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Benzo(b)Fluoranthene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)Fluoranthene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 UJ	0.10 U	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)Pyrene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Indeno(1,2,3-cd)Pyrene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Dibenz(a,h)Anthracene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Benzo(g,h,i)Perylene		0.10 U	NA	0.10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1-Methylnaphthalene		NA	NA	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Total Benzofluoranthenes		NA	NA	NA	NA	NA	NA	NA	NA	NA	0.10 U	0.10 U	0.10 U	0.10 U	0.20 U	0.20 U	0.20 U	0.10 U
cPAH TEQ (a)	0.1 (b)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cPAH TEQ (a) (Using 1/2 RL for ND)	0.1 (b)	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.071	0.071	0.071	0.071	0.076	0.076	0.076	0.071
PENTACHLOROPHENOL (µg/L)																		
EPA Method SW8041A/SW8270C,D																		
Pentachlorophenol	3	10 U	0.10 U	0.1 U	0.25 U	0.25 U	0.25 UJ	0.25 U	0.26 U	0.25 U	0.25 U	**1.8**	0.25 U	0.25 U	**0.31**	0.25 U	**5.8**	0.25 U
PETROLEUM HYDROCARBONS																		
Method NWTPH-G (µg/L)																		
Gasoline	1,000	50 U	50 U	50 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U
Method NWTPH-Dx (µg/L)																		
Diesel	500	100 U	100 U	100 U	250 U	250 U	250 U	250 U	250 U	250 U	100 U	110 U	100 U	100 U	100 U	100 U	100 U	100 U
Motor Oil	500	500 U	500 U	500 U	500 U	500 U	500 U	500 U	250 U	500 U	200 U	220 U	200 U	200 U	200 U	200 U	200 U	200 U
Creosote Oil	500	NA	NA	NA	NA	250 U	500 U	250 U	500 U	250 U	100 U	220 U	200 U	200 U	100 U	**100**	100 U	100 U
BTEX (µg/L)																		
Method SW8021B/SW021B MOD																		
Benzene	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
m, p-Xylene	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table A-1
Historical Analyltical Results
Groundwater Compliance Monitoring
Cascade Pole Site
Port of Olympia, Washington

	Cleanup Screening Levels for Groundwater	PZ-12 ZB62K 9/24/2014	PZ-12 ZZ61A 3/9/2015	PZ-12 ANH7L 9/25/2015	PZ-12 AWD0J 2/17/2016	PZ-12 16I0325-11 9/20/2016	PZ-12 17C0014-16 3/1/2017	PZ-12 17J0190-16 10/12/2017	PZ-12 18C0203-13 3/9/2018	PZ-12 18I0183-13 9/12/2018	PZ-12 19C0223-13 3/11/2019	PZ-13 2005060392-01 6/27/2005	PZ-13 2006030241-01 3/19/2006	PZ-13 2006110182-01 11/11/2006	PZ-13 LS10A 9/30/2007	PZ-13 MO26H 3/19/208	PZ-13 NH92B 7/29/208	PZ-13 OH11A 1/8/2009
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs) (µg/L)																		
EPA Method SW8270D / SW8270D-SIM																		
Naphthalene	4900	**2.7**	1.0 U	**1.2**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.10 U	NA	**10.2**	1.0 U	1.0 U	1.0 U	1.0 U
2-Methylnaphthalene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	NA	NA	1.0 U	1.0 U	1.0 U	1.0 U
Acenaphthylene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.10 U	NA	0.10 U	1.0 U	1.0 U	1.0 U	1.0 U
Acenaphthene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.10 U	NA	0.75	1.0 U	1.0 U	1.0 U	1.0 U
Dibenzofuran		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	NA	NA	1.0 U	1.0 U	1.0 U	1.0 U
Fluorene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.10 U	NA	0.10 U	1.0 U	1.0 U	1.0 U	1.0 U
Pentachlorophenol	3	10 UJ	10 UJ	10 UJ	10 U	10 U	10 U	10.0 U	10.0 U	10.0 U	10.0 U	NA	NA	NA	5.0 U	5.0 U	5.0 U	5.0 U
Phenanthrene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.10 U	NA	0.10 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbazole		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	NA	NA	NA	1.0 U	1.0 U	1.0 U	1.0 U
Anthracene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.10 U	NA	0.10 U	1.0 U	1.0 U	1.0 U	1.0 U
Fluoranthene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.10 U	NA	0.10 U	1.0 U	1.0 U	1.0 U	1.0 U
Pyrene	2600	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	0.10 U	NA	0.10 U	1.0 U	1.0 U	1.0 U	1.0 U
Benzo(a)Anthracene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Chrysene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Benzo(b)Fluoranthene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Benzo(k)Fluoranthene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Benzo(a)Pyrene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Indeno(1,2,3-cd)Pyrene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Dibenz(a,h)Anthracene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Benzo(g,h,i)Perylene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.10 U	NA	0.10 U	1.0 U	1.0 U	1.0 U	1.0 U
1-Methylnaphthalene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	NA	NA	1.0 U	1.0 U	1.0 U	1.0 U
Total Benzofluoranthenes		0.10 U	0.20 U	0.10 U	0.10 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	NA	NA	NA	NA	NA	NA	NA
cPAH TEQ (a)	0.1 (b)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cPAH TEQ (a) (Using 1/2 RL for ND)	0.1 (b)	0.071	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076
PENTACHLOROPHENOL (µg/L)																		
EPA Method SW8041A/SW8270C,D																		
Pentachlorophenol	3	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	10 U	0.10 U	0.10 U	0.25 U	0.25 U	0.25 UJ	0.25 U
PETROLEUM HYDROCARBONS																		
Method NWTPH-G (µg/L)																		
Gasoline	1,000	250 U	250 U	250 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	50 U	50 U	**112**	250 U	250 U	250 U	250 U
Method NWTPH-Dx (µg/L)																		
Diesel	500	100 U	100 U	100 U	100 U	100 UJ	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	250 U	250 U	250 U	250 U
Motor Oil	500	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U	500 U	500 U	500 U	500 U	500 U	500 U	500 U
Creosote Oil	500	100 U	100 U	100 U	100 U	100 U	100 U	200 U	200 U	200 U	200 U	NA	NA	NA	NA	250 U	500 U	250 U
BTEX (µg/L)																		
Method SW8021B/SW021B MOD																		
Benzene	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
m, p-Xylene	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table A-1
Historical Analyltical Results
Groundwater Compliance Monitoring
Cascade Pole Site
Port of Olympia, Washington

	Cleanup Screening Levels for Groundwater	PZ-13 PK28B 8/11/2009	PZ-13 PP40A 9/21/2009	PZ-13 QF84F 1/14/2010	PZ-13 RS33B 10/18/2010	PZ-13 SO90E 3/24/2011	PZ-13 TH68A 8/8/2011	PZ-13 UL19F 3/7/2012	PZ-13 VP53A 10/25/2012	PZ-13 WF57B 2/27/2013	PZ-13 XC89B 8/29/2013	PZ-13 XH58A 10/1/2013	PZ-13 YA02H 2/19/2014	PZ-13 ZB62L 9/24/2014	PZ-13 ZZ61B 3/9/2015	PZ-13 ANH7M 9/25/2015	PZ-13 AWD0K 2/17/2016	PZ-13 16I0325-12 9/20/2016
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs) (µg/L)																		
EPA Method SW8270D / SW8270D-SIM																		
Naphthalene	4900	**9.1**	**4.0**	**2.2**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	**5.9**	1.0 U	**2.6**	**1.4**	1.0 U
2-Methylnaphthalene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Acenaphthylene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Acenaphthene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dibenzofuran		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Fluorene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Pentachlorophenol	3	5 U	NA	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	10 U	10 U	10 U	NA	10 U	10 UJ	10 UJ	10 UJ	10 U	10 U
Phenanthrene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbazole		1.0 U	NA	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	NA	NA	NA	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Anthracene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Fluoranthene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Pyrene	2600	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Benzo(a)Anthracene		0.10 U	1.0 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	NA	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Chrysene		0.10 U	1.0 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	NA	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Benzo(b)Fluoranthene		0.10 U	1.0 U	0.10 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)Fluoranthene		0.10 UJ	1.0 U	0.10 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)Pyrene		0.10 U	1.0 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	NA	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Indeno(1,2,3-cd)Pyrene		0.10 U	1.0 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	NA	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Dibenz(a,h)Anthracene		0.10 U	1.0 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	NA	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Benzo(g,h,i)Perylene		1.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1-Methylnaphthalene		U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Total Benzofluoranthenes		NA	NA	NA	0.10 U	0.10 U	0.10 U	0.10 U	0.20 U	0.20 U	0.20 U	NA	0.10 U	0.10 U	0.20 U	0.10 U	0.10 U	0.20 U
cPAH TEQ (a)	0.1 (b)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND
cPAH TEQ (a) (Using 1/2 RL for ND)	0.1 (b)	0.076	0.76	0.076	0.071	0.071	0.071	0.071	0.076	0.076	0.076	NA	0.071	0.071	0.076	0.076	0.076	0.076
PENTACHLOROPHENOL (µg/L)																		
EPA Method SW8041A/SW8270C,D																		
Pentachlorophenol	3	0.26 U	NA	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	NA	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
PETROLEUM HYDROCARBONS																		
Method NWTPH-G (µg/L)																		
Gasoline	1,000	**1,900**	**310**	250 U	250 U	250 U	250 U	**250**	250 U	250 U	250 U	NA	250 U	250 U	250 U	250 U	100 U	100 U
Method NWTPH-Dx (µg/L)																		
Diesel	500	250 U	NA	250 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	110 U	100 U	100 U	100 UJ
Motor Oil	500	250 U	NA	500 U	200 U	200 U	200 U	200 U	200 U	200 U	**540**	200 U	200 U	200 U	220 U	200 U	210 U	200 U
Creosote Oil	500	500 U	NA	250 U	100 U	200 U	200 U	200 U	100 U	**170**	**160**	100 U	100 U	100 U	110 U	100 U	110 U	100 U
BTEX (µg/L)																		
Method SW8021B/SW021B MOD																		
Benzene	5	NA	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1,000	NA	**56**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	700	NA	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
m, p-Xylene	1,000	NA	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	1,000	NA	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table A-1
Historical Analyltical Results
Groundwater Compliance Monitoring
Cascade Pole Site
Port of Olympia, Washington

	Cleanup Screening Levels for Groundwater	PZ-13 17C0014-06 3/1/2017	PZ-13 17J0190-06 10/12/2017	PZ-13 18C0203-14 3/9/2018	PZ-13 18I0183-14 9/12/2018	PZ-13 19C0223-14 3/11/2019	PZ-17 2005060439-04 6/28/2005	PZ-17 2006030253-02 3/20/2006	PZ-17 2006110200-01 11/13/2006	PZ-17 LS10E 10/1/2007	PZ-17 MO07B 3/19/208	PZ-17 NH70B 7/28/208	PZ-17 OH11C 1/8/2009	PZ-17 PJ99B 8/10/2009	PZ-17 QF84C 1/14/2010	PZ-17 RS33D 10/18/2010	PZ-17 SO90L 3/24/2011
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs) (µg/L)																	
EPA Method SW8270D / SW8270D-SIM																	
Naphthalene	4900	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	0.10 U	NA	**0.11**	1.0 U	1.0 U	1.0 U	1.0 U	1.2 U	1.0 U	1.0 U	**3.2**
2-Methylnaphthalene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	NA	NA	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.2 U	1.0 U	1.0 U	1.0 U
Acenaphthylene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	0.10 U	NA	0.10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.2 U	1.0 U	1.0 U	1.0 U
Acenaphthene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	0.10 U	NA	**0.23**	1.0 U	1.0 U	1.0 U	1.0 U	1.2 U	1.0 U	1.0 U	1.0 U
Dibenzofuran		1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	NA	NA	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.2 U	1.0 U	1.0 U	1.0 U
Fluorene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	0.10 U	NA	0.10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.2 U	1.0 U	1.0 U	1.0 U
Pentachlorophenol	3	10 U	10.0 U	10.0 U	10.0 U	10.0 U	NA	NA	NA	5.0 U	5.0 U	5.0 U	5.0 U	5.9 U	5.0 U	5.0 U	5.0 U
Phenanthrene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	0.10 U	NA	0.10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.2 U	1.0 U	1.0 U	1.0 U
Carbazole		1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	NA	NA	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.2 U	1.0 U	1.0 UJ	1.0 U
Anthracene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	0.10 U	NA	0.10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.2 U	1.0 U	1.0 U	1.0 U
Fluoranthene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	0.10 U	NA	0.10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.2 U	1.0 U	1.0 U	1.0 U
Pyrene	2600	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	0.10 U	NA	0.10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.2 U	1.0 U	1.0 U	1.0 U
Benzo(a)Anthracene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.11 U
Chrysene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.11 U
Benzo(b)Fluoranthene		NA	NA	NA	NA	NA	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	NA	NA
Benzo(k)Fluoranthene		NA	NA	NA	NA	NA	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	NA	NA
Benzo(a)Pyrene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.11 U
Indeno(1,2,3-cd)Pyrene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.11 U
Dibenz(a,h)Anthracene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.11 U
Benzo(g,h,i)Perylene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	0.10 U	NA	0.10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.2 U	1.0 U	1.0 U	1.0 U
1-Methylnaphthalene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	NA	NA	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.2 U	1.0 U	1.0 U	1.0 U
Total Benzofluoranthenes		0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.10 U	0.11 U
cPAH TEQ (a)	0.1 (b)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cPAH TEQ (a) (Using 1/2 RL for ND)	0.1 (b)	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.071	0.078
PENTACHLOROPHENOL (µg/L)																	
EPA Method SW8041A/SW8270C,D																	
Pentachlorophenol	3	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	10 U	0.10 U	0.10 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
PETROLEUM HYDROCARBONS																	
Method NWTPH-G (µg/L)																	
Gasoline	1,000	100 U	100 U	100 U	100 U	100 U	50 U	50 U	50 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U
Method NWTPH-Dx (µg/L)																	
Diesel	500	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	250 U	250 U	250 U	250 U	250 U	250 U	100 U	100 U
Motor Oil	500	200 U	200 U	200 U	200 U	200 U	500 U	500 U	500 U	500 U	500 U	500 U	500 U	500 U	500 U	200 U	200 U
Creosote Oil	500	100 U	200 U	200 U	200 U	200 U	NA	NA	NA	NA	250 U	500 U	250 U	250 U	250 U	100 U	200 U
BTEX (µg/L)																	
Method SW8021B/SW021B MOD																	
Benzene	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
m, p-Xylene	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table A-1
Historical Analyltical Results
Groundwater Compliance Monitoring
Cascade Pole Site
Port of Olympia, Washington

	Cleanup Screening Levels for Groundwater	PZ-17 TH68C 8/8/2011	PZ-17 UL19C 3/7/2012	PZ-17 VP53G 10/26/2012	PZ-17 WF57G 2/27/2013	PZ-17 XC81H 8/28/2013	PZ-17 YA02O 2/19/2014	PZ-17 ZB62F 9/23/2014	PZ-17 ZF85A 10/16/2014	PZ-17 ZZ61H 3/9/2015	PZ-17 ANH7B 9/24/2015	PZ-17 APW3B 11/3/2015	PZ-17 AWD0H 2/16/2016	PZ-17 16I0325-13 9/20/2016	PZ-17 16K0034-01 11/1/2016	PZ-17 (e) 2016110077 11/1/2016	PZ-17 17C0014-07 2/28/2017	PZ-17 17J0190-07 10/11/2017
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs) (µg/L)																		
EPA Method SW8270D / SW8270D-SIM																		
Naphthalene	4900	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	NA	1.0 U	1.0 U
2-Methylnaphthalene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	**1.9**	**4.8**	1.0 U	1.0 U	NA	NA	1.0 U	1.0 U
Acenaphthylene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	NA	1.0 U	1.0 U
Acenaphthene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	**2.6**	**18**	**1.9**	**2.3**	NA	NA	1.0 U	**1.5**
Dibenzofuran		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	1.0 U	**1.4**	1.0 U	1.0 U	NA	NA	1.0 U	1.0 U
Fluorene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	1.0 U	**3.2**	1.0 U	1.0 U	NA	NA	1.0 U	1.0 U
Pentachlorophenol	3	5.0 U	5.0 U	10 U	10 U	10 U	10 U	10 UJ	NA	10 UJ	10 UJ	10 U	10 U	10 U	10 U	NA	10 U	10.0 U
Phenanthrene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	NA	1.0 U	1.0 U
Carbazole		1.0 U	1.0 U	1.0 U	NA	NA	NA	1.0 U	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	NA	1.0 U	1.0 U
Anthracene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	NA	1.0 U	1.0 U
Fluoranthene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	NA	1.0 U	1.0 U
Pyrene	2600	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	NA	1.0 U	1.0 U
Benzo(a)Anthracene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.11 U	NA	0.10 U	0.10 U	1.0 U	0.10 U	0.10 U	NA	NA	0.10 U	0.10 U
Chrysene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.11 U	NA	0.10 U	0.10 U	1.0 U	0.10 U	0.10 U	NA	NA	0.10 U	0.10 U
Benzo(b)Fluoranthene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)Fluoranthene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)Pyrene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.11 U	NA	0.10 U	0.10 U	1.0 U	0.10 U	0.10 U	NA	NA	0.10 U	0.10 U
Indeno(1,2,3-cd)Pyrene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.11 U	NA	0.10 U	0.10 U	1.0 U	0.10 U	0.10 U	NA	NA	0.10 U	0.10 U
Dibenz(a,h)Anthracene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.11 U	NA	0.10 U	0.10 U	1.0 U	0.10 U	0.10 U	NA	NA	0.10 U	0.10 U
Benzo(g,h,i)Perylene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	NA	1.0 U	1.0 U
1-Methylnaphthalene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	**6.7**	**27**	**2.4**	**2.8**	NA	NA	1.0 U	**1.4**
Total Benzofluoranthenes		0.10 U	0.10 U	0.20 U	0.20 U	0.20 U	0.10 U	0.11 U	NA	0.20 U	0.10 U	NA	0.10 U	0.20 U	NA	NA	0.20 U	0.20 U
cPAH TEQ (a)	0.1 (b)	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	NA	NA	ND	ND
cPAH TEQ (a) (Using 1/2 RL for ND)	0.1 (b)	0.071	0.071	0.076	0.076	0.076	0.071	0.078	NA	0.076	0.076	0.760	0.076	0.076	NA	NA	0.076	0.076
PENTACHLOROPHENOL (µg/L)																		
EPA Method SW8041A/SW8270C,D																		
Pentachlorophenol	3	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	1.8 U	0.25 U	NA	0.25 U	0.25 U	NA	0.26 U	**5.42** J	0.25 U	0.100 U	0.25 U	0.25 U
PETROLEUM HYDROCARBONS																		
Method NWTPH-G (µg/L)																		
Gasoline	1,000	250 U	250 U	250 U	250 U	250 U	250 U	250 U	NA	250 U	**300**	**590**	100 U	**154**	NA	NA	100 U	100 U
Method NWTPH-Dx (µg/L)																		
Diesel	500	110 U	100 U	100 U	100 U	100 U	100 U	**110**	100 U	100 U	100 U	NA	100 U	100 UJ	NA	NA	100 U	100 U
Motor Oil	500	220 U	200 U	200 U	200 U	200 U	200 U	**640**	200 U	200 U	200 U	NA	200 U	200 U	NA	NA	200 U	200 U
Creosote Oil	500	220 U	200 U	100 U	**150**	100 U	100 U	**310**	100 U	100 U	**210**	NA	100 U	**126**	NA	NA	100 U	200 U
BTEX (µg/L)																		
Method SW8021B/SW021B MOD																		
Benzene	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
m, p-Xylene	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table A-1
Historical Analyltical Results
Groundwater Compliance Monitoring
Cascade Pole Site
Port of Olympia, Washington

	Cleanup Screening Levels for Groundwater	PZ-17 18C0203-05 3/8/2018	PZ-17 18I0183-05 9/12/2018	PZ-17 19C0223-05 3/11/2019	PZ-18 2005060439-01 6/29/2005	PZ-18 2006030261-01 3/21/2006	PZ-18 2006110239-01 11/14/2006	PZ-18 LS10C 10/1/2007	PZ-18 MO07C 3/19/208	PZ-18 NH70C 7/28/208	PZ-18 NM64A 8/28/208	PZ-18 OH11E 1/8/2009	PZ-18 PJ99C 8/10/2009	PZ-18 PP40B 9/21/2009	PZ-18 QF84K 1/15/2010	PZ-18 RS33L 10/19/2010	PZ-18 SO90F 3/24/2011
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs) (µg/L)																	
EPA Method SW8270D / SW8270D-SIM																	
Naphthalene	4900	1.0 U	1.0 U	1.0 U	0.10 U	NA	**0.13**	1.0 U	1.0 U	1.0 U	NA	1.0 U	**3.2**	1.0 U	**2.8**	1.0 U	1.0 U
2-Methylnaphthalene		1.0 U	1.0 U	1.0 U	NA	NA	NA	1.0 U	1.0 U	1.0 U	NA	1.0 U	1.1 U	1.0 U	1.0 U	1.0 U	1.0 U
Acenaphthylene		1.0 U	1.0 U	1.0 U	0.10 U	NA	0.10 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	1.1 U	1.0 U	1.0 U	1.0 U	1.0 U
Acenaphthene		1.0 U	**1.0**	1.0 U	0.10 U	NA	0.10 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	1.1 U	1.0 U	1.0 U	1.0 U	1.0 U
Dibenzofuran		1.0 U	1.0 U	1.0 U	NA	NA	NA	1.0 U	1.0 U	1.0 U	NA	1.0 U	1.1 U	1.0 U	1.0 U	1.0 U	1.0 U
Fluorene		1.0 U	1.0 U	1.0 U	0.10 U	NA	0.10 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	1.1 U	1.0 U	1.0 U	1.0 U	1.0 U
Pentachlorophenol	3	10.0 U	10.0 U	10.0 U	NA	NA	NA	5.0 U	5.0 U	5.0 U	NA	5.0 U	5.6 U	NA	5.0 U	5.0 U	5.0 U
Phenanthrene		1.0 U	1.0 U	1.0 U	0.10 U	NA	0.10 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	1.1 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbazole		1.0 U	1.0 U	1.0 UJ	NA	NA	NA	1.0 U	1.0 U	1.0 U	NA	1.0 U	1.1 U	NA	1.0 U	1.0 UJ	1.0 U
Anthracene		1.0 U	1.0 U	1.0 U	0.10 U	NA	0.10 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	1.1 U	1.0 U	1.0 U	1.0 U	1.0 U
Fluoranthene		1.0 U	1.0 U	1.0 U	0.10 U	NA	0.10 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	1.1 U	1.0 U	1.0 U	1.0 U	1.0 U
Pyrene	2600	1.0 U	1.0 U	1.0 UJ	0.10 U	NA	0.10 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	1.1 U	1.0 U	1.0 U	1.0 U	1.0 U
Benzo(a)Anthracene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	NA	0.10 U	0.10 U	1.0 U	0.11 U	0.10 U	0.10 U
Chrysene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	NA	0.10 U	0.10 U	1.0 U	0.11 U	0.10 U	0.10 U
Benzo(b)Fluoranthene		NA	NA	NA	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	NA	0.10 U	0.10 U	1.0 U	0.11 U	NA	NA
Benzo(k)Fluoranthene		NA	NA	NA	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	NA	0.10 U	0.10 U	1.0 U	0.11 U	NA	NA
Benzo(a)Pyrene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	NA	0.10 U	0.10 U	1.0 U	0.11 U	0.10 U	0.10 U
Indeno(1,2,3-cd)Pyrene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	NA	0.10 U	0.10 U	1.0 U	0.11 U	0.10 U	0.10 U
Dibenz(a,h)Anthracene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	NA	0.10 U	0.10 U	1.0 U	0.11 U	0.10 U	0.10 U
Benzo(g,h,i)Perylene		1.0 U	1.0 U	1.0 U	0.10 U	NA	0.10 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	1.1 U	1.0 U	1.0 U	1.0 U	1.0 U
1-Methylnaphthalene		1.0 U	1.0 U	1.0 U	NA	NA	NA	1.0 U	1.0 U	1.0 U	NA	1.0 U	1.1 U	1.0 U	1.0 U	1.0 U	1.0 U
Total Benzofluoranthenes		0.20 U	0.20 U	0.20 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.10 U	0.10 U
cPAH TEQ (a)	0.1 (b)	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND
cPAH TEQ (a) (Using 1/2 RL for ND)	0.1 (b)	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076	NA	0.076	0.076	0.76	0.083	0.071	0.071
PENTACHLOROPHENOL (µg/L)																	
EPA Method SW8041A/SW8270C,D																	
Pentachlorophenol	3	0.25 U	0.25 U	0.25 U	10 U	0.10 U	0.10 U	0.25 U	0.25 U	**1.8**	0.25 U	0.25 U	0.25 U	NA	**0.41**	**0.91**	0.25 U
PETROLEUM HYDROCARBONS																	
Method NWTPH-G (µg/L)																	
Gasoline	1,000	**344**	100 U	**443**	50 U	50 U	50 U	250 U	250 U	250 U	NA	250 U	250 U	NA	250 U	250 U	250 U
Method NWTPH-Dx (µg/L)																	
Diesel	500	100 U	100 U	**182**	100 UJ	100 U	100 U	250 U	250 U	250 U	NA	250 U	250 U	NA	250 U	100 U	110 U
Motor Oil	500	200 U	200 U	200 U	500 UJ	500 U	500 U	500 U	500 U	500 U	NA	500 U	500 U	NA	500 U	200 U	220 U
Creosote Oil	500	200 U	**374**	**1,210**	NA	**140**	NA	NA	250 U	500 U	NA	250 U	250 U	NA	250 U	100 U	220 U
BTEX (µg/L)																	
Method SW8021B/SW021B MOD																	
Benzene	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
m, p-Xylene	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table A-1
Historical Analyltical Results
Groundwater Compliance Monitoring
Cascade Pole Site
Port of Olympia, Washington

	Cleanup Screening Levels for Groundwater	PZ-18 TH68F 8/8/2011	PZ-18 UL19E 3/7/2012	PZ-18 UO79A 3/30/2012	PZ-18 VP10B 10/24/2012	PZ-18 WF72G 2/28/2013	PZ-18 XC81I 8/28/2013	PZ-18 YA02F 2/18/2014	PZ-18 ZB62G 9/23/2014	PZ-18 ZZ61G 3/9/2015	PZ-18 ANH7A 9/24/2015	PZ-18 AWD0I 2/16/2016	PZ-18 16I0325-14 9/20/2016	PZ-18 17C0014-08 2/28/2017	PZ-18 17J0190-08 10/11/2017	PZ-18 18C0203-04 3/8/2018	PZ-18 18I0183-04 9/12/2018	PZ-18 19C0223-04 3/11/2019
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs) (µg/L)																		
EPA Method SW8270D / SW8270D-SIM																		
Naphthalene	4900	1.0 U	3.0 U	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Methylnaphthalene		1.0 U	3.0 U	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Acenaphthylene		1.0 U	3.0 U	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Acenaphthene		1.0 U	3.0 U	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dibenzofuran		1.0 U	3.0 U	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Fluorene		1.0 U	3.0 U	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Pentachlorophenol	3	5.0 U	15 U	NA	10 U	10 U	10 U	10 U	10 UJ	10 UJ	10 UJ	10 U	10 U	10 U	10.0 U	10.0 U	10.0 U	10.0 U
Phenanthrene		1.0 U	3.0 U	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbazole		1.0 U	3.0 U	NA	1.0 U	NA	NA	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ
Anthracene		1.0 U	3.0 U	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Fluoranthene		1.0 U	3.0 U	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Pyrene	2600	1.0 U	3.0 U	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ
Benzo(a)Anthracene		0.10 U	0.10 U	NA	0.10 U	0.10 U	0.10 U	0.10 U	0.11 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Chrysene		0.10 U	0.10 U	NA	0.10 U	0.10 U	0.10 U	0.10 U	0.11 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Benzo(b)Fluoranthene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)Fluoranthene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)Pyrene		0.10 U	0.10 U	NA	0.10 U	0.10 U	0.10 U	0.10 U	0.11 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Indeno(1,2,3-cd)Pyrene		0.10 U	0.10 U	NA	0.10 U	0.10 U	0.10 U	0.10 U	0.11 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Dibenz(a,h)Anthracene		0.10 U	0.10 U	NA	0.10 U	0.10 U	0.10 U	0.10 U	0.11 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Benzo(g,h,i)Perylene		1.0 U	3.0 U	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1-Methylnaphthalene		1.0 U	3.0 U	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Total Benzofluoranthenes		0.10 U	0.10 U	NA	0.20 U	0.20 U	0.20 U	0.10 U	0.11 U	0.20 U	0.10 U	0.10 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
cPAH TEQ (a)	0.1 (b)	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cPAH TEQ (a) (Using 1/2 RL for ND)	0.1 (b)	0.071	0.071	NA	0.076	0.076	0.076	0.071	0.078	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076
PENTACHLOROPHENOL (µg/L)																		
EPA Method SW8041A/SW8270C,D																		
Pentachlorophenol	3	0.31 U	0.25 U	NA	0.25 U	**0.48**	0.26 U	0.25 U	0.25 U	0.25 U	0.25 U	0.26 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
PETROLEUM HYDROCARBONS																		
Method NWTPH-G (µg/L)																		
Gasoline	1,000	250 U	**270**	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U
Method NWTPH-Dx (µg/L)																		
Diesel	500	120 U	**130**	100 U	100 U	100 U	110 U	100 U	100 U	110 U	100 U	100 U	100 UJ	100 U	100 U	100 U	100 U	100 U
Motor Oil	500	240 U	200 U	200 U	200 U	200 U	210 U	200 U	200 U	220 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U
Creosote Oil	500	240 U	**470**	200 U	100 U	**140**	110 U	100 U	100 U	110 U	100 U	100 U	100 U	100 U	200 U	200 U	200 U	200 U
BTEX (µg/L)																		
Method SW8021B/SW021B MOD																		
Benzene	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
m, p-Xylene	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table A-1
Historical Analyltical Results
Groundwater Compliance Monitoring
Cascade Pole Site
Port of Olympia, Washington

	Cleanup Screening Levels for Groundwater	PZ-19 2005060439-03 6/29/2005	PZ-19 2006030294-04 3/22/2006	PZ-19 2006110239-04 11/14/2006	PZ-19 LS21E 10/2/2007	PZ-19 MO26B 3/20/208	PZ-19 NH70E 7/28/208	PZ-19 NM64B 8/28/208	PZ-19 OH25C 1/9/2009	PZ-19 PK28E 8/11/2009	PZ-19 QG15C 1/18/2010	PZ-19 RS33H 10/19/2010	PZ-19 SO90H 3/25/2011	PZ-19 TI17B 8/9/2011	PZ-19 UL56G 3/8/2012	PZ-19 VP10C 10/24/2012	PZ-19 WF72C 2/28/2013	PZ-19 XC81E 8/28/2013
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs) (µg/L)																		
EPA Method SW8270D / SW8270D-SIM																		
Naphthalene	4900	**0.13**	NA	0.10 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**2.8**	1.0 U	**3.8**	1.0 U
2-Methylnaphthalene		NA	NA	NA	1.0 U	1.0 U	1.0 U	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Acenaphthylene		0.10 U	NA	0.10 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Acenaphthene		0.10 U	NA	0.10 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dibenzofuran		NA	NA	NA	1.0 U	1.0 U	1.0 U	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Fluorene		0.10 U	NA	0.10 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Pentachlorophenol	3	NA	NA	NA	5.0 U	5.0 U	5.0 U	NA	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	10 U	10 U	10 U
Phenanthrene		0.10 U	NA	0.10 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbazole		NA	NA	NA	1.0 U	1.0 U	1.0 U	NA	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	NA	NA
Anthracene		0.10 U	NA	0.10 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Fluoranthene		0.10 U	NA	0.10 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Pyrene	2600	0.10 U	NA	0.10 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Benzo(a)Anthracene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	NA	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.11 U	0.10 U	0.10 U	0.10 U	0.10 U
Chrysene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	NA	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.11 U	0.10 U	0.10 U	0.10 U	0.10 U
Benzo(b)Fluoranthene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	NA	0.10 U	0.10 U	0.10 U	NA	NA	NA	NA	NA	NA	NA
Benzo(k)Fluoranthene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	NA	0.10 U	0.10 UJ	0.10 U	NA	NA	NA	NA	NA	NA	NA
Benzo(a)Pyrene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	NA	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.11 U	0.10 U	0.10 U	0.10 U	0.10 U
Indeno(1,2,3-cd)Pyrene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	NA	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.11 U	0.10 U	0.10 U	0.10 U	0.10 U
Dibenz(a,h)Anthracene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	NA	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.11 U	0.10 U	0.10 U	0.10 U	0.10 U
Benzo(g,h,i)Perylene		0.10 U	NA	0.10 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1-Methylnaphthalene		NA	NA	NA	1.0 U	1.0 U	1.0 U	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Total Benzofluoranthenes		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.10 U	0.10 U	0.11 U	0.10 U	0.20 U	0.20 U	0.20 U
cPAH TEQ (a)	0.1 (b)	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cPAH TEQ (a) (Using 1/2 RL for ND)	0.1 (b)	0.076	0.076	0.076	0.076	0.076	0.076	NA	0.076	0.076	0.076	0.071	0.071	0.078	0.071	0.076	0.076	0.076
PENTACHLOROPHENOL (µg/L)																		
EPA Method SW8041A/SW8270C,D																		
Pentachlorophenol	3	10 U	0.10 U	0.10 U	0.21 U	0.25 U	**0.70** J	0.25 U	0.25 U	0.26 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
PETROLEUM HYDROCARBONS																		
Method NWTPH-G (µg/L)																		
Gasoline	1,000	50 U	50 U	50 U	250 U	250 U	250 U	NA	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U
Method NWTPH-Dx (µg/L)																		
Diesel	500	**106**	100 U	100 U	250 U	250 U	250 U	NA	250 U	250 U	250 U	100 U	110 U	100 U	100 U	100 U	100 U	100 U
Motor Oil	500	500 U	500 U	500 U	500 U	500 U	500 U	NA	500 U	250 U	500 U	200 U	230 U	200 U	200 U	100 U	200 U	200 U
Creosote Oil	500	NA	NA	NA	NA	250 U	500 U	NA	250 U	500 U	250 U	100 U	230 U	200 U	200 U	200 U	**140**	100 U
BTEX (µg/L)																		
Method SW8021B/SW021B MOD																		
Benzene	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
m, p-Xylene	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table A-1
Historical Analyltical Results
Groundwater Compliance Monitoring
Cascade Pole Site
Port of Olympia, Washington

	Cleanup Screening Levels for Groundwater	PZ-19 YA02E 2/18/2014	PZ-19 ZB62O 9/24/2014	PZ-19 ZZ61L 3/10/2015	PZ-19 ANH7C 9/24/2015	PZ-19 AWD0G 2/16/2016	PZ-19 16I0325-15 9/21/2016	PZ-19 17C0014-09 3/1/2017	PZ-19 17J0190-09 10/12/2017	PZ-19 18C0203-12 3/9/2018	PZ-19 18I0183-12 9/13/2018	PZ-19 19C0223-12 3/12/2019	LW-3 2005060439-05 6/28/2005	LW-3 2006030316-02 3/23/2006	LW-3 2006110200-02 11/13/2006	Dup of LW-3 PZ30 2006110200-04 11/13/2006
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs) (µg/L)																
EPA Method SW8270D / SW8270D-SIM																
Naphthalene	4900	1.0 U	**3.8**	**3.3**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**0.21**	NA	**0.12**	**0.13**
2-Methylnaphthalene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	NA	NA	NA
Acenaphthylene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.10 U	NA	0.10 U	0.10 U
Acenaphthene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.10 U	NA	0.10 U	0.10 U
Dibenzofuran		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	NA	NA	NA
Fluorene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.10 U	NA	0.10 U	0.10 U
Pentachlorophenol	3	10 U	10 UJ	10 UJ	10 UJ	10 U	10 U	10 U	10.0 U	10.0 U	10.0 U	10.0 U	NA	NA	NA	NA
Phenanthrene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.10 U	NA	0.10 U	0.10 U
Carbazole		NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	NA	NA	NA	NA
Anthracene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.10 U	NA	0.10 U	0.10 U
Fluoranthene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.10 U	NA	0.10 U	0.10 U
Pyrene	2600	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	0.10 U	NA	0.10 U	0.10 U
Benzo(a)Anthracene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 UJ	0.10 U	0.10 U
Chrysene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 UJ	0.10 U	0.10 U
Benzo(b)Fluoranthene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.10 U	0.10 UJ	0.10 U	0.10 U
Benzo(k)Fluoranthene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.10 U	0.10 UJ	0.10 U	0.10 U
Benzo(a)Pyrene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 UJ	0.10 U	0.10 U
Indeno(1,2,3-cd)Pyrene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 UJ	0.10 U	0.10 U
Dibenz(a,h)Anthracene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 UJ	0.10 U	0.10 U
Benzo(g,h,i)Perylene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.10 U	NA	0.10 U	0.10 U
1-Methylnaphthalene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	NA	NA	NA
Total Benzofluoranthenes		0.10 U	0.10 U	0.20 U	0.10 U	0.10 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	NA	NA	NA	NA
cPAH TEQ (a)	0.1 (b)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cPAH TEQ (a) (Using 1/2 RL for ND)	0.1 (b)	0.071	0.071	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076
PENTACHLOROPHENOL (µg/L)																
EPA Method SW8041A/SW8270C,D																
Pentachlorophenol	3	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	10 U	0.10 U	0.10 U	0.10 U
PETROLEUM HYDROCARBONS																
Method NWTPH-G (µg/L)																
Gasoline	1,000	250 U	250 U	250 U	250 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	**1,750** (c) T	**53**	50 U	50 U
Method NWTPH-Dx (µg/L)																
Diesel	500	100 U	100 U	100 U	100 U	100 U	100 UJ	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U
Motor Oil	500	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U	500 U	500 U	500 U	500 U
Creosote Oil	500	100 U	100 U	100 U	100 U	100 U	100 U	100 U	200 U	200 U	200 U	200 U	NA	NA	NA	NA
BTEX (µg/L)																
Method SW8021B/SW021B MOD																
Benzene	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
m, p-Xylene	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table A-1
Historical Analyltical Results
Groundwater Compliance Monitoring
Cascade Pole Site
Port of Olympia, Washington

	Cleanup Screening Levels for Groundwater	LW-3 LS10G 10/1/2007	LW-3 MO07A 3/19/208	LW-3 NH70A 7/28/208	LW-3 OH11D 1/8/2009	LW-3 PJ99A 8/10/2009	LW-3 QF84E 1/14/2010	LW-3 RS33C 10/18/2010	LW-3 SO90M 3/24/2011	LW-3 TH68D 8/8/2011	LW-3 UL19D 3/7/2012	LW-3 VP53H 10/26/2012	LW-3 WF57H 2/27/2013	LW-3 XC81J 8/28/2013	LW-3 YA02N 2/19/2014	LW-3 2014060297 6/11/2014	LW-3 ZB62D 9/23/2014	LW-3 ZZ61J 3/9/2015
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs) (µg/L)																		
EPA Method SW8270D / SW8270D-SIM																		
Naphthalene	4900	1.0 U	1.0 U	1.0 U	1.0 U	2.0 UJ	1.0 U	3.0 U	**7.9**	1.0 U	3.0 U	1.0 U	1.0 U	1.0 U	**2.0**	**0.539**	1.0 U	1.0 U
2-Methylnaphthalene		1.0 U	1.0 U	1.0 U	1.0 U	2.0 UJ	1.0 U	3.0 U	1.0 U	1.0 U	3.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.100 U	1.0 U	1.0 U
Acenaphthylene		1.0 U	1.0 U	1.0 U	1.0 U	2.0 UJ	1.0 U	3.0 U	1.0 U	1.0 U	3.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.100 U	1.0 U	1.0 U
Acenaphthene		1.0 U	1.0 U	1.0 U	1.0 U	2.0 UJ	1.0 U	3.0 U	1.0 U	1.0 U	3.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.100 U	1.0 U	1.0 U
Dibenzofuran		1.0 U	1.0 U	1.0 U	1.0 U	2.0 UJ	1.0 U	3.0 U	1.0 U	1.0 U	3.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	1.0 U
Fluorene		1.0 U	1.0 U	1.0 U	1.0 U	2.0 UJ	1.0 U	3.0 U	1.0 U	1.0 U	3.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.100 U	1.0 U	1.0 U
Pentachlorophenol	3	5.0 U	5.0 U	5.0 U	5.0 U	10 UJ	5.0 U	15 U	5.0 U	5.0 U	15 U	10 U	10 U	10 U	10 U	0.100 U	10 UJ	10 UJ
Phenanthrene		1.0 U	1.0 U	1.0 U	1.0 U	2.0 UJ	1.0 U	3.0 U	1.0 U	1.0 U	3.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.100 U	1.0 U	1.0 U
Carbazole		1.0 U	1.0 U	1.0 U	1.0 U	2.0 UJ	1.0 U	3.0 UJ	1.0 U	1.0 U	3.0 U	1.0 U	NA	NA	NA	NA	1.0 U	1.0 U
Anthracene		1.0 U	1.0 U	1.0 U	1.0 U	2.0 UJ	1.0 U	3.0 U	1.0 U	1.0 U	3.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.100 U	1.0 U	1.0 U
Fluoranthene		1.0 U	1.0 U	1.0 U	1.0 U	2.0 UJ	1.0 U	3.0 U	1.0 U	1.0 U	3.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.100 U	1.0 U	1.0 U
Pyrene	2600	1.0 U	1.0 U	1.0 U	1.0 U	2.0 UJ	1.0 U	3.0 U	1.0 U	1.0 U	3.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.100 U	1.0 U	1.0 U
Benzo(a)Anthracene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	1.0 U	0.10 U	0.10 U	0.10 U	0.10 U	0.11 U	0.10 U	0.100 U	0.12 U	0.10 U
Chrysene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	1.0 U	0.10 U	0.10 U	0.10 U	0.10 U	0.11 U	0.10 U	0.100 U	0.12 U	0.10 U
Benzo(b)Fluoranthene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	NA	NA	NA	NA	NA	NA	NA	NA	0.100 U	NA	NA
Benzo(k)Fluoranthene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	NA	NA	NA	NA	NA	NA	NA	NA	0.100 U	NA	NA
Benzo(a)Pyrene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	1.0 U	0.10 U	0.10 U	0.10 U	0.10 U	0.11 U	0.10 U	0.100 U	0.12 U	0.10 U
Indeno(1,2,3-cd)Pyrene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	1.0 U	0.10 U	0.10 U	0.10 U	0.10 U	0.11 U	0.10 U	0.100 U	0.12 U	0.10 U
Dibenz(a,h)Anthracene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	1.0 U	0.10 U	0.10 U	0.10 U	0.10 U	0.11 U	0.10 U	0.100 U	0.12 U	0.10 U
Benzo(g,h,i)Perylene		1.0 U	1.0 U	1.0 U	1.0 U	2.0 UJ	1.0 U	3.0 U	1.0 U	1.0 U	3.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.100 U	1.0 U	1.0 U
1-Methylnaphthalene		1.0 U	1.0 U	1.0 U	1.0 U	2.0 UJ	1.0 U	3.0 U	1.0 U	1.0 U	3.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**0.168**	1.0 U	1.0 U
Total Benzofluoranthenes		NA	NA	NA	NA	NA	NA	0.10 U	1.0 U	0.10 U	0.10 U	0.20 U	0.20 U	0.22 U	0.10 U	NA	0.12 U	0.20 U
cPAH TEQ (a)	0.1 (b)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cPAH TEQ (a) (Using 1/2 RL for ND)	0.1 (b)	0.076	0.076	0.076	0.076	0.076	0.076	0.071	0.71 U	0.071	0.071	0.076	0.076	0.083	0.071	0.071	0.085	0.076
PENTACHLOROPHENOL (µg/L)																		
EPA Method SW8041A/SW8270C,D																		
Pentachlorophenol	3	**3.6** J	0.25 U	**0.57**	0.25 U	0.28 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.31 U	3.7 U	NA	0.25 U	0.25 U
PETROLEUM HYDROCARBONS																		
Method NWTPH-G (µg/L)																		
Gasoline	1,000	250 U	250 U	250 U	250 U	**20,000**	**1,800**	250 U	250 U	**1,400**	**1,300**	**4,100**	**270**	250 U	250 U	**189**	250 U	250 U
Method NWTPH-Dx (µg/L)																		
Diesel	500	250 U	250 U	250 U	250 U	**770**	**1,200**	100 U	120 U	**170**	**620**	**410**	**1,600**	**150**	**2,100**	**247**	100 U	120 U
Motor Oil	500	500 U	500 U	500 U	500 U	**1,300**	**1,200**	200 U	250 U	220 U	**1,200**	**310**	**860**	230 U	**1,200**	500 U	200 U	230 U
Creosote Oil	500	NA	250 U	500 U	250 U	**2,000**	**4,400**	**170**	250 U	**390**	**2,100**	**2,800**	**12,000**	**580**	**9,200**	NA	**270**	120 U
BTEX (µg/L)																		
Method SW8021B/SW021B MOD																		
Benzene	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
m, p-Xylene	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table A-1
Historical Analyltical Results
Groundwater Compliance Monitoring
Cascade Pole Site
Port of Olympia, Washington

	Cleanup Screening Levels for Groundwater	LW-3 ANH7J 9/24/2015	LW-3 AWD0N 2/16/2016	LW-3 16I0325-03 9/20/2016	LW-3 17C0014-10 2/28/2017	LW-3 17J0190-10 10/11/2017	LW-3 18C0203-08 3/8/2018	LW-3 18I0183-08 9/12/2018	LW-3 19C0223-08 3/11/2019	LW-4R 2005060439-02 6/29/2005	LW-4R 2006030316-01 3/23/2006	LW-4R 2006110239-02 11/14/2006	LW-4R LS10D 10/1/2007	LW-4R MO07D 3/19/208	LW-4R NH70D 7/28/208	LW-4R OH11F 1/8/2009	LW-4R PJ99D 8/10/2009
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs) (µg/L)																	
EPA Method SW8270D / SW8270D-SIM																	
Naphthalene	4900	1.0 U	1.0 U	**1.1**	1.0 U	**2.1**	1.0 U	1.0 U	1.0 UJ	0.10 U	NA	0.10 U	1.0 U	1.0 U	1.0 U	1.0 U	**1.9**
2-Methylnaphthalene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	NA	NA	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Acenaphthylene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	0.10 U	NA	0.10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Acenaphthene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	0.10 U	NA	0.10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dibenzofuran		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	NA	NA	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Fluorene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	0.10 U	NA	0.10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Pentachlorophenol	3	10 UJ	10 U	10 U	10 U	10.0 U	10.0 U	10.0 U	10.0 U	NA	NA	NA	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Phenanthrene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	0.10 U	NA	0.10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbazole		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	NA	NA	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Anthracene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	0.10 U	NA	0.10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Fluoranthene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	0.10 U	NA	0.10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Pyrene	2600	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	0.10 U	NA	0.10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Benzo(a)Anthracene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Chrysene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Benzo(b)Fluoranthene		NA	NA	NA	NA	NA	NA	NA	NA	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Benzo(k)Fluoranthene		NA	NA	NA	NA	NA	NA	NA	NA	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Benzo(a)Pyrene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Indeno(1,2,3-cd)Pyrene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Dibenz(a,h)Anthracene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Benzo(g,h,i)Perylene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	0.10 U	NA	0.10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1-Methylnaphthalene		1.0 U	1.0 U	1.0 U	**1.0**	**1.2**	1.0 U	1.0 U	1.0 UJ	NA	NA	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Total Benzofluoranthenes		0.10 U	0.10 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	NA	NA	NA	NA	NA	NA	NA	NA
cPAH TEQ (a)	0.1 (b)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cPAH TEQ (a) (Using 1/2 RL for ND)	0.1 (b)	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076
PENTACHLOROPHENOL (µg/L)																	
EPA Method SW8041A/SW8270C,D																	
Pentachlorophenol	3	0.25 U	0.25 U	**0.57**	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	10 U	0.10 U	0.10 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
PETROLEUM HYDROCARBONS																	
Method NWTPH-G (µg/L)																	
Gasoline	1,000	250 U	**140**	**150**	**396**	**165**	**248**	**230**	**207**	50 U	50 U	50 U	250 U	250 U	250 U	250 U	250 U
Method NWTPH-Dx (µg/L)																	
Diesel	500	**510**	100 U	**143** J	**216**	**209**	100 U	**200**	**133**	100 U	100 U	100 U	250 U	250 U	250 U	250 U	250 U
Motor Oil	500	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U	500 U	500 U	500 U	500 U	500 U	500 U	500 U	500 U
Creosote Oil	500	**1700**	**150**	**501**	**1,010**	**654**	200 U	**1,080**	**763**	NA	NA	NA	NA	250 U	500 U	250 U	250 U
BTEX (µg/L)																	
Method SW8021B/SW021B MOD																	
Benzene	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
m, p-Xylene	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table A-1
Historical Analyltical Results
Groundwater Compliance Monitoring
Cascade Pole Site
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	Cleanup Screening Levels for Groundwater	LW-4R QF84L 1/15/2010	LW-4R RS33N 10/19/2010	LW-4R SO90A 3/24/2011	LW-4R TH68E 8/8/2011	LW-4R UL19A 3/7/2012	LW-4R VP10F 10/24/2012	LW-4R WF72F 2/28/2013	LW-4R XC81K 8/28/2013	LW-4R YA02L 2/19/2014	LW-4R ZB62E 9/23/2014	LW-4R ZZ61K 3/9/2015	LW-4R ANH7I 9/24/2015	LW-4R AWD0O 2/16/2016	LW-4R 16I0325-04 9/20/2016	LW-4R 17C0014-11 2/28/2017	LW-4R 17J0190-11 10/11/2017	LW-4R 18C0203-09 3/8/2018
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs) (µg/L)																		
EPA Method SW8270D / SW8270D-SIM																		
Naphthalene	4900	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**2.1**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**4.2**	1.0 U
2-Methylnaphthalene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Acenaphthylene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Acenaphthene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dibenzofuran		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Fluorene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Pentachlorophenol	3	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	10 U	10 U	10 U	10 U	10 UJ	10 UJ	10 UJ	10 U	10 U	10 U	10.0 U	10.0 U
Phenanthrene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbazole		1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	NA	NA	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Anthracene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Fluoranthene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Pyrene	2600	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Benzo(a)Anthracene		0.11 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.11 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Chrysene		0.11 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.11 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Benzo(b)Fluoranthene		0.11 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)Fluoranthene		0.11 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)Pyrene		0.11 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.11 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Indeno(1,2,3-cd)Pyrene		0.11 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.11 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Dibenz(a,h)Anthracene		0.11 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.11 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Benzo(g,h,i)Perylene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1-Methylnaphthalene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Total Benzofluoranthenes		NA	0.10 U	0.10 U	0.10 U	0.10 U	0.20 U	0.20 U	0.20 U	0.10 U	0.11 U	0.20 U	0.10 U	0.10 U	0.20 U	0.20 U	0.20 U	0.20 U
cPAH TEQ (a)	0.1 (b)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cPAH TEQ (a) (Using 1/2 RL for ND)	0.1 (b)	0.083	0.071	0.071	0.071	0.071	0.076	0.076	0.076	0.071	0.078	0.076	0.076	0.076	0.076	0.076	0.076	0.076
PENTACHLOROPHENOL (µg/L)																		
EPA Method SW8041A/SW8270C,D																		
Pentachlorophenol	3	0.25 U	**0.42**	0.25 U	0.25 U	0.25 U	0.25 U	**0.85**	0.28 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
PETROLEUM HYDROCARBONS																		
Method NWTPH-G (µg/L)																		
Gasoline	1,000	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	100 U	100 U	100 U	100 U	100 U
Method NWTPH-Dx (µg/L)																		
Diesel	500	250 U	100 U	130 U	110 U	100 U	100 U	100 U	100 U	100 U	100 U	120 U	100 U	100 U	100 UJ	100 U	100 U	100 U
Motor Oil	500	500 U	200 U	260 U	220 U	200 U	100 U	**400**	200 U	200 U	200 U	240 U	200 U	210 U	200 U	200 U	200 U	200 U
Creosote Oil	500	250 U	100 U	260 U	220 U	200 U	200 U	**200**	100 U	100 U	100 U	120 U	100 U	110 U	100 U	100 U	200 U	200 U
BTEX (µg/L)																		
Method SW8021B/SW021B MOD																		
Benzene	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
m, p-Xylene	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table A-1
Historical Analyltical Results
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	Cleanup Screening Levels for Groundwater	LW-4R 18I0183-09 9/12/2018	LW-4R 19C0223-09 3/11/2019	MW-01S 2005070010-01 6/30/2005	MW-01S 2006030261-04 3/21/2006	Dup of MW-01S PZ30 2006030261-05 3/21/2006	MW-01S 2006110251-01 11/15/2006	MW-01S LS10F 10/1/2007	MW-01S MO07F 3/19/208	MW-01S NH92C 7/29/208	MW-01S OH25E 1/9/2009	MW-01S PJ99F 8/10/2009	MW-01S QF84H 1/15/2010	MW-01S RS33M 10/19/2010	MW-01S SO90N 3/25/2011	MW-01S TI17G 8/9/2011	MW-01S UL56H 3/8/2012	MW-01S VP53D 10/25/2012
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs) (µg/L)																		
EPA Method SW8270D / SW8270D-SIM																		
Naphthalene	4900	1.0 U	1.0 U	**5,130**	NA	NA	**3,120**	**11,000**	**7,100**	**11,000**	**9,000**	**9,100**	**5,000**	**9,100**	**5,400**	**6,900**	**5,000**	**4600**
2-Methylnaphthalene		1.0 U	1.0 U	NA	NA	NA	NA	**920**	**1,000**	**810**	**1,000**	**890**	**900**	**750**	**740**	**680**	**1100**	**710**
Acenaphthylene		1.0 U	1.0 U	**860**	NA	NA	**33**	**8.9**	**10**	**6.6**	**9.7** J	2.0 U	100 U	100 U	1.0 U	1.0 U	**6.8**	**10**
Acenaphthene		1.0 U	1.0 U	10 U	NA	NA	**398**	**210**	**290**	**200**	**290**	**250**	**270**	**190**	**200**	**190**	**340**	**220**
Dibenzofuran		1.0 U	1.0 U	NA	NA	NA	NA	**73**	**130**	**98**	**110**	**99**	**120**	100 U	**64**	**79**	**79**	**110**
Fluorene		1.0 U	1.0 U	**380**	NA	NA	**112**	**59**	**100**	**63**	**86**	**72**	100 U	100 U	**47**	**47**	**69**	**90**
Pentachlorophenol	3	10.0 U	10.0 U	NA	NA	NA	NA	**8,300**	**4,100**	**2,000**	**1,600**	**3,900**	**4,400**	**3,500**	**4,200**	**4,200**	**3,200**	**4,300**
Phenanthrene		1.0 U	1.0 U	**23**	NA	NA	**132**	**46**	**98**	**53**	**76**	**44**	100 U	100 U	**44**	**34**	**65**	**82**
Carbazole		1.0 U	1.0 UJ	NA	NA	NA	NA	**120**	**120**	**69**	**80**	**86**	100 U	100 UJ	**57**	**24**	**53**	**52**
Anthracene		1.0 U	1.0 U	**17**	NA	NA	**96**	**14**	**26**	**14**	**17**	**40**	100 U	100 U	**12**	**10**	**18**	**21**
Fluoranthene		1.0 U	1.0 U	10 U	NA	NA	**172**	**6.3**	**30**	**11**	**13**	**14**	100 U	100 U	**7.8**	**2.0**	**19**	**18**
Pyrene	2600	1.0 U	1.0 UJ	**12**	NA	NA	**24**	**7.8**	**15**	**5.2**	**11**	**7.4**	100 U	100 U	**3.9**	**1.7**	**14**	**8.9**
Benzo(a)Anthracene		0.10 U	0.10 U	10 U	**0.84**	**0.86**	10 U	**1.6**	**2.1**	5.0 U	**1.5** J	**3.6** J	**4.2**	**0.58**	1.0 U	**1.0**	**1.8**	**2.5**
Chrysene		0.10 U	0.10 U	10 U	**0.55**	**0.57**	10 U	**1.7**	**2.2**	5.0 U	**1.6** J	**3.8** J	**4.4**	**0.51**	1.0 U	**1.1**	**1.8**	**2.4**
Benzo(b)Fluoranthene		NA	NA	10 U	**0.98**	**1.05**	10 U	**0.88**	**1.1**	5.0 U	1.0 U	**1.0**	**1.3**	NA	NA	NA	NA	NA
Benzo(k)Fluoranthene		NA	NA	10 U	**0.55**	**0.59**	10 U	**0.32**	1.0 U	5.0 U	1.0 U	**1.0**	**1.3**	NA	NA	NA	NA	NA
Benzo(a)Pyrene		0.10 U	0.10 U	10 U	**0.74**	**0.80**	10 U	**0.53**	1.0 U	5.0 U	1.0 U	**1.3**	**1.6**	**0.18**	1.0 U	**0.33**	**0.65**	**0.76**
Indeno(1,2,3-cd)Pyrene		0.10 U	0.10 U	10 U	**0.22**	**0.24**	10 U	**0.12**	1.0 U	5.0 U	1.0 U	**0.34**	**0.35**	0.10 U	1.0 U	0.12 U	**0.14**	**0.11**
Dibenz(a,h)Anthracene		0.10 U	0.10 U	10 U	0.10 U	0.10 U	10 U	0.10 U	1.0 U	5.0 U	1.0 U	**0.20**	**0.17**	0.10 U	1.0 U	0.12 U	0.10 U	0.10 U
Benzo(g,h,i)Perylene		1.0 U	1.0 U	10 U	NA	NA	10 U	1.0 U	10 U	5.0 U	10 U	2.0 U	100 U	100 U	1.0 U	1.0 U	1.0 U	3.0 U
1-Methylnaphthalene		1.0 U	1.0 U	NA	NA	NA	NA	**470**	**640**	**570**	**610**	**520**	**520**	**400**	**380**	**390**	**770**	**560**
Total Benzofluoranthenes		0.20 U	0.20 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.35**	1.0 U	**0.76**	**1.4**	**1.5**
cPAH TEQ (a)	0.1 (b)	ND	ND	ND	**1.00**	**1.08**	ND	**0.839**	**0.342**	ND	**0.166**	**1.95**	**2.38**	**0.278**	ND	**0.517**	**1.0**	**1.2**
cPAH TEQ (a) (Using 1/2 RL for ND)	0.1 (b)	0.076	0.076	0.076	**1.01**	**1.08**	0.076	**0.84**	**0.992**	**3.78**	**0.866**	**1.95**	**2.38**	**0.288**	0.71 U	**0.529**	**1.0**	**1.2**
PENTACHLOROPHENOL (µg/L)																		
EPA Method SW8041A/SW8270C,D																		
Pentachlorophenol	3	0.25 U	0.25 U	**7,470**	**3,440**	**3,330**	**9,120**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PETROLEUM HYDROCARBONS																		
Method NWTPH-G (µg/L)																		
Gasoline	1,000	100 U	100 U	**5,830** (d)	**9,620**	**9,580**	**28,000**	**52,000**	**16,000**	**40,000**	**41,000**	**14,000**	**23,000**	**36,000**	**57,000**	**55,000**	**26,000**	**34,000**
Method NWTPH-Dx (µg/L)																		
Diesel	500	100 U	100 U	100 U	100 U	100 U	100 U	**9,100**	**9,300**	**7,800**	**5,600**	**7,600**	**6,000**	**4,800**	**5,100**	**9,800**	**4,400**	**6,200**
Motor Oil	500	200 U	200 U	500 U	500 U	500 U	500 U	2500 U	5000 U	5,000 U	5,000 U	2500 U	5000 U	2000 U	**500**	1000 U	200 U	5000 U
Creosote Oil	500	200 U	200 U	**13,000**	**6530** J	**5,090** J	**8,370**	NA	**48,000**	**46,000**	**48,000**	**22,000**	**24,000**	**35,000**	**24,000**	**31,000**	**18,000**	**44,000**
BTEX (µg/L)																		
Method SW8021B/SW021B MOD																		
Benzene	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
m, p-Xylene	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table A-1
Historical Analyltical Results
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	Cleanup Screening Levels for Groundwater	MW-01S WF72D 2/28/2013	MW-01S XC89C 8/29/2013	MW-01S YA02M 2/19/2014	MW-01S ZB62M 9/24/2014	MW-01S ZZ61N 3/10/2015	MW-01S ANH7N 9/25/2015	MW-01S AWD0L 2/17/2016	MW-01S 16I0325-06 9/21/2016	MW-01S 17C0014-12 3/1/2017	MW-01S 17J0190-12 10/12/2017	MW-01S 18C0203-16 3/9/2018	MW-01S 18I0183-16 9/13/2018	MW-01S 19C0223-16 3/12/2019	MW-02S 2005070010-05 7/1/2005	MW-02S 2006030294-01 3/22/2006	MW-02S 2006110251-04 11/15/2006
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs) (µg/L)																	
EPA Method SW8270D / SW8270D-SIM																	
Naphthalene	4900	**7,100**	**6,800**	**6,800**	**10,000**	**8,000**	**17,000**	**5,200**	**6,790**	**4,400**	**5,080**	**3,560**	**4,230**	**1,620**	**0.29**	NA	**44.1**
2-Methylnaphthalene		**1000**	**780**	**1,200**	**550**	**720**	**1100**	**850**	**654**	**587**	**618**	**644**	**555**	**329**	NA	NA	NA
Acenaphthylene		100 U	10 U	10 U	10 U	10 U	1.0 U	1.0 U	30 U	10 U	**7.8**	1.0 U	**7.2**	3.0 U	**0.10**	NA	0.10 U
Acenaphthene		**320**	**270**	**330**	**240**	**280**	**360**	**220**	**221**	**263**	**255**	**334**	**260**	**201**	**0.92**	NA	**0.36**
Dibenzofuran		**140**	**140**	**160**	**71**	**110**	**130**	**110**	**97.6**	**118**	**76.0**	**120**	**98.2**	**79.9**	NA	NA	NA
Fluorene		**110**	**110**	**120**	**66**	**73**	**61**	**74**	**63.5**	**112**	**75.6**	**122**	**92.5**	**74.2**	0.10 U	NA	0.10 U
Pentachlorophenol	3	**4,700**	**4,000**	**6,600**	**4,900** J	**2,900** J	**13,000**	**1,300**	**3,950**	**1,290**	**5,510** J	**1,260**	**6,190** J	**426**	NA	NA	NA
Phenanthrene		**94** J	**130**	**120**	**68**	**69**	**92** J	**69**	**52.6**	**114**	**69.3**	**169**	**89.2**	**93.8**	0.10 U	NA	0.10 U
Carbazole		NA	NA	NA	**100**	**53**	**290**	**68**	**51.1**	**43.5**	**30.3**	**27.2**	**42.5**	**26.3**	NA	NA	NA
Anthracene		100 U	**39**	**27**	**17**	**16**	**27**	**16**	30 U	**27.6**	**14.5**	**31.8**	**15.5**	**20.1**	**1.19** E	NA	**1.65**
Fluoranthene		100 U	**56**	**44**	10 U	10 U	**12**	**20**	30 U	**30.8**	**16.7**	**51.3**	**11.0**	**26.0**	**0.28**	NA	0.10 U
Pyrene	2600	100 U	**34**	**22**	10 U	10 U	**5.3**	**12**	30 U	**20.8**	**7.9**	**43.4**	**8.2**	**17.5**	**0.18**	NA	0.10 U
Benzo(a)Anthracene		**1.7**	**4.1**	**2.1**	**0.83**	**1.5**	1.0 U	**2.3**	2.5 U	**1.54**	**1.33**	**12.2**	**0.61**	**2.52**	0.10 U	0.10 U	0.10 U
Chrysene		**1.6**	**3.4**	**2.2**	**0.82**	**1.6**	1.0 U	**2.3**	2.5 U	**1.42**	**1.26**	**12.0**	**0.65**	**2.84**	0.10 U	0.10 U	0.10 U
Benzo(b)Fluoranthene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.10 U	0.10 U	0.10 U
Benzo(k)Fluoranthene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.10 U	0.10 U	0.10 U
Benzo(a)Pyrene		1.0 U	**1.4**	**0.69**	0.3 U	**0.54**	1.0 U	**0.81**	2.5 U	**0.54**	**0.44**	**4.29**	0.30 U	**0.91**	0.10 U	0.10 U	0.10 U
Indeno(1,2,3-cd)Pyrene		1.0 U	**0.58**	**0.15**	0.3 U	**0.13**	1.0 U	0.30 U	2.5 U	**0.14**	**0.12**	**1.08**	0.30 U	**0.22**	0.10 U	0.10 U	0.10 U
Dibenz(a,h)Anthracene		1.0 U	**0.53**	0.10 U	0.3 U	0.10 U	1.0 U	0.30 U	2.5 U	0.10 U	0.10 U	0.50 U	0.30 U	0.10 U	0.10 U	0.10 U	0.10 U
Benzo(g,h,i)Perylene		100 U	10 U	10 U	10 U	10 U	1.0 U	1.0 U	30 U	10 U	1.0 U	1.0 U	3.0 U	3.0 U	0.10 U	NA	0.10 U
1-Methylnaphthalene		**580**	**580**	**580**	**450**	**420**	**710**	**460**	**373**	**399**	**418**	**449**	**391**	**237**	NA	NA	NA
Total Benzofluoranthenes		2.0 U	**2.7**	**1.4**	**0.55**	**1.1**	1.0 U	**1.6**	5.0 U	**1.1**	**1.03**	**8.89**	0.60 U	**2.00**	NA	NA	NA
cPAH TEQ (a)	0.1 (b)	**0.186**	**2.2**	**1.1**	**0.146**	**0.829**	ND	**1.22**	ND	**0.83**	**0.70**	**6.63**	**0.07**	**1.41**	ND	ND	ND
cPAH TEQ (a) (Using 1/2 RL for ND)	0.1 (b)	**0.886**	**2.2**	**1.1**	**0.326**	**0.834**	0.71 U	**1.25**	1.89	**0.84**	**0.71**	**6.65**	**0.28**	**1.42**	0.076	0.076	0.076
PENTACHLOROPHENOL (µg/L)																	
EPA Method SW8041A/SW8270C,D																	
Pentachlorophenol	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.50 U	0.10 U	**0.63**
PETROLEUM HYDROCARBONS																	
Method NWTPH-G (µg/L)																	
Gasoline	1,000	**38,000**	**48,000**	**47,000**	**52,000**	**44,000**	**41,000**	**28,000**	**37,200**	**24,200**	**33,900**	**25,900**	**27,000**	**16,700**	50 U	50 U	**99**
Method NWTPH-Dx (µg/L)																	
Diesel	500	**5,500**	**9,400**	**7,300**	**11,000**	**3,700**	**10,000**	**6,000**	**6,110** J	**4,790**	**10,300**	**5,610**	**8,670**	**5,150**	100 U	100 U	100 U
Motor Oil	500	**890**	**280**	**390**	**690**	**300**	10000 U	**690**	1000 U	**412**	**774**	**446**	4,000 U	**234**	500 U	500 U	500 U
Creosote Oil	500	**40,000**	**39,000**	**34,000**	**59,000**	**16,000**	**55,000**	**24,000**	**23,700**	**24,900**	**40,300**	**28,600**	**53,000**	**35,000**	NA	NA	NA
BTEX (µg/L)																	
Method SW8021B/SW021B MOD																	
Benzene	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
m, p-Xylene	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table A-1
Historical Analyltical Results
Groundwater Compliance Monitoring
Cascade Pole Site
Port of Olympia, Washington

	Cleanup Screening Levels for Groundwater	MW-02S LS21A 10/2/2007	MW-02S MO26E 3/20/208	MW-02S NH70G 7/28/208	MW-02S OG76B 1/7/2009	Dup of MW-02S MW30 OG76A 1/7/2009	MW-02S PK28C 8/11/2009	MW-02S QG15B 1/18/2010	MW-02S RS33E 10/18/2010	MW-02S SO90I 3/25/2011	MW-02S TI17E 8/9/2011	MW-02S UL56D 3/8/2012	MW-02S VP10H 10/24/2012	MW-02S WF72B 2/28/2013	MW-02S XC81F 8/28/2013	MW-02S YA02J 2/19/2014	MW-02S ZB62A 9/23/2014	MW-02S ZZ61I 3/9/2015
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs) (µg/L)																		
EPA Method SW8270D / SW8270D-SIM																		
Naphthalene	4900	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**1.9**	1.0 U	1.0 U	1.0 U	1.0 U
2-Methylnaphthalene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Acenaphthylene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Acenaphthene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**1.1**	**1.2**	**1.2**	**1.0**	1.0 U
Dibenzofuran		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Fluorene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Pentachlorophenol	3	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	10 U	10 U	10 U	10 U	10 UJ	10 UJ
Phenanthrene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbazole		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	NA	NA	NA	1.0 U	1.0 U
Anthracene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**1.1**	1.0 U	1.0 U	**1.0**	1.0 U	**1.1**	1.0 U	1.0 U
Fluoranthene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Pyrene	2600	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Benzo(a)Anthracene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.12 U	0.10 U	0.10 U	0.10 U	0.10 U	0.11 U	0.10 U	0.11 U	0.10 U
Chrysene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.12 U	0.10 U	0.10 U	0.10 U	0.10 U	0.11 U	0.10 U	0.11 U	0.10 U
Benzo(b)Fluoranthene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)Fluoranthene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 UJ	0.10 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)Pyrene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.12 U	0.10 U	0.10 U	0.10 U	0.10 U	0.11 U	0.10 U	0.11 U	0.10 U
Indeno(1,2,3-cd)Pyrene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.12 U	0.10 U	0.10 U	0.10 U	0.10 U	0.11 U	0.10 U	0.11 U	0.10 U
Dibenz(a,h)Anthracene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.12 U	0.10 U	0.10 U	0.10 U	0.10 U	0.11 U	0.10 U	0.11 U	0.10 U
Benzo(g,h,i)Perylene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1-Methylnaphthalene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Total Benzofluoranthenes		NA	NA	NA	NA	NA	NA	NA	0.10 U	0.12 U	0.10 U	0.10 U	0.20 U	0.20 U	0.22 U	0.10 U	0.11 U	0.20 U
cPAH TEQ (a)	0.1 (b)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cPAH TEQ (a) (Using 1/2 RL for ND)	0.1 (b)	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.071	0.085	0.071	0.071	0.076	0.076	0.083	0.071	0.078	0.076
PENTACHLOROPHENOL (µg/L)																		
EPA Method SW8041A/SW8270C,D																		
Pentachlorophenol	3	0.21 U	0.25 U	**1.0**	0.25 U	0.25 U	0.26 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.28 U	0.25 U	**0.83**	0.25 U
PETROLEUM HYDROCARBONS																		
Method NWTPH-G (µg/L)																		
Gasoline	1,000	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	**480**	250 U	250 U	250 U	250 U	250 U	250 U	250 U
Method NWTPH-Dx (µg/L)																		
Diesel	500	250 U	250 U	250 U	250 U	250 U	250 U	250 U	100 U	120 U	**130**	100 U	100 U	100 U	130 U	100 U	100 U	120 U
Motor Oil	500	500 U	500 U	500 U	500 U	500 U	250 U	500 U	200 U	240 U	**990**	200 U	200 U	210 U	260 U	**240**	200 U	230 U
Creosote Oil	500	NA	250 U	500 U	250 U	250 U	500 U	250 U	100 U	240 U	200 U	200 U	**110**	**210**	130 U	100 U	100 U	120 U
BTEX (µg/L)																		
Method SW8021B/SW021B MOD																		
Benzene	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
m, p-Xylene	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table A-1
Historical Analyltical Results
Groundwater Compliance Monitoring
Cascade Pole Site
Port of Olympia, Washington

	Cleanup Screening Levels for Groundwater	MW-02S ANH7E 9/24/2015	MW-02S AWD0A 2/16/2016	MW-02S 16I0325-08 9/20/2016	MW-02S 17C0014-13 2/28/2017	MW-02S 17J0190-13 10/11/2017	MW-02S 18C0203-10 3/8/2018	MW-02S 18I0183-10 9/13/2018	MW-02S 19C0223-10 3/12/2019	MW-05S 2005070010-03 6/30/2005	Dup of MW-05S PZ30 2005070010-04 6/30/2005	MW-05S 2006030294-07 3/22/2006	MW-05S 2006110275-01 11/16/2006	MW-05S LS21C 10/2/2007	MW-05S MO26C 3/20/208	Dup of MW-05S PZ30 MO26A 3/20/208	MW-05S NH92E 7/29/208
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs) (µg/L)																	
EPA Method SW8270D / SW8270D-SIM																	
Naphthalene	4900	1.0 U	1.0 U	**1.7**	**1.3**	**2.8**	1.0 U	1.0 U	1.0 UJ	**10.8** E	**11.8** E	NA	**29.1**	**92**	**48**	**43**	**46**
2-Methylnaphthalene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	NA	NA	NA	NA	**2.5**	**2.0**	**1.8**	**2.0**
Acenaphthylene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	**0.29**	**0.27**	NA	**0.14**	1.0 U	1.0 U	1.0 U	1.0 U
Acenaphthene		**1.4**	1.0 U	**1.6**	1.0 U	**1.9**	1.0 U	**1.3**	1.0 UJ	**5.25** E	**5.13** E	NA	**5.91**	**9.2**	**8.8**	**7.6**	**8.3**
Dibenzofuran		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	NA	NA	NA	NA	**3.2**	**2.9**	**2.5**	**2.6**
Fluorene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	**2.26** E	**2.26** E	NA	**1.00**	**2.8**	**2.6**	**2.2**	**2.0**
Pentachlorophenol	3	10 UJ	10 U	10 U	10 U	10.0 U	10.0 U	10.0 U	10.0 U	NA	NA	NA	NA	5.0 U	5.0 U	5.0 U	5.0 U
Phenanthrene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	**1.45** E	**1.76** E	NA	**1.18**	**1.9**	**1.8**	**1.6**	1.0 U
Carbazole		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	NA	NA	NA	NA	**1.9**	**1.1**	1.0 U	**1.0**
Anthracene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	**1.23** E	**1.25** E	NA	**1.02**	1.0 U	1.0 U	1.0 U	1.0 U
Fluoranthene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	**1.71** E	**1.75** E	NA	**0.90**	1.0 U	**1.1**	**1.0**	1.0 U
Pyrene	2600	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	**1.64** E	**1.71** E	NA	**0.41**	1.0 U	1.0 U	1.0 U	1.0 U
Benzo(a)Anthracene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	**0.28**	**0.33**	0.10 U	**0.18**	0.10 U	**0.10**	**0.10**	**0.11**
Chrysene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	**0.20**	**0.22**	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Benzo(b)Fluoranthene		NA	NA	NA	NA	NA	NA	NA	NA	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Benzo(k)Fluoranthene		NA	NA	NA	NA	NA	NA	NA	NA	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Benzo(a)Pyrene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Indeno(1,2,3-cd)Pyrene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Dibenz(a,h)Anthracene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Benzo(g,h,i)Perylene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	0.10 U	0.10 U	NA	0.10 U	1.0 U	1.0 U	1.0 U	1.0 U
1-Methylnaphthalene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	NA	NA	NA	NA	**5.2**	**3.9**	**3.4**	**4.0**
Total Benzofluoranthenes		0.10 U	0.10 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	NA	NA	NA	NA	NA	NA	NA	NA
cPAH TEQ (a)	0.1 (b)	ND	ND	ND	ND	ND	ND	ND	ND	**0.030**	**0.035**	ND	**0.018**	ND	0.010	0.010	0.011
cPAH TEQ (a) (Using 1/2 RL for ND)	0.1 (b)	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076	**0.039**	**0.044**	0.076	**0.089**	0.076	0.081	0.081	0.082
PENTACHLOROPHENOL (µg/L)																	
EPA Method SW8041A/SW8270C,D																	
Pentachlorophenol	3	0.25 U	0.43 U	0.25 U	**0.34**	**0.36**	0.25 U	0.25 U	0.25 U	0.10 U	0.50 U	0.10 U	0.10 U	0.25 U	0.25 U	0.25 U	0.25 UJ
PETROLEUM HYDROCARBONS																	
Method NWTPH-G (µg/L)																	
Gasoline	1,000	250 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	50 U	50 U	50 U	50 U	**530**	**320**	250 U	**270**
Method NWTPH-Dx (µg/L)																	
Diesel	500	100 U	100 U	100 UJ	100 U	100 U	100 U	**311**	100 U	100 U	100 U	**430**	100 U	250 U	250 U	250 U	250 U
Motor Oil	500	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U	500 U	500 U	500 U	500 U	500 U	500 U	500 U	500 U
Creosote Oil	500	**190**	100 U	100 U	100 U	200 U	200 U	**1,930**	200 U	NA	NA	NA	NA	NA	**410**	**390**	500 U
BTEX (µg/L)																	
Method SW8021B/SW021B MOD																	
Benzene	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
m, p-Xylene	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table A-1
Historical Analyltical Results
Groundwater Compliance Monitoring
Cascade Pole Site
Port of Olympia, Washington

	Cleanup Screening Levels for Groundwater	Dup of MW-05S PZ30 NH92F 7/29/208	MW-05S OG76C 1/7/2009	MW-05S PK28H 8/11/2009	Dup of MW-05S PZ30 PK28I 8/11/2009	MW-05S QF84B 1/14/2010	Dup of MW-05S PZ30 QF84G 1/14/2010	MW-05S RS33I 10/19/2010	Dup of MW-05S Duplicate RS33J 10/19/2010	MW-05S SO90C 3/25/2011	Dup of MW-05S Duplicate SO90B 3/25/2011	MW-05S TI17C 8/9/2011	Dup of MW-05S Duplicate TI17A 8/9/2011	MW-05S UL56E 3/8/2012	Dup of MW-05S PZ-30 UL56F 3/8/2012	MW-05S VP10E 10/24/2012	Dup of MW-05S PZ-30 VP10D 10/24/2012
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs) (µg/L)																	
EPA Method SW8270D / SW8270D-SIM																	
Naphthalene	4900	**39**	**17**	1.0 U	1.0 U	**5.3**	**5.3**	**1.8** J	**4.8** J	1.0 U	1.0 U	1.0 U	1.0 U	**1.1**	**2.0**	1.0 U	1.0 U
2-Methylnaphthalene		**2.1**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Acenaphthylene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Acenaphthene		**7.3**	**6.6**	**4.3**	**4.4**	**13**	**11**	**9.0**	**8.3**	**6.0**	**6.1**	**7.6**	**8.1**	**7.5**	**8.2**	**8.2**	**10**
Dibenzofuran		**2.3**	**1.6**	1.0 U	1.0 U	**3.1**	**2.2**	**2.0**	**2.0**	1.0 U	1.0 U	1.0 U	**1.0**	1.0 U	1.0 U	1.0 U	1.0 U
Fluorene		**1.7**	1.0 U	1.0 U	1.0 U	**1.0**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Pentachlorophenol	3	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	10 U	10 U	
Phenanthrene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbazole		1.0 U	**1.2**	1.0 U	1.0 U	**1.9**	**1.3**	1.0 UJ	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Anthracene		1.0 U	**1.0**	**1.2**	**1.3**	**1.4**	**1.5**	1.0 U	1.0 U	**1.2**	**1.2**	**1.1**	**1.3**	1.0 U	1.0 U	**1.0**	**1.2**
Fluoranthene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Pyrene	2600	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Benzo(a)Anthracene		0.10 U	**0.13**	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.12 U	0.12 U	0.12 U	0.11 U	0.10 U	0.10 U	0.10 U	0.10 U
Chrysene		0.10 U	**0.13**	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.12 U	0.12 U	0.12 U	0.11 U	0.10 U	0.10 U	0.10 U	0.10 U
Benzo(b)Fluoranthene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)Fluoranthene		0.10 U	0.10 U	0.10 UJ	0.10 UJ	0.10 U	0.10 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)Pyrene		0.10 U	**0.12**	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.12 U	0.12 U	0.12 U	0.11 U	0.10 U	0.10 U	0.10 U	0.10 U
Indeno(1,2,3-cd)Pyrene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.12 U	0.12 U	0.12 U	0.11 U	0.10 U	0.10 U	0.10 U	0.10 U
Dibenz(a,h)Anthracene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.12 U	0.12 U	0.12 U	0.11 U	0.10 U	0.10 U	0.10 U	0.10 U
Benzo(g,h,i)Perylene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1-Methylnaphthalene		**3.6**	**1.7**	1.0 U	1.0 U	**2.6** J	**1.5** J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Total Benzofluoranthenes		NA	NA	NA	NA	NA	NA	0.10 U	0.10 U	0.12 U	0.12 U	0.12 U	0.11 U	0.10 U	0.10 U	0.20 U	0.20 U
cPAH TEQ (a)	0.1 (b)	ND	**0.134**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cPAH TEQ (a) (Using 1/2 RL for ND)	0.1 (b)	0.076	**0.154**	0.076	0.076	0.076	0.076	0.071	0.071	0.085	0.085	0.085	0.078	0.071	0.071	0.076	0.076
PENTACHLOROPHENOL (µg/L)																	
EPA Method SW8041A/SW8270C,D																	
Pentachlorophenol	3	0.25 UJ	0.25 U	0.25 U	0.27 U	0.25 U	0.25 U	0.25 U	0.27 U	0.25 U	0.25 U	0.28 U	0.28 U	0.25 U	0.25 U	0.25 U	0.25 U
PETROLEUM HYDROCARBONS																	
Method NWTPH-G (µg/L)																	
Gasoline	1,000	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U
Method NWTPH-Dx (µg/L)																	
Diesel	500	NA	250 U	250 U	250 U	250 U	250 U	100 U	100 U	120 U	120 U	100 U	**110**	100 U	100 U	100 U	100 U
Motor Oil	500	NA	500 U	250 U	250 U	500 U	500 U	200 U	200 U	250 U	230 U	200 UJ	**500** J	200 U	200 U	200 U	200 U
Creosote Oil	500	NA	250 U	500 U	500 U	250 U	250 U	100 U	100 U	250 U	230 U	200 U	200 U	200 U	200 U	**170**	**170**
BTEX (µg/L)																	
Method SW8021B/SW021B MOD																	
Benzene	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
m, p-Xylene	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table A-1
Historical Analyltical Results
Groundwater Compliance Monitoring
Cascade Pole Site
Port of Olympia, Washington

	Cleanup Screening Levels for Groundwater	MW-05S WF57E 2/27/2013	Dup of MW-05S PZ-30 WF57F 2/27/2013	MW-05S XC81D 8/28/2013	Dup of MW-05S PZ-30 XC81G 8/28/2013	MW-05S YA02B 2/18/2014	Dup of MW-05S PZ-30 YA02A 2/18/2014	MW-05S ZB62B 9/23/2014	Dup of MW-05S PZ-30 ZB62C 9/23/2014	MW-05S ZZ61D 3/9/2015	Dup of MW-05S PZ-30 ZZ61C 3/9/2015	MW-05S ANH7H 9/24/2015	Dup of MW-05S PZ-30 ANH7G 9/24/2015	MW-05S AWD0D 2/16/2016	Dup of MW-05S PZ-30 AWD0E 2/16/2016	MW-05S 16I0325-10 9/20/2016	Dup of MW-05S PZ-30 16I0325-16 9/20/2016
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs) (µg/L)																	
EPA Method SW8270D / SW8270D-SIM																	
Naphthalene	4900	**1.6**	**1.6**	1.0 U	1.0 U	1.0 U	1.0 U	**1.7**	**1.4**	**1.4**	**1.4**	**5.0** J	**2.8** J	1.0 U	1.0 U	1.0 U	1.0 U
2-Methylnaphthalene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Acenaphthylene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Acenaphthene		**10**	**11**	**8.7**	**9.4**	**9.0**	**10**	**8.6**	**9.4**	**6.5**	**7.1**	**7.9**	**7.2**	**6.2**	**6.6**	**10.8**	**10.1**
Dibenzofuran		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Fluorene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Pentachlorophenol	3	10 U	10 U	10 U	10 U	10 U	10 U	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 U	10 U	10 U	10 U
Phenanthrene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbazole		NA	NA	NA	NA	NA	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Anthracene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**1.0**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Fluoranthene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Pyrene	2600	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Benzo(a)Anthracene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.11 U	0.12 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Chrysene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.11 U	0.12 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Benzo(b)Fluoranthene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)Fluoranthene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)Pyrene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.11 U	0.12 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Indeno(1,2,3-cd)Pyrene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.11 U	0.12 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Dibenz(a,h)Anthracene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.11 U	0.12 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Benzo(g,h,i)Perylene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1-Methylnaphthalene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Total Benzofluoranthenes		0.20 U	0.20 U	0.20 U	0.20 U	0.10 U	0.10 U	0.11 U	0.12 U	0.20 U	0.20 U	0.10 U	0.10 U	0.10 U	0.10 U	0.20 U	0.20 U
cPAH TEQ (a)	0.1 (b)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cPAH TEQ (a) (Using 1/2 RL for ND)	0.1 (b)	0.076	0.076	0.076	0.076	0.071	0.071	0.078	0.085	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076
PENTACHLOROPHENOL (µg/L)																	
EPA Method SW8041A/SW8270C,D																	
Pentachlorophenol	3	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.52 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
PETROLEUM HYDROCARBONS																	
Method NWTPH-G (µg/L)																	
Gasoline	1,000	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	100 U	100 U	100 U	100 U
Method NWTPH-Dx (µg/L)																	
Diesel	500	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 UJ	110 U	100 U	100 U	**120**	100 U	100 UJ	100 UJ
Motor Oil	500	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 UJ	220 U	200 U	200 U	**740** J	200 UJ	200 U	200 U
Creosote Oil	500	**230**	**210**	100 U	100 U	100 U	100 U	**100**	**130**	100 UJ	110 U	**280**	**230**	**230** J	100 UJ	**121**	**153**
BTEX (µg/L)																	
Method SW8021B/SW021B MOD																	
Benzene	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
m, p-Xylene	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table A-1
Historical Analyltical Results
Groundwater Compliance Monitoring
Cascade Pole Site
Port of Olympia, Washington

	Cleanup Screening Levels for Groundwater	MW-05S 17C0014-14 2/28/2017	Dup of MW-05S PZ-30 17C0014-15 2/28/2017	MW-05S 17J0190-14 10/11/2017	Dup of MW-05S PZ-30 17J0190-15 10/11/2017	MW-05S 18C0203-02 3/8/2018	Dup of MW-05S PZ-30 18C0203-03 3/8/2018	MW-05S 18I0183-02 9/12/2018	Dup of MW-05S PZ-30 18I0183-03 9/12/2018	MW-05S 19C0223-02 3/11/2019	Dup of MW-05S PZ-30 19C0223-03 3/11/2019	MW-01D 10/7/1998	MW-01D 2006030261-02 3/21/2006	MW-01D 2006110251-02 11/15/2006	MW-01D LS10H 10/1/2007	MW-01D MO07E 3/19/208	MW-01D NH92D 7/29/208	MW-01D OH25D 1/9/2009
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs) (µg/L)																		
EPA Method SW8270D / SW8270D-SIM																		
Naphthalene	4900	1.0 U	**1.1**	**9.7**	**10.6**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 UJ	**91**	NA	**1.24**	1.0 U	1.0 U	**2.2**	**0.7** J
2-Methylnaphthalene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 UJ	NA	NA	NA	1.0 U	1.0 U	1.0 U	1.0 U
Acenaphthylene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 UJ	0.2 U	NA	0.10 U	1.0 U	1.0 U	1.0 U	1.0 U
Acenaphthene		**7.2**	**6.9**	**9.1**	**9.1**	**8.1**	**8.1**	**5.0**	**6.0**	1.0 UJ	**4.4** J	**58**	NA	**0.48**	1.0 U	1.0 U	1.0 U	1.0 U
Dibenzofuran		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 UJ	NA	NA	NA	1.0 U	1.0 U	1.0 U	1.0 U
Fluorene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 UJ	**30**	NA	**0.31**	1.0 U	1.0 U	1.0 U	1.0 U
Pentachlorophenol	3	10 U	10 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	NA	NA	NA	5.0 U	5.0 U	5.0 U	5.0 U
Phenanthrene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 UJ	**56**	NA	**1.42**	1.0 U	1.0 U	1.0 U	**0.6** J
Carbazole		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 UJ	NA	NA	NA	1.0 U	1.0 U	1.0 U	1.0 U
Anthracene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 UJ	**8.7**	NA	**0.39**	1.0 U	1.0 U	1.0 U	1.0 U
Fluoranthene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 UJ	**9.4**	NA	**0.89**	1.0 U	1.0 U	1.0 U	1.0 U
Pyrene	2600	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 UJ	**7.6**	NA	**0.39**	1.0 U	1.0 U	1.0 U	1.0 U
Benzo(a)Anthracene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	**1.0**	0.10 U	0.10 U	**0.11**	0.10 U	0.10 U	0.10 U
Chrysene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	**1.2**	0.10 U	0.10 U	**0.11**	0.10 U	0.10 U	0.10 U
Benzo(b)Fluoranthene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.3**	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Benzo(k)Fluoranthene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.3**	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Benzo(a)Pyrene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.2 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Indeno(1,2,3-cd)Pyrene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.2 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Dibenz(a,h)Anthracene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.2 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Benzo(g,h,i)Perylene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 UJ	0.2 U	NA	0.10 U	1.0 U	1.0 U	1.0 U	1.0 U
1-Methylnaphthalene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 UJ	NA	NA	NA	1.0 U	1.0 U	1.0 U	1.0 U
Total Benzofluoranthenes		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	NA	NA	NA	NA	NA	NA	NA
cPAH TEQ (a)	0.1 (b)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.172**	ND	ND	**0.0121**	ND	ND	ND
cPAH TEQ (a) (Using 1/2 RL for ND)	0.1 (b)	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076	**0.292**	0.076	0.076	**0.082**	0.076	0.076	0.076
PENTACHLOROPHENOL (µg/L)																		
EPA Method SW8041A/SW8270C,D																		
Pentachlorophenol	3	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	**18**	0.10 U	0.10 U	**0.2** UJ	0.25 U	0.25 UJ	0.25 U
PETROLEUM HYDROCARBONS																		
Method NWTPH-G (µg/L)																		
Gasoline	1,000	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	NA	50 U	50 U	250 U	250 U	250 U	250 U
Method NWTPH-Dx (µg/L)																		
Diesel	500	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	**2,500**	100 U	100 U	250 U	250 U	250 U	250 U
Motor Oil	500	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U	**2,800**	500 U	500 U	500 U	500 U	500 U	500 U
Creosote Oil	500	100 U	100 U	200 U	200 U	200 U	200 U	**377**	**263**	200 U	200 U	NA	**106**	NA	NA	250 U	500 U	250 U
BTEX (µg/L)																		
Method SW8021B/SW021B MOD																		
Benzene	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
m, p-Xylene	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table A-1
Historical Analyltical Results
Groundwater Compliance Monitoring
Cascade Pole Site
Port of Olympia, Washington

	Cleanup Screening Levels for Groundwater	MW-01D PJ99E 8/10/2009	MW-01D QF84I 1/15/2010	MW-01D RS33O 10/19/2010	MW-01D SO90J 3/25/2011	MW-01D TI17F 8/9/2011	MW-01D UL56I 3/8/2012	MW-01D VP53C 10/25/2012	MW-01D WF72E 2/28/2013	MW-01D XC89A 8/29/2013	MW-01D YA02I 2/19/2014	MW-01D ZB62N 9/24/2014	MW-01D ZZ61O 3/10/2015	MW-01D ANH7O 9/25/2015	MW-01D AWD0M 2/17/2016	MW-01D 16I0325-05 9/21/2016	MW-01D 17C0014-03 3/1/2017	MW-01D 17J0190-03 10/12/2017
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs) (µg/L)																		
EPA Method SW8270D / SW8270D-SIM																		
Naphthalene	4900	**1.8**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**1.8**	**1.1**	**1.2**	**1.9**	**2.7**	**1.2**	**2.5**	**1.3**	1.0 U	1.0 U
2-Methylnaphthalene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Acenaphthylene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Acenaphthene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dibenzofuran		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Fluorene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Pentachlorophenol	3	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	10 U	10 U	10 U	10 U	10 UJ	10 UJ	10 UJ	10 U	10 U	10 U	10.0 U
Phenanthrene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbazole		1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	NA	NA	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Anthracene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Fluoranthene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Pyrene	2600	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Benzo(a)Anthracene		0.10 U	0.11 U	0.10 U	0.10 U	0.12 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.11 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Chrysene		0.10 U	0.11 U	0.10 U	0.10 U	0.12 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.11 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Benzo(b)Fluoranthene		0.10 U	0.11 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)Fluoranthene		0.10 U	0.11 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)Pyrene		0.10 U	0.11 U	0.10 U	0.10 U	0.12 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.11 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Indeno(1,2,3-cd)Pyrene		0.10 U	0.11 U	0.10 U	0.10 U	0.12 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.11 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Dibenz(a,h)Anthracene		0.10 U	0.11 U	0.10 U	0.10 U	0.12 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.11 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Benzo(g,h,i)Perylene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1-Methylnaphthalene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Total Benzofluoranthenes		NA	NA	0.10 U	0.10 U	0.12 U	0.10 U	0.20 U	0.20 U	0.20 U	0.10 U	0.11 U	0.20 U	0.10 U	0.10 U	0.20 U	0.20 U	0.20 U
cPAH TEQ (a)	0.1 (b)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cPAH TEQ (a) (Using 1/2 RL for ND)	0.1 (b)	0.076	0.083	0.071	0.071	0.085	0.071	0.076	0.076	0.076	0.071	0.078	0.076	0.076	0.076	0.076	0.076	0.076
PENTACHLOROPHENOL (µg/L)																		
EPA Method SW8041A/SW8270C,D																		
Pentachlorophenol	3	0.25 U	0.25 U	0.25 U	0.25 U	0.29 U	**0.85**	0.25 U	**2.0**	0.28 U	0.25 U	0.25 U	**1.7**	**51**	0.25 U	**0.31**	0.25 U	0.25 U
PETROLEUM HYDROCARBONS																		
Method NWTPH-G (µg/L)																		
Gasoline	1,000	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	100 U	100 U	100 U	100 U
Method NWTPH-Dx (µg/L)																		
Diesel	500	250 U	250 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	110 U	100 U	100 U	100 UJ	100 U	100 U
Motor Oil	500	500 U	500 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U	**400**	**330**	200 U	210 U	200 U	200 U	200 U
Creosote Oil	500	250 U	250 U	100 U	200 U	200 U	200 U	100 U	**160**	100 U	100 U	**290**	**140**	**110**	110 U	100 U	100 U	200 U
BTEX (µg/L)																		
Method SW8021B/SW021B MOD																		
Benzene	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
m, p-Xylene	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table A-1
Historical Analyltical Results
Groundwater Compliance Monitoring
Cascade Pole Site
Port of Olympia, Washington

	Cleanup Screening Levels for Groundwater	MW-01D 18C0203-15 3/9/2018	MW-01D 18I0183-15 9/13/2018	MW-01D 19C0223-15 3/12/2019	MW-02D 10/7/1998	MW-02D 2006030294-02 3/22/2006	MW-02D 2006110251-05 11/15/2006	MW-02D LS21B 10/2/2007	Dup of MW-02D PZ30 LS21F 10/2/2007	MW-02D MO26I 3/19/208	MW-02D NH92H 7/29/208	MW-02D OH25A 1/9/2009	MW-02D PK28D 8/11/2009	MW-02D QG15A 1/18/2010	MW-02D RS33F 10/18/2010	MW-02D SO90G 3/25/2011	MW-02D TI17D 8/9/2011	MW-02D UL56A 3/8/2012
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs) (µg/L)																		
EPA Method SW8270D / SW8270D-SIM																		
Naphthalene	4900	**1.7**	**1.1**	1.0 U	**600**	NA	**143**	**680** J	**500** J	**380**	1.1 U	**210**	**230**	**180**	1.0 U	**76**	**110**	**19**
2-Methylnaphthalene		1.0 U	1.0 U	1.0 U	NA	NA	NA	**120**	**85**	**94**	1.1 U	**26**	**38**	**36**	1.0 U	**13**	**9.4**	**1.5**
Acenaphthylene		1.0 U	1.0 U	1.0 U	**1.0**	NA	**0.95**	**1.6**	**1.3**	**1.2**	1.1 U	1.0 U	1.0 U	1.0 U	**1.9**	1.0 U	1.0 U	1.0 U
Acenaphthene		1.0 U	1.0 U	1.0 U	**54**	NA	**96**	**86** J	**67** J	**70**	1.1 U	**26**	**35**	**34**	**8.8**	**21**	**18**	**9.3**
Dibenzofuran		1.0 U	1.0 U	1.0 U	NA	NA	NA	**35**	**26**	**30**	1.1 U	**8.1**	**12**	**14**	**3.0**	**7.9**	**6.1**	**3.2**
Fluorene		1.0 U	1.0 U	1.0 U	**18**	NA	**40**	**37** J	**28** J	**30**	1.1 U	**9.3**	**12**	**15**	**11**	**8.4**	**5.8**	**3.8**
Pentachlorophenol	3	10.0 U	10.0 U	10.0 U	NA	NA	NA	5.0 U	5.0 U	5.0 U	5.5 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Phenanthrene		1.0 U	1.0 U	1.0 U	**7.1**	NA	**27**	**23** J	**18** J	**22**	1.1 U	**6.0**	**7.2**	**9.1**	**5.0**	**5.1**	**3.9**	**2.3**
Carbazole		1.0 U	1.0 U	1.0 UJ	NA	NA	NA	**23**	**16**	**21**	**1.5**	**8.0**	**9.0**	**9.1**	**8.3** J	**5.7**	**4.9**	**1.4**
Anthracene		1.0 U	1.0 U	1.0 U	1.0 U	NA	**0.50**	1.0 U	1.0 U	**1.0**	1.1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Fluoranthene		1.0 U	1.0 U	1.0 U	**2.0**	NA	0.10 U	1.0 U	1.0 U	1.0 U	1.1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Pyrene	2600	1.0 U	1.0 U	1.0 UJ	**1.7**	NA	0.10 U	1.0 U	1.0 U	1.0 U	1.1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Benzo(a)Anthracene		0.10 U	0.10 U	0.10 U	1.0 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Chrysene		0.10 U	0.10 U	0.10 U	1.0 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Benzo(b)Fluoranthene		NA	NA	NA	1.0 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	NA	NA	NA	NA
Benzo(k)Fluoranthene		NA	NA	NA	1.0 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 UJ	0.10 U	NA	NA	NA	NA
Benzo(a)Pyrene		0.10 U	0.10 U	0.10 U	1.0 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Indeno(1,2,3-cd)Pyrene		0.10 U	0.10 U	0.10 U	1.0 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Dibenz(a,h)Anthracene		0.10 U	0.10 U	0.10 U	1.0 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Benzo(g,h,i)Perylene		1.0 U	1.0 U	1.0 U	1.0 U	NA	0.10 U	1.0 U	1.0 U	1.0 U	1.1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1-Methylnaphthalene		1.0 U	1.0 U	1.0 U	NA	NA	NA	**77**	**68**	**66**	1.1 U	**22**	**32**	**30**	1.0 U	**15**	**13**	**5.1**
Total Benzofluoranthenes		0.20 U	0.20 U	0.20 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.10 U	0.10 U	0.10 U	0.10 U
cPAH TEQ (a)	0.1 (b)	ND	ND	ND	**15**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cPAH TEQ (a) (Using 1/2 RL for ND)	0.1 (b)	0.076	0.076	0.076	ND	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.071	0.071	0.071	0.071
PENTACHLOROPHENOL (µg/L)																		
EPA Method SW8041A/SW8270C,D																		
Pentachlorophenol	3	0.25 U	0.25 U	0.25 U	5.0 U	0.10 U	10 U	0.23 U	0.25 U	0.25 U	0.25 UJ	0.25 U	0.26 U	0.25 U	0.25 U	0.25 U	0.26 U	0.25 U
PETROLEUM HYDROCARBONS																		
Method NWTPH-G (µg/L)																		
Gasoline	1,000	100 U	100 U	100 U	NA	**495**	**830**	**3,100**	**2,900**	**1,700**	**980**	**760**	**790**	**600**	**420**	**620**	250 U	250 U
Method NWTPH-Dx (µg/L)																		
Diesel	500	100 U	100 U	100 U	**1,800**	100 U	100 U	**290**	**280**	**540**	250 U	250 U	250 U	250 U	100 U	120 U	**140**	100 U
Motor Oil	500	200 U	200 U	200 U	**5,200**	500 U	500 U	500 U	500 U	500 U	500 U	500 U	250 U	500 U	200 U	230 U	200 U	**210**
Creosote Oil	500	200 U	200 U	200 U	NA	**790**	**1,710**	NA	NA	**4,200**	500 U	**990**	**600**	**700**	**270**	**280**	**440**	200 U
BTEX (µg/L)																		
Method SW8021B/SW021B MOD																		
Benzene	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
m, p-Xylene	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table A-1
Historical Analyltical Results
Groundwater Compliance Monitoring
Cascade Pole Site
Port of Olympia, Washington

	Cleanup Screening Levels for Groundwater	MW-02D VP10A 10/24/2012	MW-02D WF72A 2/28/2013	MW-02D XC81B 8/28/2013	MW-02D YA02D 2/18/2014	MW-02D ZB62I 9/23/2014	MW-02D ZZ61M 3/10/2015	MW-02D ANH7D 9/24/2015	MW-02D AWD0F 2/16/2016	MW-02D 16I0325-07 9/20/2016	MW-02D 17C0014-04 2/28/2017	MW-02D 17J0190-04 10/11/2017	MW-02D 18C0203-11 3/8/2018	MW-02D 18I0183-11 9/13/2018	MW-02D 19C0223-11 3/12/2019	MW-05D 10/7/1998	MW-05D 2006030294-06 3/22/2006
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs) (µg/L)																	
EPA Method SW8270D / SW8270D-SIM																	
Naphthalene	4900	**43**	**1.0**	1.0 U	1.0 U	1.0 U	**6**	1.0 U	1.0 U	**1.7**	1.0 U	**75.0**	**5.6**	**37.6**	**4.3**	**4.0**	NA
2-Methylnaphthalene		**11**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**11.0**	**1.6**	**6.7**	**1.3**	NA	NA
Acenaphthylene		**1.1**	1.0 U	1.0 U	1.0 U	**2.3**	1.0 U	**3.1**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**4.1**	NA
Acenaphthene		**26**	**7.2**	**4.7**	**6.6**	**3.8**	**3.8**	**2.2**	1.0 U	1.0 U	**4.7**	**17.2**	**4.6**	**12.7**	**3.6**	**15**	NA
Dibenzofuran		**11**	**2.8**	**1.0**	**2.3**	1.0 U	**1.2**	1.0 U	1.0 U	1.0 U	**1.3**	**5.2**	**1.3**	**3.8**	**1.2**	NA	NA
Fluorene		**13**	**4.7**	**3.3**	**3.2**	**1.0**	**1.9**	**1.5**	1.0 U	1.0 U	**2.1**	**5.4**	**1.6**	**4.1**	**1.3**	**5.0**	NA
Pentachlorophenol	3	10 U	10 U	10 U	10 U	10 UJ	10 UJ	10 UJ	10 U	10 U	10 U	10.0 U	10.0 U	10.0 U	10.0 U	NA	NA
Phenanthrene		**8.3**	**2.2**	1.0 U	**2.0**	1.0 U	**1.4**	1.0 U	1.0 U	1.0 U	**1.5**	**4.4**	**1.4**	**4.9**	**1.2**	**8.5**	NA
Carbazole		**9.0**	NA	NA	NA	**4.0**	1.0 U	**1.6**	1.0 U	**1.1**	1.0 U	**5.3**	1.0 U	**2.8**	1.0 UJ	NA	NA
Anthracene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA
Fluoranthene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**8.5**	NA
Pyrene	2600	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	**7.0**	NA
Benzo(a)Anthracene		0.10 U	0.10 U	0.10 U	0.10 U	0.11 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	1.0 U	0.10 U
Chrysene		0.10 U	0.10 U	0.10 U	0.10 U	0.11 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	1.0 U	0.10 U
Benzo(b)Fluoranthene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.0 U	0.10 U
Benzo(k)Fluoranthene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.0 U	0.10 U
Benzo(a)Pyrene		0.10 U	0.10 U	0.10 U	0.10 U	0.11 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	1.0 U	0.10 U
Indeno(1,2,3-cd)Pyrene		0.10 U	0.10 U	0.10 U	0.10 U	0.11 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	1.0 U	0.10 U
Dibenz(a,h)Anthracene		0.10 U	0.10 U	0.10 U	0.10 U	0.11 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	1.0 U	0.10 U
Benzo(g,h,i)Perylene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA
1-Methylnaphthalene		**19**	**1.9**	1.0 U	**2.1**	1.0 U	**1.2**	1.0 U	1.0 U	1.0 U	**1.6**	**12.7**	**1.8**	**7.7**	**1.5**	NA	NA
Total Benzofluoranthenes		0.20 U	0.20 U	0.20 U	0.10 U	0.11 U	0.20 U	0.10 U	0.10 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	NA	NA
cPAH TEQ (a)	0.1 (b)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**4.0**	ND
cPAH TEQ (a) (Using 1/2 RL for ND)	0.1 (b)	0.076	0.076	0.076	0.071	0.078	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076	ND	0.076
PENTACHLOROPHENOL (µg/L)																	
EPA Method SW8041A/SW8270C,D																	
Pentachlorophenol	3	0.25 U	0.25 U	**0.37**	0.25 U	0.25 U	0.25 U	0.25 U	0.31 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	5.0 U	0.10 U
PETROLEUM HYDROCARBONS																	
Method NWTPH-G (µg/L)																	
Gasoline	1,000	**510**	250 U	**620**	250 U	250 U	250 U	250 U	100 U	**140**	100 U	**188**	100 U	**131**	100 U	NA	50 U
Method NWTPH-Dx (µg/L)																	
Diesel	500	**130**	100 U	**160**	100 U	100 U	120 U	100 U	100 U	100 UJ	100 U	100 U	100 U	**109**	100 U	**440**	100 U
Motor Oil	500	200 U	200 U	**470**	200 U	200 U	230 U	200 U	210 U	200 U	200 U	200 U	200 U	200 U	200 U	**520**	500 U
Creosote Oil	500	**910**	**270**	**530**	100 U	**130**	120 U	**140**	110 U	100 U	100 U	**299**	100 U	**694**	200 U	NA	NA
BTEX (µg/L)																	
Method SW8021B/SW021B MOD																	
Benzene	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
m, p-Xylene	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table A-1
Historical Analyltical Results
Groundwater Compliance Monitoring
Cascade Pole Site
Port of Olympia, Washington

	Cleanup Screening Levels for Groundwater	MW-05D 2006110275-02 11/16/2006	MW-05D LS21D 10/2/2007	MW-05D MO26F 3/20/208	MW-05D NH92G 7/29/208	MW-05D OH25B 1/9/2009	MW-05D PK28G 8/11/2009	MW-05D QF84A 1/14/2010	MW-05D RS33K 10/19/2010	MW-05D SO90D 3/25/2011	MW05D TI17I 8/9/2011	MW-05D UL56C 3/8/2012	MW-05D VP53E 10/25/2012	MW-05D WF57D 2/27/2013	MW-05D XC81A 8/28/2013	MW-05D YA02G 2/19/2014	MW-05D ZB62J 9/23/2014	MW-05D ZZ61F 3/9/2015
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs) (µg/L)																		
EPA Method SW8270D / SW8270D-SIM																		
Naphthalene	4900	**21.0**	**28**	**27**	**2.2**	**1.2**	**3.4**	1.0 U	1.0 U	1.0 U	**2.1**	1.0 U	**1.3**	**2.9**	1.0 U	1.0 U	**1.1**	1.0 U
2-Methylnaphthalene		NA	**3.0**	**3.0**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Acenaphthylene		**0.10**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**1.1**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Acenaphthene		**6.39**	**5.8**	**6.7**	**3.9**	**0.6** J	**3.7**	1.0 U	**4.2**	**1.3**	**2.6**	**3.3**	**5.6**	**4.0**	**5.5**	1.0 U	**2.5**	1.0 U
Dibenzofuran		NA	**2.2**	**2.5**	**1.4**	1.0 U	**1.1**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Fluorene		**2.60**	**1.8**	**2.3**	**1.0**	1.0 U	**1.2**	1.0 U	1.0 U	1.0 U	**1.2**	1.0 U	**1.3**	**1.6**	1.0 U	1.0 U	1.0 U	1.0 U
Pentachlorophenol	3	NA	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	10 U	10 U	10 U	10 U	10 UJ	10 UJ
Phenanthrene		**0.89**	**1.1**	**1.2**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbazole		NA	**1.5**	**1.6**	**1.4**	1.0 U	**1.5**	1.0 U	**1.6** J	1.0 U	1.0 U	**1.1**	**2.2**	NA	NA	NA	1.0 U	1.0 U
Anthracene		**0.25**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Fluoranthene		**0.60**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Pyrene	2600	**0.27**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Benzo(a)Anthracene		0.10 U	1.0 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.12 U	0.11 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.11 U	0.10 U
Chrysene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.12 U	0.11 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.11 U	0.10 U
Benzo(b)Fluoranthene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)Fluoranthene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 UJ	0.10 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)Pyrene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.12 U	0.11 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.11 U	0.10 U
Indeno(1,2,3-cd)Pyrene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.12 U	0.11 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.11 U	0.10 U
Dibenz(a,h)Anthracene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.12 U	0.11 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.11 U	0.10 U
Benzo(g,h,i)Perylene		0.10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1-Methylnaphthalene		NA	**2.8**	**3.1**	1.0 U	1.0 U	**1.0**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**1.4**	1.0 U	1.0 U	1.0 U	1.0 U
Total Benzofluoranthenes		NA	NA	NA	NA	NA	NA	NA	0.10 U	0.12 U	0.11 U	0.10 U	0.20 U	0.20 U	0.20 U	0.10 U	0.11 U	0.20 U
cPAH TEQ (a)	0.1 (b)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cPAH TEQ (a) (Using 1/2 RL for ND)	0.1 (b)	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.071	0.085	0.078	0.071	0.076	0.076	0.076	0.071	0.078	0.076
PENTACHLOROPHENOL (µg/L)																		
EPA Method SW8041A/SW8270C,D																		
Pentachlorophenol	3	0.10 U	0.22 U	0.25 U	0.25 UJ	0.25 U	0.25 U	0.25 U	0.26 U	0.25 U	0.25 U	0.25 U	**2.2**	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
PETROLEUM HYDROCARBONS																		
Method NWTPH-G (µg/L)																		
Gasoline	1,000	50 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U
Method NWTPH-Dx (µg/L)																		
Diesel	500	100 U	250 U	250 U	250 U	250 U	250 U	250 U	100 U	110 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	110 U
Motor Oil	500	500 U	500 U	500 U	500 U	500 U	250 U	500 U	200 U	220 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U	220 U
Creosote Oil	500	NA	NA	**370**	500 U	250 U	500 U	250 U	100 U	220 U	200 U	200 U	100 U	**210**	100 U	100 U	100 U	110 U
BTEX (µg/L)																		
Method SW8021B/SW021B MOD																		
Benzene	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
m, p-Xylene	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table A-1
Historical Analyltical Results
Groundwater Compliance Monitoring
Cascade Pole Site
Port of Olympia, Washington

	Cleanup Screening Levels for Groundwater	MW-05D ANH7F 9/24/2015	MW-05D AWD0B 2/16/2016	MW-05D 16I0325-09 9/20/2016	MW-05D 17C0014-05 2/28/2017	MW-05D 17J0190-05 10/11/2017	MW-05D 18C0203-07 3/8/2018	MW-05D 18I0183-07 9/12/2018	MW-05D 19C0223-07 3/11/2019	CW-13 2006110275-04 11/16/2006	CW-13 LS22A 10/2/2007	CW-13 MO26D 3/20/208	CW-13 NH70F 7/28/208	CW-13 PK28F 8/11/2009	CW-13 QF84D 1/14/2010	CW-13 RS33G 10/19/2010	CW-13 SO90K 3/25/2011	CW-13 TI17H 8/9/2011
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs) (µg/L)																		
EPA Method SW8270D / SW8270D-SIM																		
Naphthalene	4900	1.0 U	1.0 U	1.0 U	1.0 U	**3.1**	1.0 U	1.0 U	1.0 U	**1.54**	**8.7**	**11**	**30**	**4.8**	1.0 U	1.0 U	1.0 U	**5.2**
2-Methylnaphthalene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Acenaphthylene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**0.48**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Acenaphthene		**3.2**	1.0 U	**3.2**	1.0 U	**7.0**	1.0 U	**4.6**	1.0 U	**50.0**	**64**	**44**	**51**	**25**	1.0 U	**5.4**	1.0 U	**4.3**
Dibenzofuran		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	**19**	**15**	**18**	**7.6**	1.0 U	**1.5**	1.0 U	1.0 U
Fluorene		1.0 U	1.0 U	1.0 U	1.0 U	**1.9**	1.0 U	1.0 U	1.0 U	**20.7**	**25**	**16**	**21**	**8.7**	1.0 U	**2.4**	1.0 U	1.0 U
Pentachlorophenol	3	10 UJ	10 U	10 U	10 U	10.0 U	10.0 U	10.0 U	10.0 U	NA	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Phenanthrene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**34.5**	**31**	**14**	**21**	**8.2**	1.0 U	**1.2**	1.0 U	1.0 U
Carbazole		**1.7**	1.0 U	1.0 U	1.0 U	**3.0**	1.0 U	**1.6**	1.0 UJ	NA	**14**	**11**	**13**	**3.0**	1.0 U	1.0 UJ	1.0 U	**1.4**
Anthracene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**4.38**	**3.3**	**1.8**	**2.8**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Fluoranthene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**5.47**	**5.9**	**1.8**	**3.2**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Pyrene	2600	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	**2.44**	**2.2**	1.0 U	**1.4**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Benzo(a)Anthracene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	**0.37**	**0.24**	**0.14**	**0.13**	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Chrysene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	**0.25**	**0.24**	**0.10**	**0.12**	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Benzo(b)Fluoranthene		NA	NA	NA	NA	NA	NA	NA	NA	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	NA	NA	NA
Benzo(k)Fluoranthene		NA	NA	NA	NA	NA	NA	NA	NA	0.10 U	0.10 U	0.10 U	0.10 U	0.10 UJ	0.10 U	NA	NA	NA
Benzo(a)Pyrene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Indeno(1,2,3-cd)Pyrene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Dibenz(a,h)Anthracene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Benzo(g,h,i)Perylene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1-Methylnaphthalene		1.0 U	1.0 U	1.0 U	1.0 U	**1.2**	1.0 U	1.0 U	1.0 U	NA	**34**	**27**	**34**	**12**	1.0 U	1.0 U	1.0 U	1.0 U
Total Benzofluoranthenes		0.10 U	0.10 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	NA	NA	NA	NA	NA	NA	0.10 U	0.10 U	0.10 U
cPAH TEQ (a)	0.1 (b)	ND	ND	ND	ND	ND	ND	ND	ND	**0.040**	**0.0264**	**0.015**	**0.014**	ND	ND	ND	ND	ND
cPAH TEQ (a) (Using 1/2 RL for ND)	0.1 (b)	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076	**0.110**	**0.096**	**0.085**	**0.084**	0.076	0.076	0.071	0.071	0.071
PENTACHLOROPHENOL (µg/L)																		
EPA Method SW8041A/SW8270C,D																		
Pentachlorophenol	3	0.25 U	0.25 U	**0.79** J	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.10 U	0.22 U	0.25 U	**2.9**	0.26 U	0.25 U	0.25 U	0.25 U	**1.0**
PETROLEUM HYDROCARBONS																		
Method NWTPH-G (µg/L)																		
Gasoline	1,000	250 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	**83**	**750**	**630**	**1,000**	250 U	250 U	250 U	250 U	250 U
Method NWTPH-Dx (µg/L)																		
Diesel	500	100 U	100 U	100 UJ	100 U	100 U	100 U	100 U	100 U	100 U	250 U	**290**	**270**	250 U	250 U	100 U	100 U	100 U
Motor Oil	500	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U	500 U	500 U	500 U	500 U	250 U	500 U	200 U	200 U	200 U
Creosote Oil	500	**130**	100 U	100 U	100 U	200 U	200 U	200 U	200 U	**471**	NA	**1,100**	**960**	500 U	250 U	100 U	200 U	200 U
BTEX (µg/L)																		
Method SW8021B/SW021B MOD																		
Benzene	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
m, p-Xylene	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table A-1
Historical Analyltical Results
Groundwater Compliance Monitoring
Cascade Pole Site
Port of Olympia, Washington

	Cleanup Screening Levels for Groundwater	CW-13 UL56B 3/8/2012	CW-13 VP53B 10/25/2012	CW-13 WF57C 2/27/2013	CW-13 XC81C 8/28/2013	CW-13 YA02C 2/18/2014	CW-13 ZB62H 9/23/2014	CW-13 ZZ61E 3/9/2015	CW-13 ANH7K 9/25/2015	CW-13 AWD0C 2/16/2016	CW-13 16I0325-02 9/20/2016	CW-13 17C0014-02 2/28/2017	CW-13 17J0190-02 10/11/2017	CW-13 18C0203-06 3/8/2018	CW-13 18I0183-06 9/12/2018	CW-13 19C0223-06 3/11/2019
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs) (µg/L)																
EPA Method SW8270D / SW8270D-SIM																
Naphthalene	4900	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**24.4**
2-Methylnaphthalene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Acenaphthylene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Acenaphthene		1.0 U	**5.2**	1.0 U	**1.5**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**9.8**
Dibenzofuran		1.0 U	**2.5**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**2.7**
Fluorene		1.0 U	**2.0**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**3.8**
Pentachlorophenol	3	5.0 U	10 U	10 U	10 U	10 U	10 UJ	10 UJ	10 UJ	10 U	10 U	10 U	10.0 U	10.0 U	10.0 U	10.0 U
Phenanthrene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**1.8**
Carbazole		1.0 U	1.0 U	NA	NA	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**1.2** J
Anthracene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Fluoranthene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Pyrene	2600	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ
Benzo(a)Anthracene		0.10 U	0.10 U	0.10 U	0.11 U	0.10 U	0.11 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Chrysene		0.10 U	0.10 U	0.10 U	0.11 U	0.10 U	0.11 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Benzo(b)Fluoranthene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)Fluoranthene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)Pyrene		0.10 U	0.10 U	0.10 U	0.11 U	0.10 U	0.11 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Indeno(1,2,3-cd)Pyrene		0.10 U	0.10 U	0.10 U	0.11 U	0.10 U	0.11 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Dibenz(a,h)Anthracene		0.10 U	0.10 U	0.10 U	0.11 U	0.10 U	0.11 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Benzo(g,h,i)Perylene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1-Methylnaphthalene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**5.9**
Total Benzofluoranthenes		0.10 U	0.20 U	0.20 U	0.22 U	0.10 U	0.11 U	0.20 U	0.10 U	0.10 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
cPAH TEQ (a)	0.1 (b)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cPAH TEQ (a) (Using 1/2 RL for ND)	0.1 (b)	0.071	0.076	0.076	0.083	0.071	0.078	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076
PENTACHLOROPHENOL (µg/L)																
EPA Method SW8041A/SW8270C,D																
Pentachlorophenol	3	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	**0.88** J	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
PETROLEUM HYDROCARBONS																
Method NWTPH-G (µg/L)																
Gasoline	1,000	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	100 U	100 U	100 U	100 U	100 U	100 U	**280**
Method NWTPH-Dx (µg/L)																
Diesel	500	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 UJ	100 U	100 U	100 U	100 U	100 U
Motor Oil	500	200 U	200 U	200 U	200 U	200 U	200 U	210 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U
Creosote Oil	500	200 U	100 U	**110**	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	200 U	200 U	200 U	200 U
BTEX (µg/L)																
Method SW8021B/SW021B MOD																
Benzene	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
m, p-Xylene	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Abbreviations and Acronyms:

BTEX = benzene, toluene, ethylbenzene, and xylenes
cPAH = carcinogenic polycyclic aromatic hydrocarbon
µg/L = micrograms per liter
EPA = US Environmental Protection Agency
MTCA = Model Toxics Control Act
NA = not analyzed
ND = Not Detected.
NWTPH-Dx = total petroleum hydrocarbons diesel range
NWTPH-Gx = TPH gasoline range
PCP = pentachlorophenol
RL = reporting limit
SIM = select ion monitoring
WAC = Washington Administrative Code

Notes:

U = Indicates the compound was undetected at the given reporting limit.
J = Indicates the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
UJ = The analyte was not detected in the sample; the reported sample reporting limit is an estimate.
E = The reported concentration is an estimate; the result exceeded the instrument calibration range.
Bold indicates detected compound. Box indicates exceedance of screening levels.
Box indicates exceedance of screening level.

(a) Toxicity equivalency factor (TEQ) as described in WAC 173-340-708 (8).
(b) cPAH cleanup screening levels based on practical quantitation limit (PQL) for individual cPAHs.
(c) The gasoline-range hydrocarbon result for this sample consisted of a solitary peak, identified by GCMS as toluene.
(d) The sample contains gasoline-range hydrocarbons, which do not appear to be automotive gasoline.
(e) Verification sample analyzed using SW8270-SIM.

APPENDIX B

Laboratory Analytical Results

Analytical Resources, Incorporated
Analytical Chemists and Consultants

04 October 2018

Christine Kimmel
Landau Associates, Inc.
130 2nd Avenue S.
Edmonds, WA 98020

RE: Cascade Pole

Please find enclosed sample receipt documentation and analytical results for samples from the project referenced above.

Sample analyses were performed according to ARI's Quality Assurance Plan and any provided project specific Quality Assurance Plan. Each analytical section of this report has been approved and reviewed by an analytical peer, the appropriate Laboratory Supervisor or qualified substitute, and a technical reviewer.

Should you have any questions or problems, please feel free to contact us at your convenience.

Associated Work Order(s)	Associated SDG ID(s)
18I0183	N/A

Kelly Bottem

Digitally signed by Kelly Bottem
DN: c=US, st=Washington, l=Tukwila, o=Analytical Resources, Inc., ou=Project Manager, cn=Kelly Bottem, email=kelly.bottem@arilabs.com
Date: 2018.10.04 16:10:47 -07'00'

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the enclose Narrative. ARI, an accredited laboratory, certifies that the report results for which ARI is accredited meets all the requirements of the accrediting body. A list of certified analyses, accreditations, and expiration dates is included in this report.

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Analytical Resources, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

ACCREDITED IN ACCORDANCE WITH nelac
Cert# 100006

PJLA Testing
Accreditation # 66169

LANDAU ASSOCIATES

- [ ] Seattle/Edmonds (425) 778-0907
- [x] Tacoma (253) 926-2493
- [ ] Spokane (509) 327-9737
- [ ] Portland (503) 542-1080
- [ ] _____

Chain-of-Custody Record

Date 9/12/2018

Page 1 of 1

18I0183

Project Name Port of Olympia Project No. 0021041.010.016

Project Location/Event Cascade Pole, Dry Season

Sampler's Name KMG/KAM

Project Contact Chris Kimmel

Send Results To C. Kimmel, D. Bache, D. Jorgensen

Turnaround Time
- [x] Standard
- [ ] Accelerated
- [ ] _____

Sample I.D.	Date	Time	Matrix	No. of Containers	NWTPH-Gx	NWTPH-Dx + creosote	PAHs	cPAHs SIM	PCP 8270	PCP 8041
TripBlank-20180912	—	—	Aq	2	X					
MW-05S-20180912	9/12/18	1320	Aq	10	X	X	X	X	X	
PZ-30-20180912	9/12/18	1334	Aq	10	X	X	X	X	X	
PZ-18-20180912	9/12/18	1807	Aq	10	X	X	X	X	X	
PZ-17-20180912	9/12/18	1645	Aq	10	X	X	X	X	X	
CW-13-20180912	9/12/18	1331	Aq	10	X	X	X	X	X	
MW-05D-20180912	9/12/18	1515	Aq	10	X	X	X	X	X	
LW-3-20180912	9/12/18	1637	Aq	10	X	X	X	X	X	
LW-4R-20180912	9/12/18	1750	Aq	10	X	X	X	X	X	
MW-02S-20180913	9/13/18	936	Aq	10	X	X	X	X	X	
MW-02D-20180913	9/13/18	1021	Aq	10	X	X	X	X	X	
PZ-19-20180913	9/13/18	1211	Aq	10	X	X	X	X	X	
PZ-12-20180912	9/12/18	1054	Aq	10	X	X	X	X	X	
PZ-13-20180912	9/12/18	1055	Aq	10	X	X	X	X	X	
MW-01D-20180913	9/13/18	1335	Aq	10	X	X	X	X	X	
MW-01S-20180913	9/13/18	1238	Aq	10	X	X	X	X	X	

Observations/Comments

- [x] Allow water samples to settle, collect aliquot from clear portion
- [x] NWTPH-Dx - run acid wash silica gel cleanup
- [ ] Analyze for EPH if no specific product identified

VOC/BTEX/VPH (soil):
- [ ] non-preserved
- [ ] preserved w/methanol
- [ ] preserved w/sodium bisulfate
- [ ] Freeze upon receipt
- [ ] Dissolved metal water samples field filtered

Other Run all samples for PCP using 8270. If result = ND, then and only then, run PCP by 8041.

Special Shipment/Handling or Storage Requirements

Method of Shipment

Relinquished by	Received by	Relinquished by	Received by
Signature Katie M. Haughty	Signature Stephanie Fishel	Signature	Signature
Printed Name Katie Haughty	Printed Name Stephanie Fishel	Printed Name	Printed Name
Company Landau Associates	Company ARI	Company	Company
Date 9/13/2018 Time 17:00	Date 9-13-18 Time 1704	Date Time	Date Time

WHITE COPY - Project File YELLOW COPY - Laboratory PINK COPY - Client Rep

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TripBlank-2080912	18I0183-01	Water	12-Sep-2018 13:20	13-Sep-2018 17:04
MW-05S-20180912	18I0183-02	Water	12-Sep-2018 13:20	13-Sep-2018 17:04
PZ-30-20180912	18I0183-03	Water	12-Sep-2018 13:34	13-Sep-2018 17:04
PZ-18-20180912	18I0183-04	Water	12-Sep-2018 18:07	13-Sep-2018 17:04
PZ-17-20180912	18I0183-05	Water	12-Sep-2018 16:45	13-Sep-2018 17:04
CW-13-20180912	18I0183-06	Water	12-Sep-2018 13:31	13-Sep-2018 17:04
MW-05D-20180912	18I0183-07	Water	12-Sep-2018 15:15	13-Sep-2018 17:04
LW-3-20180912	18I0183-08	Water	12-Sep-2018 16:37	13-Sep-2018 17:04
LW-4R-20180912	18I0183-09	Water	12-Sep-2018 17:50	13-Sep-2018 17:04
MW-02S-20180913	18I0183-10	Water	13-Sep-2018 09:36	13-Sep-2018 17:04
MW-02D-20180913	18I0183-11	Water	13-Sep-2018 10:21	13-Sep-2018 17:04
PZ-19-20180913	18I0183-12	Water	13-Sep-2018 12:11	13-Sep-2018 17:04
PZ-12-20180912	18I0183-13	Water	12-Sep-2018 10:54	13-Sep-2018 17:04
PZ-13-20180912	18I0183-14	Water	12-Sep-2018 10:55	13-Sep-2018 17:04
MW-01D-20180913	18I0183-15	Water	13-Sep-2018 13:35	13-Sep-2018 17:04
MW-01S-20180913	18I0183-16	Water	13-Sep-2018 12:38	13-Sep-2018 17:04

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

Case Narrative

Chlorinated Phenols - EPA Method SW8041A

The sample(s) were extracted and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The surrogate percent recoveries were within control limits with the exception of 2,4,6-Tribromophenol which is out of control high in samples 18I0185-05 and 18I0185-07. The samples 8I0185-05 and 18I0185-07 were non-detect and no further action is required.

The method blank(s) were clean at the reporting limits.

The LCS percent recoveries were within control limits.

Per the COC instructions the samples were allowed to settle and sample volumes were collected from the cleear portions.

Gasoline by NWTPH-g (GC/MS)

The sample(s) were run within the recommended holding times.

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The LCS percent recoveries were within control limits.

Only sample vials that did not contain airbubbles were used for analysis.

Semivolatiles - EPA Method SW8270D

The sample(s) were extracted and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The LCS percent recoveries were within control limits.

Per the COC instructions the samples were allowed to settle and sample volumes were collected from the cleear portions.

Polynuclear Aromatic Hydrocarbons (PAH) - EPA Method SW8270D-SIM

The sample(s) were extracted and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The LCS percent recoveries were within control limits.

Per the COC instructions the samples were allowed to settle and sample volumes were collected from the cleear portions.

Diesel/Heavy Oil Range Organics - WA-Ecology Method NW-TPHDx

The sample(s) were extracted and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The LCS percent recoveries were within control limits.

Per the COC instructions the samples were allowed to settle and sample volumes were collected from the cleear portions.

WORK ORDER

18I0183

Client: Landau Associates, Inc.
Project: Cascade Pole
Project Manager: Kelly Bottem
Project Number: Cascade Pole

Report To:
Landau Associates, Inc.
Christine Kimmel
130 2nd Avenue S.
Edmonds, WA 98020
Phone: 425-778-0907
Fax: -

Invoice To:
Port of Olympia
Don Bache
606 Columbia St NW, Suite 300
Olympia, WA 98501
Phone :360-786-8570
Fax: -

Date Due: 28-Sep-2018 18:00 (10 day TAT)
Received By: Stephanie Fishel
Date Received: 13-Sep-2018 17:04
Logged In By: Jacob Walter
Date Logged In: 14-Sep-2018 09:54

Samples Received at: **3.6°C**

Intact, properly signed and dated custody seals attached to outside of cooler(s)	No	Custody papers included with the cooler	Yes
Custody papers properly filled out (in, signed, analyses requested, etc)	Yes	Was a temperature blank included in the cooler	No
Was sufficient ice used (if appropriate)	Yes	All bottles sealed in individual plastic bags	No
All bottles arrived in good condition (unbroken)	Yes	All bottle labels complete and legible	Yes
Number of containers listed on COC match number received	Yes	Bottle labels and tags agree with COC	Yes
Correct bottles used for the requested analyses	Yes	All VOC vials free of air bubbles	No
Analyses/bottles require preservation (attach preservation sheet excluding VOC).	No	Sufficient amount of sample sent in each bottle	Yes
Sample split at ARI	No		

Analysis	Due	TAT	Expires	Comments

WORK ORDER

18I0183

Client: Landau Associates, Inc. **Project Manager:** Kelly Bottem

Project: Cascade Pole **Project Number:** Cascade Pole

Analysis	Due	TAT	Expires	Comments
18I0183-01 TripBlank-2080912 [Water] Sampled 12-Sep-2018 13:20 (GMT-08:00) Pacific Time (US & Canada)				
A = VOA Vial, Clear, 40 mL, HCL *B = VOA Vial, Clear, 40 mL, HCL*				
8260C Gas (NWTPH)	28-Sep-2018 15:00	10	26-Sep-2018 13:20	Some samples may be hot.
18I0183-02 MW-05S-20180912 [Water] Sampled 12-Sep-2018 13:20 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass NM, Amber, 500 mL *B = Glass NM, Amber, 500 mL* *C = Glass NM, Amber, 500 mL* *D = Glass NM, Amber, 500 mL* *E = Glass NM, Amber, 500 mL* *F = Glass NM, Amber, 500 mL* *G = Glass NM, Amber, 500 mL* *H = Glass NM, Amber, 500 mL* *I = VOA Vial, Clear, 40 mL, HCL* *J = VOA Vial, Clear, 40 mL, HCL*				
8041A Chlorinated Phenols	28-Sep-2018 15:00	10	19-Sep-2018 13:20	Onlly run PCP if PCP 8270 is ND. Some samples may
Extract and Hold	28-Sep-2018 15:00	10	12-Sep-2019 13:20	
8260C Gas (NWTPH)	28-Sep-2018 15:00	10	26-Sep-2018 13:20	Some samples may be hot.
8270D SVOC (1-20 ug/L SepF)	28-Sep-2018 15:00	10	19-Sep-2018 13:20	PAHs plus PCP. Some samples may be hot.
8270D-SIM PAH (0.1 ug/L or 5 ug/kg)	28-Sep-2018 15:00	10	19-Sep-2018 13:20	SIM cPAHs only. Some samples may be hot.
TPH NW (Extractables) low level	28-Sep-2018 15:00	10	19-Sep-2018 13:20	Plus Creosote, Acid cleaned. Some samples may be hot
18I0183-03 PZ-30-20180912 [Water] Sampled 12-Sep-2018 13:34 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass NM, Amber, 500 mL *B = Glass NM, Amber, 500 mL* *C = Glass NM, Amber, 500 mL* *D = Glass NM, Amber, 500 mL* *E = Glass NM, Amber, 500 mL* *F = Glass NM, Amber, 500 mL* *G = Glass NM, Amber, 500 mL* *H = Glass NM, Amber, 500 mL* *I = VOA Vial, Clear, 40 mL, HCL* *J = VOA Vial, Clear, 40 mL, HCL*				
8270D-SIM PAH (0.1 ug/L or 5 ug/kg)	28-Sep-2018 15:00	10	19-Sep-2018 13:34	SIM cPAHs only. Some samples may be hot.
Extract and Hold	28-Sep-2018 15:00	10	12-Sep-2019 13:34	
8270D SVOC (1-20 ug/L SepF)	28-Sep-2018 15:00	10	19-Sep-2018 13:34	PAHs plus PCP. Some samples may be hot.
8260C Gas (NWTPH)	28-Sep-2018 15:00	10	26-Sep-2018 13:34	Some samples may be hot.
8041A Chlorinated Phenols	28-Sep-2018 15:00	10	19-Sep-2018 13:34	Onlly run PCP if PCP 8270 is ND. Some samples may
TPH NW (Extractables) low level	28-Sep-2018 15:00	10	19-Sep-2018 13:34	Plus Creosote, Acid cleaned. Some samples may be hot
18I0183-04 PZ-18-20180912 [Water] Sampled 12-Sep-2018 18:07 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass NM, Amber, 500 mL *B = Glass NM, Amber, 500 mL* *C = Glass NM, Amber, 500 mL* *D = Glass NM, Amber, 500 mL* *E = Glass NM, Amber, 500 mL* *F = Glass NM, Amber, 500 mL* *G = Glass NM, Amber, 500 mL* *H = Glass NM, Amber, 500 mL* *I = VOA Vial, Clear, 40 mL, HCL* *J = VOA Vial, Clear, 40 mL, HCL*				
8270D-SIM PAH (0.1 ug/L or 5 ug/kg)	28-Sep-2018 15:00	10	19-Sep-2018 18:07	SIM cPAHs only. Some samples may be hot.
8041A Chlorinated Phenols	28-Sep-2018 15:00	10	19-Sep-2018 18:07	Onlly run PCP if PCP 8270 is ND. Some samples may
8260C Gas (NWTPH)	28-Sep-2018 15:00	10	26-Sep-2018 18:07	Some samples may be hot.
8270D SVOC (1-20 ug/L SepF)	28-Sep-2018 15:00	10	19-Sep-2018 18:07	PAHs plus PCP. Some samples may be hot.
Extract and Hold	28-Sep-2018 15:00	10	12-Sep-2019 18:07	
TPH NW (Extractables) low level	28-Sep-2018 15:00	10	19-Sep-2018 18:07	Plus Creosote, Acid cleaned. Some samples may be hot

WORK ORDER

18I0183

Client: Landau Associates, Inc. **Project Manager:** Kelly Bottem

Project: Cascade Pole **Project Number:** Cascade Pole

Analysis	Due	TAT	Expires	Comments
18I0183-05 PZ-17-20180912 [Water] Sampled 12-Sep-2018 16:45 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass NM, Amber, 500 mL	*B = Glass NM, Amber, 500 mL*	*C = Glass NM, Amber, 500 mL*	*D = Glass NM, Amber, 500 mL*	
E = Glass NM, Amber, 500 mL	*F = Glass NM, Amber, 500 mL*	*G = Glass NM, Amber, 500 mL*	*H = Glass NM, Amber, 500 mL*	
I = VOA Vial, Clear, 40 mL, HCL	*J = VOA Vial, Clear, 40 mL, HCL*			
Extract and Hold	28-Sep-2018 15:00	10	12-Sep-2019 16:45	
TPH NW (Extractables) low level	28-Sep-2018 15:00	10	19-Sep-2018 16:45	Plus Creosote, Acid cleaned. Some samples may be hot
8270D-SIM PAH (0.1 ug/L or 5 ug/kg)	28-Sep-2018 15:00	10	19-Sep-2018 16:45	SIM cPAHs only. Some samples may be hot.
8260C Gas (NWTPH)	28-Sep-2018 15:00	10	26-Sep-2018 16:45	Some samples may be hot.
8270D SVOC (1-20 ug/L SepF)	28-Sep-2018 15:00	10	19-Sep-2018 16:45	PAHs plus PCP. Some samples may be hot.
8041A Chlorinated Phenols	28-Sep-2018 15:00	10	19-Sep-2018 16:45	Onlly run PCP if PCP 8270 is ND. Some samples may
18I0183-06 CW-13-20180912 [Water] Sampled 12-Sep-2018 13:31 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass NM, Amber, 500 mL	*B = Glass NM, Amber, 500 mL*	*C = Glass NM, Amber, 500 mL*	*D = Glass NM, Amber, 500 mL*	
E = Glass NM, Amber, 500 mL	*F = Glass NM, Amber, 500 mL*	*G = Glass NM, Amber, 500 mL*	*H = Glass NM, Amber, 500 mL*	
I = VOA Vial, Clear, 40 mL, HCL	*J = VOA Vial, Clear, 40 mL, HCL*			
8260C Gas (NWTPH)	28-Sep-2018 15:00	10	26-Sep-2018 13:31	Some samples may be hot.
8041A Chlorinated Phenols	28-Sep-2018 15:00	10	19-Sep-2018 13:31	Onlly run PCP if PCP 8270 is ND. Some samples may
8270D SVOC (1-20 ug/L SepF)	28-Sep-2018 15:00	10	19-Sep-2018 13:31	PAHs plus PCP. Some samples may be hot.
8270D-SIM PAH (0.1 ug/L or 5 ug/kg)	28-Sep-2018 15:00	10	19-Sep-2018 13:31	SIM cPAHs only. Some samples may be hot.
Extract and Hold	28-Sep-2018 15:00	10	12-Sep-2019 13:31	
TPH NW (Extractables) low level	28-Sep-2018 15:00	10	19-Sep-2018 13:31	Plus Creosote, Acid cleaned. Some samples may be hot
18I0183-07 MW-05D-20180912 [Water] Sampled 12-Sep-2018 11:15 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass NM, Amber, 500 mL	*B = Glass NM, Amber, 500 mL*	*C = Glass NM, Amber, 500 mL*	*D = Glass NM, Amber, 500 mL*	
E = Glass NM, Amber, 500 mL	*F = Glass NM, Amber, 500 mL*	*G = Glass NM, Amber, 500 mL*	*H = Glass NM, Amber, 500 mL*	
I = VOA Vial, Clear, 40 mL, HCL	*J = VOA Vial, Clear, 40 mL, HCL*			
8041A Chlorinated Phenols	28-Sep-2018 15:00	10	19-Sep-2018 11:15	Onlly run PCP if PCP 8270 is ND. Some samples may
TPH NW (Extractables) low level	28-Sep-2018 15:00	10	19-Sep-2018 11:15	Plus Creosote, Acid cleaned. Some samples may be hot
Extract and Hold	28-Sep-2018 15:00	10	12-Sep-2019 11:15	
8270D-SIM PAH (0.1 ug/L or 5 ug/kg)	28-Sep-2018 15:00	10	19-Sep-2018 11:15	SIM cPAHs only. Some samples may be hot.
8260C Gas (NWTPH)	28-Sep-2018 15:00	10	26-Sep-2018 11:15	Some samples may be hot.
8270D SVOC (1-20 ug/L SepF)	28-Sep-2018 15:00	10	19-Sep-2018 11:15	PAHs plus PCP. Some samples may be hot.

WORK ORDER

18I0183

Client: Landau Associates, Inc. **Project Manager:** Kelly Bottem

Project: Cascade Pole **Project Number:** Cascade Pole

Analysis	Due	TAT	Expires	Comments
18I0183-08 LW-3-20180912 [Water] Sampled 12-Sep-2018 16:37 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass NM, Amber, 500 mL; B = Glass NM, Amber, 500 mL; C = Glass NM, Amber, 500 mL; D = Glass NM, Amber, 500 mL; E = Glass NM, Amber, 500 mL; F = Glass NM, Amber, 500 mL; G = Glass NM, Amber, 500 mL; H = Glass NM, Amber, 500 mL; I = VOA Vial, Clear, 40 mL, HCL; J = VOA Vial, Clear, 40 mL, HCL				
TPH NW (Extractables) low level	28-Sep-2018 15:00	10	19-Sep-2018 16:37	Plus Creosote, Acid cleaned. Some samples may be hot
8041A Chlorinated Phenols	28-Sep-2018 15:00	10	19-Sep-2018 16:37	Onlly run PCP if PCP 8270 is ND. Some samples may
8260C Gas (NWTPH)	28-Sep-2018 15:00	10	26-Sep-2018 16:37	Some samples may be hot.
8270D SVOC (1-20 ug/L SepF)	28-Sep-2018 15:00	10	19-Sep-2018 16:37	PAHs plus PCP. Some samples may be hot.
8270D-SIM PAH (0.1 ug/L or 5 ug/kg)	28-Sep-2018 15:00	10	19-Sep-2018 16:37	SIM cPAHs only. Some samples may be hot.
Extract and Hold	28-Sep-2018 15:00	10	12-Sep-2019 16:37	
18I0183-09 LW-4R-20180912 [Water] Sampled 12-Sep-2018 17:50 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass NM, Amber, 500 mL; B = Glass NM, Amber, 500 mL; C = Glass NM, Amber, 500 mL; D = Glass NM, Amber, 500 mL; E = Glass NM, Amber, 500 mL; F = Glass NM, Amber, 500 mL; G = Glass NM, Amber, 500 mL; H = Glass NM, Amber, 500 mL; I = VOA Vial, Clear, 40 mL, HCL; J = VOA Vial, Clear, 40 mL, HCL				
8041A Chlorinated Phenols	28-Sep-2018 15:00	10	19-Sep-2018 17:50	Onlly run PCP if PCP 8270 is ND. Some samples may
8260C Gas (NWTPH)	28-Sep-2018 15:00	10	26-Sep-2018 17:50	Some samples may be hot.
TPH NW (Extractables) low level	28-Sep-2018 15:00	10	19-Sep-2018 17:50	Plus Creosote, Acid cleaned. Some samples may be hot
8270D SVOC (1-20 ug/L SepF)	28-Sep-2018 15:00	10	19-Sep-2018 17:50	PAHs plus PCP. Some samples may be hot.
Extract and Hold	28-Sep-2018 15:00	10	12-Sep-2019 17:50	
8270D-SIM PAH (0.1 ug/L or 5 ug/kg)	28-Sep-2018 15:00	10	19-Sep-2018 17:50	SIM cPAHs only. Some samples may be hot.
18I0183-10 MW-02S-20180913 [Water] Sampled 13-Sep-2018 09:36 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass NM, Amber, 500 mL; B = Glass NM, Amber, 500 mL; C = Glass NM, Amber, 500 mL; D = Glass NM, Amber, 500 mL; E = Glass NM, Amber, 500 mL; F = Glass NM, Amber, 500 mL; G = Glass NM, Amber, 500 mL; H = Glass NM, Amber, 500 mL; I = VOA Vial, Clear, 40 mL, HCL; J = VOA Vial, Clear, 40 mL, HCL				
8041A Chlorinated Phenols	28-Sep-2018 15:00	10	20-Sep-2018 09:36	Onlly run PCP if PCP 8270 is ND. Some samples may
Extract and Hold	28-Sep-2018 15:00	10	13-Sep-2019 09:36	
TPH NW (Extractables) low level	28-Sep-2018 15:00	10	20-Sep-2018 09:36	Plus Creosote, Acid cleaned. Some samples may be hot
8270D-SIM PAH (0.1 ug/L or 5 ug/kg)	28-Sep-2018 15:00	10	20-Sep-2018 09:36	SIM cPAHs only. Some samples may be hot.
8270D SVOC (1-20 ug/L SepF)	28-Sep-2018 15:00	10	20-Sep-2018 09:36	PAHs plus PCP. Some samples may be hot.
8260C Gas (NWTPH)	28-Sep-2018 15:00	10	27-Sep-2018 09:36	Some samples may be hot.

WORK ORDER

18I0183

Client: Landau Associates, Inc. **Project Manager:** Kelly Bottem

Project: Cascade Pole **Project Number:** Cascade Pole

Analysis	Due	TAT	Expires	Comments

18I0183-11 MW-02D-20180913 [Water] Sampled 13-Sep-2018 10:21 (GMT-08:00) Pacific Time (US & Canada)

A = Glass NM, Amber, 500 mL *B = Glass NM, Amber, 500 mL* *C = Glass NM, Amber, 500 mL* *D = Glass NM, Amber, 500 mL*
E = Glass NM, Amber, 500 mL *F = Glass NM, Amber, 500 mL* *G = Glass NM, Amber, 500 mL* *H = Glass NM, Amber, 500 mL*
I = VOA Vial, Clear, 40 mL, HCL *J = VOA Vial, Clear, 40 mL, HCL*

Extract and Hold	28-Sep-2018 15:00	10	13-Sep-2019 10:21	
8270D-SIM PAH (0.1 ug/L or 5 ug/kg)	28-Sep-2018 15:00	10	20-Sep-2018 10:21	SIM cPAHs only. Some samples may be hot.
8270D SVOC (1-20 ug/L SepF)	28-Sep-2018 15:00	10	20-Sep-2018 10:21	PAHs plus PCP. Some samples may be hot.
8041A Chlorinated Phenols	28-Sep-2018 15:00	10	20-Sep-2018 10:21	Onlly run PCP if PCP 8270 is ND. Some samples may
TPH NW (Extractables) low level	28-Sep-2018 15:00	10	20-Sep-2018 10:21	Plus Creosote, Acid cleaned. Some samples may be hot
8260C Gas (NWTPH)	28-Sep-2018 15:00	10	27-Sep-2018 10:21	Some samples may be hot.

18I0183-12 PZ-19-20180913 [Water] Sampled 13-Sep-2018 12:11 (GMT-08:00) Pacific Time (US & Canada)

A = Glass NM, Amber, 500 mL *B = Glass NM, Amber, 500 mL* *C = Glass NM, Amber, 500 mL* *D = Glass NM, Amber, 500 mL*
E = Glass NM, Amber, 500 mL *F = Glass NM, Amber, 500 mL* *G = Glass NM, Amber, 500 mL* *H = Glass NM, Amber, 500 mL*
I = VOA Vial, Clear, 40 mL, HCL *J = VOA Vial, Clear, 40 mL, HCL*

8260C Gas (NWTPH)	28-Sep-2018 15:00	10	27-Sep-2018 12:11	Some samples may be hot.
8270D SVOC (1-20 ug/L SepF)	28-Sep-2018 15:00	10	20-Sep-2018 12:11	PAHs plus PCP. Some samples may be hot.
TPH NW (Extractables) low level	28-Sep-2018 15:00	10	20-Sep-2018 12:11	Plus Creosote, Acid cleaned. Some samples may be hot
Extract and Hold	28-Sep-2018 15:00	10	13-Sep-2019 12:11	
8270D-SIM PAH (0.1 ug/L or 5 ug/kg)	28-Sep-2018 15:00	10	20-Sep-2018 12:11	SIM cPAHs only. Some samples may be hot.
8041A Chlorinated Phenols	28-Sep-2018 15:00	10	20-Sep-2018 12:11	Onlly run PCP if PCP 8270 is ND. Some samples may

18I0183-13 PZ-12-20180912 [Water] Sampled 12-Sep-2018 10:54 (GMT-08:00) Pacific Time (US & Canada)

A = Glass NM, Amber, 500 mL *B = Glass NM, Amber, 500 mL* *C = Glass NM, Amber, 500 mL* *D = Glass NM, Amber, 500 mL*
E = Glass NM, Amber, 500 mL *F = Glass NM, Amber, 500 mL* *G = Glass NM, Amber, 500 mL* *H = Glass NM, Amber, 500 mL*
I = VOA Vial, Clear, 40 mL, HCL *J = VOA Vial, Clear, 40 mL, HCL*

8041A Chlorinated Phenols	28-Sep-2018 15:00	10	19-Sep-2018 10:54	Onlly run PCP if PCP 8270 is ND. Some samples may
8260C Gas (NWTPH)	28-Sep-2018 15:00	10	26-Sep-2018 10:54	Some samples may be hot.
8270D-SIM PAH (0.1 ug/L or 5 ug/kg)	28-Sep-2018 15:00	10	19-Sep-2018 10:54	SIM cPAHs only. Some samples may be hot.
TPH NW (Extractables) low level	28-Sep-2018 15:00	10	19-Sep-2018 10:54	Plus Creosote, Acid cleaned. Some samples may be hot
Extract and Hold	28-Sep-2018 15:00	10	12-Sep-2019 10:54	
8270D SVOC (1-20 ug/L SepF)	28-Sep-2018 15:00	10	19-Sep-2018 10:54	PAHs plus PCP. Some samples may be hot.

WORK ORDER

18I0183

Client: Landau Associates, Inc. **Project Manager:** Kelly Bottem

Project: Cascade Pole **Project Number:** Cascade Pole

Analysis	Due	TAT	Expires	Comments
18I0183-14 PZ-13-20180912 [Water] Sampled 12-Sep-2018 10:55 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass NM, Amber, 500 mL; B = Glass NM, Amber, 500 mL; C = Glass NM, Amber, 500 mL; D = Glass NM, Amber, 500 mL; E = Glass NM, Amber, 500 mL; F = Glass NM, Amber, 500 mL; G = Glass NM, Amber, 500 mL; H = Glass NM, Amber, 500 mL; I = VOA Vial, Clear, 40 mL, HCL; J = VOA Vial, Clear, 40 mL, HCL				
Extract and Hold	28-Sep-2018 15:00	10	12-Sep-2019 10:55	
8270D-SIM PAH (0.1 ug/L or 5 ug/kg)	28-Sep-2018 15:00	10	19-Sep-2018 10:55	SIM cPAHs only. Some samples may be hot.
8041A Chlorinated Phenols	28-Sep-2018 15:00	10	19-Sep-2018 10:55	Onlly run PCP if PCP 8270 is ND. Some samples may
8260C Gas (NWTPH)	28-Sep-2018 15:00	10	26-Sep-2018 10:55	Some samples may be hot.
8270D SVOC (1-20 ug/L SepF)	28-Sep-2018 15:00	10	19-Sep-2018 10:55	PAHs plus PCP. Some samples may be hot.
TPH NW (Extractables) low level	28-Sep-2018 15:00	10	19-Sep-2018 10:55	Plus Creosote, Acid cleaned. Some samples may be hot
18I0183-15 MW-01D-20180913 [Water] Sampled 13-Sep-2018 13:35 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass NM, Amber, 500 mL; B = Glass NM, Amber, 500 mL; C = Glass NM, Amber, 500 mL; D = Glass NM, Amber, 500 mL; E = Glass NM, Amber, 500 mL; F = Glass NM, Amber, 500 mL; G = Glass NM, Amber, 500 mL; H = Glass NM, Amber, 500 mL; I = VOA Vial, Clear, 40 mL, HCL; J = VOA Vial, Clear, 40 mL, HCL				
8041A Chlorinated Phenols	28-Sep-2018 15:00	10	20-Sep-2018 13:35	Onlly run PCP if PCP 8270 is ND. Some samples may
TPH NW (Extractables) low level	28-Sep-2018 15:00	10	20-Sep-2018 13:35	Plus Creosote, Acid cleaned. Some samples may be hot
Extract and Hold	28-Sep-2018 15:00	10	13-Sep-2019 13:35	
8270D-SIM PAH (0.1 ug/L or 5 ug/kg)	28-Sep-2018 15:00	10	20-Sep-2018 13:35	SIM cPAHs only. Some samples may be hot.
8260C Gas (NWTPH)	28-Sep-2018 15:00	10	27-Sep-2018 13:35	Some samples may be hot.
8270D SVOC (1-20 ug/L SepF)	28-Sep-2018 15:00	10	20-Sep-2018 13:35	PAHs plus PCP. Some samples may be hot.
18I0183-16 MW-01S-20180913 [Water] Sampled 13-Sep-2018 12:38 (GMT-08:00) Pacific Time (US & Canada)				
A = Glass NM, Amber, 500 mL; B = Glass NM, Amber, 500 mL; C = Glass NM, Amber, 500 mL; D = Glass NM, Amber, 500 mL; E = Glass NM, Amber, 500 mL; F = Glass NM, Amber, 500 mL; G = Glass NM, Amber, 500 mL; H = Glass NM, Amber, 500 mL; I = VOA Vial, Clear, 40 mL, HCL; J = VOA Vial, Clear, 40 mL, HCL				
8260C Gas (NWTPH)	28-Sep-2018 15:00	10	27-Sep-2018 12:38	Some samples may be hot.
8270D SVOC (1-20 ug/L SepF)	28-Sep-2018 15:00	10	20-Sep-2018 12:38	PAHs plus PCP. Some samples may be hot.
Extract and Hold	28-Sep-2018 15:00	10	13-Sep-2019 12:38	
TPH NW (Extractables) low level	28-Sep-2018 15:00	10	20-Sep-2018 12:38	Plus Creosote, Acid cleaned. Some samples may be hot
8270D-SIM PAH (0.1 ug/L or 5 ug/kg)	28-Sep-2018 15:00	10	20-Sep-2018 12:38	SIM cPAHs only. Some samples may be hot.
8041A Chlorinated Phenols	28-Sep-2018 15:00	10	20-Sep-2018 12:38	Onlly run PCP if PCP 8270 is ND. Some samples may

Reviewed By _____ Date _____

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Landau Tacoma Project Name: Cascade pole - dry season

COC No(s): _____ (NA) Delivered by: Fed-Ex UPS Courier (Hand Delivered) Other: _____

Assigned ARI Job No: 18I0183 Tracking No: _____ (NA)

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler? YES (NO)

Were custody papers included with the cooler? ..... (YES) NO

Were custody papers properly filled out (ink, signed, etc.) ..... (YES) NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry) 3.6 4.1 4.9 0.5 5.6 3.5 1.8 5.1

Time: 1704

If cooler temperature is out of compliance fill out form 00070F Temp Gun ID#: D002565

Cooler Accepted by: Set Date: 9-13-18 Time: 1704

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler? ..... YES (NO)

What kind of packing material was used? ... (Bubble Wrap) (Wet Ice) Gel Packs (Baggies) (Foam Block) Paper Other: _____

Was sufficient ice used (if appropriate)? ..... NA (YES) NO

Were all bottles sealed in individual plastic bags? ..... YES (NO)

Did all bottles arrive in good condition (unbroken)? ..... (YES) NO

Were all bottle labels complete and legible? ..... (YES) NO

Did the number of containers listed on COC match with the number of containers received? ..... (YES) NO

Did all bottle labels and tags agree with custody papers? ..... (YES) NO

Were all bottles used correct for the requested analyses? ..... (YES) NO

Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)... (NA) YES NO

Were all VOC vials free of air bubbles? ..... NA YES (NO)

Was sufficient amount of sample sent in each bottle? ..... (YES) NO

Date VOC Trip Blank was made at ARI..... NA 08/29/18

Was Sample Split by ARI : (NA) YES Date/Time:_____ Equipment:_____ Split by:_____

Samples Logged by: JSm Date: 09/14/18 Time: 0953

*** Notify Project Manager of discrepancies or concerns ***

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions: LW-VR-20180912 are the only vials w/air bubbles. lab to determine sizes

By: JSm Date: 09/14/18

Small Air Bubbles – 2mm	Peabubbles 2-4 mm	LARGE Air Bubbles > 4 mm
• • •	• • •	● ● ●

Small → "sm" (< 2 mm)

Peabubbles → "pb" (2 to < 4 mm)

Large → "lg" (4 to < 6 mm)

Headspace → "hs" (> 6 mm)

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

TripBlank-2080912

18I0183-01 (Water)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 09/12/2018 13:20
Instrument: NT3 Analyst: PC — Analyzed: 19-Sep-2018 13:34

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGI0496 Sample Size: 10 mL
Prepared: 19-Sep-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)		1	100	ND	ug/L	U
Surrogate: Toluene-d8			*80-120 %*	*94.7*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*106*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

MW-05S-20180912

18I0183-02 (Water)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 09/12/2018 13:20
Instrument: NT3 Analyst: PC — Analyzed: 20-Sep-2018 12:13

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGI0521 — Sample Size: 10 mL
Prepared: 20-Sep-2018 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)		1	100	ND	ug/L	U
Surrogate: Toluene-d8			*80-120 %*	*97.1*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*104*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

MW-05S-20180912

18I0183-02 (Water)

Semivolatile Organic Compounds

Method: EPA 8270D — Sampled: 09/12/2018 13:20

Instrument: NT12 Analyst: JZ — Analyzed: 21-Sep-2018 18:48

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BGI0351 — Sample Size: 500 mL
Prepared: 17-Sep-2018 — Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	1.0	ND	ug/L	U
Acenaphthylene	208-96-8	1	1.0	ND	ug/L	U
Acenaphthene	83-32-9	1	1.0	**5.0**	ug/L	
2-Methylnaphthalene	91-57-6	1	1.0	ND	ug/L	U
Dibenzofuran	132-64-9	1	1.0	ND	ug/L	U
Fluorene	86-73-7	1	1.0	ND	ug/L	U
Pentachlorophenol	87-86-5	1	10.0	ND	ug/L	U
Phenanthrene	85-01-8	1	1.0	ND	ug/L	U
Anthracene	120-12-7	1	1.0	ND	ug/L	U
Carbazole	86-74-8	1	1.0	ND	ug/L	U
Fluoranthene	206-44-0	1	1.0	ND	ug/L	U
Pyrene	129-00-0	1	1.0	ND	ug/L	U
Benzo(a)anthracene	56-55-3	1	1.0	ND	ug/L	U
Chrysene	218-01-9	1	1.0	ND	ug/L	U
Benzo(a)pyrene	50-32-8	1	1.0	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	1.0	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	1	1.0	ND	ug/L	U
Benzo(g,h,i)perylene	191-24-2	1	1.0	ND	ug/L	U
1-Methylnaphthalene	90-12-0	1	1.0	ND	ug/L	U
Surrogate: 2-Fluorobiphenyl			*54.4-120 %*	*60.4*	*%*	
Surrogate: 2,4,6-Tribromophenol			*49.3-128 %*	*71.6*	*%*	
Surrogate: p-Terphenyl-d14			*60-120 %*	*75.4*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

MW-05S-20180912

18I0183-02 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270D-SIM — Sampled: 09/12/2018 13:20

Instrument: NT8 Analyst: JZ — Analyzed: 25-Sep-2018 17:53

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq)
Preparation Batch: BGI0378 — Sample Size: 500 mL
Prepared: 18-Sep-2018 — Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Benzo(a)anthracene	56-55-3	1	0.10	ND	ug/L	U
Chrysene	218-01-9	1	0.10	ND	ug/L	U
Benzofluoranthenes, Total		1	0.20	ND	ug/L	U
Benzo(a)pyrene	50-32-8	1	0.10	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.10	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	1	0.10	ND	ug/L	U
Surrogate: 2-Methylnaphthalene-d10			*31-120 %*	*62.6*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14			*10-125 %*	*49.0*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

MW-05S-20180912

18I0183-02 (Water)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 09/12/2018 13:20

Instrument: FID3 Analyst: VTS — Analyzed: 28-Sep-2018 14:24

Sample Preparation:	Preparation Method: EPA 3510C SepF	
	Preparation Batch: BGI0381	Sample Size: 500 mL
	Prepared: 18-Sep-2018	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Silica Gel	
	Cleanup Batch: CGI0214	Initial Volume: 1 mL
	Cleaned: 26-Sep-2018	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Sulfuric Acid	
	Cleanup Batch: CGI0213	Initial Volume: 1 mL
	Cleaned: 26-Sep-2018	Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)		1	100	ND	ug/L	U
Motor Oil Range Organics (C24-C38)		1	200	ND	ug/L	U
Creosote Range Organics (C12-C22)	8001-58-9	1	200	**377**	ug/L	
HC ID: CRO						
Surrogate: o-Terphenyl			*50-150 %*	*82.0*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

MW-05S-20180912

18I0183-02 (Water)

Phenols

Method: EPA 8041A — Sampled: 09/12/2018 13:20

Instrument: ECD8 Analyst: YZ — Analyzed: 27-Sep-2018 13:36

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BGI0380 Sample Size: 500 mL
Prepared: 18-Sep-2018 Final Volume: 50 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Pentachlorophenol	87-86-5	1	0.25	ND	ug/L	U
Surrogate: 2,4,6-Tribromophenol			*26-120 %*	*112*	*%*	
Surrogate: 2,4,6-Tribromophenol [2C]			*26-120 %*	*95.2*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

PZ-30-20180912

18I0183-03 (Water)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 09/12/2018 13:34

Instrument: NT3 Analyst: PC — Analyzed: 19-Sep-2018 15:44

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGI0496 Sample Size: 10 mL
Prepared: 19-Sep-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)		1	100	ND	ug/L	U
Surrogate: Toluene-d8			*80-120 %*	*95.5*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*104*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

PZ-30-20180912

18I0183-03 (Water)

Semivolatile Organic Compounds

Method: EPA 8270D — Sampled: 09/12/2018 13:34

Instrument: NT12 Analyst: JZ — Analyzed: 21-Sep-2018 19:22

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BGI0351 — Sample Size: 500 mL
Prepared: 17-Sep-2018 — Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	1.0	ND	ug/L	U
Acenaphthylene	208-96-8	1	1.0	ND	ug/L	U
Acenaphthene	83-32-9	1	1.0	**6.0**	ug/L	
2-Methylnaphthalene	91-57-6	1	1.0	ND	ug/L	U
Dibenzofuran	132-64-9	1	1.0	ND	ug/L	U
Fluorene	86-73-7	1	1.0	ND	ug/L	U
Pentachlorophenol	87-86-5	1	10.0	ND	ug/L	U
Phenanthrene	85-01-8	1	1.0	ND	ug/L	U
Anthracene	120-12-7	1	1.0	ND	ug/L	U
Carbazole	86-74-8	1	1.0	ND	ug/L	U
Fluoranthene	206-44-0	1	1.0	ND	ug/L	U
Pyrene	129-00-0	1	1.0	ND	ug/L	U
Benzo(a)anthracene	56-55-3	1	1.0	ND	ug/L	U
Chrysene	218-01-9	1	1.0	ND	ug/L	U
Benzo(a)pyrene	50-32-8	1	1.0	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	1.0	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	1	1.0	ND	ug/L	U
Benzo(g,h,i)perylene	191-24-2	1	1.0	ND	ug/L	U
1-Methylnaphthalene	90-12-0	1	1.0	ND	ug/L	U
Surrogate: 2-Fluorobiphenyl			*54.4-120 %*	*71.4*	*%*	
Surrogate: 2,4,6-Tribromophenol			*49.3-128 %*	*81.8*	*%*	
Surrogate: p-Terphenyl-d14			*60-120 %*	*84.9*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

PZ-30-20180912

18I0183-03 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270D-SIM — Sampled: 09/12/2018 13:34

Instrument: NT8 Analyst: JZ — Analyzed: 25-Sep-2018 18:20

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq)
Preparation Batch: BGI0378 — Sample Size: 500 mL
Prepared: 18-Sep-2018 — Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Benzo(a)anthracene	56-55-3	1	0.10	ND	ug/L	U
Chrysene	218-01-9	1	0.10	ND	ug/L	U
Benzofluoranthenes, Total		1	0.20	ND	ug/L	U
Benzo(a)pyrene	50-32-8	1	0.10	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.10	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	1	0.10	ND	ug/L	U
Surrogate: 2-Methylnaphthalene-d10			*31-120 %*	*65.6*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14			*10-125 %*	*60.4*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

PZ-30-20180912

18I0183-03 (Water)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 09/12/2018 13:34

Instrument: FID3 Analyst: VTS — Analyzed: 28-Sep-2018 22:30

Sample Preparation:	Preparation Method: EPA 3510C SepF	
	Preparation Batch: BGI0381	Sample Size: 500 mL
	Prepared: 18-Sep-2018	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Silica Gel	
	Cleanup Batch: CGI0214	Initial Volume: 1 mL
	Cleaned: 26-Sep-2018	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Sulfuric Acid	
	Cleanup Batch: CGI0213	Initial Volume: 1 mL
	Cleaned: 26-Sep-2018	Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)		1	100	ND	ug/L	U
Motor Oil Range Organics (C24-C38)		1	200	ND	ug/L	U
Creosote Range Organics (C12-C22)	8001-58-9	1	200	**263**	ug/L	
HC ID: CRO						
Surrogate: o-Terphenyl			*50-150 %*	*91.9*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

PZ-30-20180912

18I0183-03 (Water)

Phenols

Method: EPA 8041A — Sampled: 09/12/2018 13:34

Instrument: ECD8 Analyst: YZ — Analyzed: 27-Sep-2018 13:54

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BGI0380 Sample Size: 500 mL
Prepared: 18-Sep-2018 Final Volume: 50 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Pentachlorophenol	87-86-5	1	0.25	ND	ug/L	U
Surrogate: 2,4,6-Tribromophenol			*26-120 %*	*109*	*%*	
Surrogate: 2,4,6-Tribromophenol [2C]			*26-120 %*	*93.1*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
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Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

PZ-18-20180912

18I0183-04 (Water)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 09/12/2018 18:07

Instrument: NT3 Analyst: PC — Analyzed: 19-Sep-2018 16:10

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGI0496 Sample Size: 10 mL
Prepared: 19-Sep-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)		1	100	ND	ug/L	U
Surrogate: Toluene-d8			*80-120 %*	*98.0*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*106*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

PZ-18-20180912

18I0183-04 (Water)

Semivolatile Organic Compounds

Method: EPA 8270D — Sampled: 09/12/2018 18:07

Instrument: NT12 Analyst: JZ — Analyzed: 21-Sep-2018 19:56

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BGI0351 — Sample Size: 500 mL
Prepared: 17-Sep-2018 — Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	1.0	ND	ug/L	U
Acenaphthylene	208-96-8	1	1.0	ND	ug/L	U
Acenaphthene	83-32-9	1	1.0	ND	ug/L	U
2-Methylnaphthalene	91-57-6	1	1.0	ND	ug/L	U
Dibenzofuran	132-64-9	1	1.0	ND	ug/L	U
Fluorene	86-73-7	1	1.0	ND	ug/L	U
Pentachlorophenol	87-86-5	1	10.0	ND	ug/L	U
Phenanthrene	85-01-8	1	1.0	ND	ug/L	U
Anthracene	120-12-7	1	1.0	ND	ug/L	U
Carbazole	86-74-8	1	1.0	ND	ug/L	U
Fluoranthene	206-44-0	1	1.0	ND	ug/L	U
Pyrene	129-00-0	1	1.0	ND	ug/L	U
Benzo(a)anthracene	56-55-3	1	1.0	ND	ug/L	U
Chrysene	218-01-9	1	1.0	ND	ug/L	U
Benzo(a)pyrene	50-32-8	1	1.0	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	1.0	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	1	1.0	ND	ug/L	U
Benzo(g,h,i)perylene	191-24-2	1	1.0	ND	ug/L	U
1-Methylnaphthalene	90-12-0	1	1.0	ND	ug/L	U
Surrogate: 2-Fluorobiphenyl			*54.4-120 %*	*82.9*	*%*	
Surrogate: 2,4,6-Tribromophenol			*49.3-128 %*	*96.2*	*%*	
Surrogate: p-Terphenyl-d14			*60-120 %*	*105*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

PZ-18-20180912

18I0183-04 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270D-SIM — Sampled: 09/12/2018 18:07

Instrument: NT8 Analyst: JZ — Analyzed: 25-Sep-2018 22:22

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq)
Preparation Batch: BGI0378 — Sample Size: 500 mL
Prepared: 18-Sep-2018 — Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Benzo(a)anthracene	56-55-3	1	0.10	ND	ug/L	U
Chrysene	218-01-9	1	0.10	ND	ug/L	U
Benzofluoranthenes, Total		1	0.20	ND	ug/L	U
Benzo(a)pyrene	50-32-8	1	0.10	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.10	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	1	0.10	ND	ug/L	U
Surrogate: 2-Methylnaphthalene-d10			*31-120 %*	*58.3*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14			*10-125 %*	*67.3*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

PZ-18-20180912

18I0183-04 (Water)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 09/12/2018 18:07

Instrument: FID3 Analyst: VTS — Analyzed: 28-Sep-2018 22:49

Sample Preparation:	Preparation Method: EPA 3510C SepF	
	Preparation Batch: BGI0381	Sample Size: 500 mL
	Prepared: 18-Sep-2018	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Silica Gel	
	Cleanup Batch: CGI0214	Initial Volume: 1 mL
	Cleaned: 26-Sep-2018	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Sulfuric Acid	
	Cleanup Batch: CGI0213	Initial Volume: 1 mL
	Cleaned: 26-Sep-2018	Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)		1	100	ND	ug/L	U
Motor Oil Range Organics (C24-C38)		1	200	ND	ug/L	U
Creosote Range Organics (C12-C22)	8001-58-9	1	200	ND	ug/L	U
Surrogate: o-Terphenyl			*50-150 %*	*80.0*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

PZ-18-20180912

18I0183-04 (Water)

Phenols

Method: EPA 8041A — Sampled: 09/12/2018 18:07

Instrument: ECD8 Analyst: YZ — Analyzed: 27-Sep-2018 14:12

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BGI0380 Sample Size: 500 mL
Prepared: 18-Sep-2018 Final Volume: 50 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Pentachlorophenol	87-86-5	1	0.25	ND	ug/L	U
Surrogate: 2,4,6-Tribromophenol			*26-120 %*	*97.9*	*%*	
Surrogate: 2,4,6-Tribromophenol [2C]			*26-120 %*	*82.4*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

PZ-17-20180912

18I0183-05 (Water)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 09/12/2018 16:45

Instrument: NT3 Analyst: PC — Analyzed: 19-Sep-2018 16:36

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGI0496 Sample Size: 10 mL
Prepared: 19-Sep-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)		1	100	ND	ug/L	U
Surrogate: Toluene-d8			*80-120 %*	*95.7*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*101*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

PZ-17-20180912

18I0183-05 (Water)

Semivolatile Organic Compounds

Method: EPA 8270D — Sampled: 09/12/2018 16:45

Instrument: NT12 Analyst: JZ — Analyzed: 21-Sep-2018 20:30

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BGI0351 — Sample Size: 500 mL
Prepared: 17-Sep-2018 — Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	1.0	ND	ug/L	U
Acenaphthylene	208-96-8	1	1.0	ND	ug/L	U
Acenaphthene	83-32-9	1	1.0	**1.0**	ug/L	
2-Methylnaphthalene	91-57-6	1	1.0	ND	ug/L	U
Dibenzofuran	132-64-9	1	1.0	ND	ug/L	U
Fluorene	86-73-7	1	1.0	ND	ug/L	U
Pentachlorophenol	87-86-5	1	10.0	ND	ug/L	U
Phenanthrene	85-01-8	1	1.0	ND	ug/L	U
Anthracene	120-12-7	1	1.0	ND	ug/L	U
Carbazole	86-74-8	1	1.0	ND	ug/L	U
Fluoranthene	206-44-0	1	1.0	ND	ug/L	U
Pyrene	129-00-0	1	1.0	ND	ug/L	U
Benzo(a)anthracene	56-55-3	1	1.0	ND	ug/L	U
Chrysene	218-01-9	1	1.0	ND	ug/L	U
Benzo(a)pyrene	50-32-8	1	1.0	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	1.0	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	1	1.0	ND	ug/L	U
Benzo(g,h,i)perylene	191-24-2	1	1.0	ND	ug/L	U
1-Methylnaphthalene	90-12-0	1	1.0	ND	ug/L	U
Surrogate: 2-Fluorobiphenyl			*54.4-120 %*	*88.9*	*%*	
Surrogate: 2,4,6-Tribromophenol			*49.3-128 %*	*108*	*%*	
Surrogate: p-Terphenyl-d14			*60-120 %*	*113*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

PZ-17-20180912

18I0183-05 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270D-SIM — Sampled: 09/12/2018 16:45

Instrument: NT8 Analyst: JZ — Analyzed: 25-Sep-2018 22:48

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq)
Preparation Batch: BGI0378 — Sample Size: 500 mL
Prepared: 18-Sep-2018 — Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Benzo(a)anthracene	56-55-3	1	0.10	ND	ug/L	U
Chrysene	218-01-9	1	0.10	ND	ug/L	U
Benzofluoranthenes, Total		1	0.20	ND	ug/L	U
Benzo(a)pyrene	50-32-8	1	0.10	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.10	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	1	0.10	ND	ug/L	U
Surrogate: 2-Methylnaphthalene-d10			*31-120 %*	*52.2*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14			*10-125 %*	*61.8*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

PZ-17-20180912

18I0183-05 (Water)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 09/12/2018 16:45

Instrument: FID3 Analyst: VTS — Analyzed: 28-Sep-2018 23:09

Sample Preparation:	Preparation Method: EPA 3510C SepF	
	Preparation Batch: BGI0381	Sample Size: 500 mL
	Prepared: 18-Sep-2018	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Silica Gel	
	Cleanup Batch: CGI0214	Initial Volume: 1 mL
	Cleaned: 26-Sep-2018	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Sulfuric Acid	
	Cleanup Batch: CGI0213	Initial Volume: 1 mL
	Cleaned: 26-Sep-2018	Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)		1	100	ND	ug/L	U
Motor Oil Range Organics (C24-C38)		1	200	ND	ug/L	U
Creosote Range Organics (C12-C22)	8001-58-9	1	200	**374**	ug/L	
HC ID: CRO						
Surrogate: o-Terphenyl			*50-150 %*	*84.2*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

PZ-17-20180912

18I0183-05 (Water)

Phenols

Method: EPA 8041A — Sampled: 09/12/2018 16:45

Instrument: ECD8 Analyst: YZ — Analyzed: 27-Sep-2018 14:30

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BGI0380 Sample Size: 500 mL
Prepared: 18-Sep-2018 Final Volume: 50 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Pentachlorophenol	87-86-5	1	0.25	ND	ug/L	U
Surrogate: 2,4,6-Tribromophenol			*26-120 %*	*126*	*%*	*
Surrogate: 2,4,6-Tribromophenol [2C]			*26-120 %*	*99.0*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

CW-13-20180912

18I0183-06 (Water)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 09/12/2018 13:31

Instrument: NT3 Analyst: PC — Analyzed: 19-Sep-2018 17:02

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGI0496 Sample Size: 10 mL
Prepared: 19-Sep-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)		1	100	ND	ug/L	U
Surrogate: Toluene-d8			*80-120 %*	*95.3*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*101*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

CW-13-20180912

18I0183-06 (Water)

Semivolatile Organic Compounds

Method: EPA 8270D — Sampled: 09/12/2018 13:31

Instrument: NT12 Analyst: JZ — Analyzed: 21-Sep-2018 21:04

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BGI0351 — Sample Size: 500 mL
Prepared: 17-Sep-2018 — Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	1.0	ND	ug/L	U
Acenaphthylene	208-96-8	1	1.0	ND	ug/L	U
Acenaphthene	83-32-9	1	1.0	ND	ug/L	U
2-Methylnaphthalene	91-57-6	1	1.0	ND	ug/L	U
Dibenzofuran	132-64-9	1	1.0	ND	ug/L	U
Fluorene	86-73-7	1	1.0	ND	ug/L	U
Pentachlorophenol	87-86-5	1	10.0	ND	ug/L	U
Phenanthrene	85-01-8	1	1.0	ND	ug/L	U
Anthracene	120-12-7	1	1.0	ND	ug/L	U
Carbazole	86-74-8	1	1.0	ND	ug/L	U
Fluoranthene	206-44-0	1	1.0	ND	ug/L	U
Pyrene	129-00-0	1	1.0	ND	ug/L	U
Benzo(a)anthracene	56-55-3	1	1.0	ND	ug/L	U
Chrysene	218-01-9	1	1.0	ND	ug/L	U
Benzo(a)pyrene	50-32-8	1	1.0	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	1.0	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	1	1.0	ND	ug/L	U
Benzo(g,h,i)perylene	191-24-2	1	1.0	ND	ug/L	U
1-Methylnaphthalene	90-12-0	1	1.0	ND	ug/L	U
Surrogate: 2-Fluorobiphenyl			*54.4-120 %*	*84.0*	*%*	
Surrogate: 2,4,6-Tribromophenol			*49.3-128 %*	*94.6*	*%*	
Surrogate: p-Terphenyl-d14			*60-120 %*	*111*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

CW-13-20180912

18I0183-06 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270D-SIM — Sampled: 09/12/2018 13:31

Instrument: NT8 Analyst: JZ — Analyzed: 25-Sep-2018 23:15

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq)
Preparation Batch: BGI0378 — Sample Size: 500 mL
Prepared: 18-Sep-2018 — Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Benzo(a)anthracene	56-55-3	1	0.10	ND	ug/L	U
Chrysene	218-01-9	1	0.10	ND	ug/L	U
Benzofluoranthenes, Total		1	0.20	ND	ug/L	U
Benzo(a)pyrene	50-32-8	1	0.10	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.10	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	1	0.10	ND	ug/L	U
Surrogate: 2-Methylnaphthalene-d10			*31-120 %*	*60.2*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14			*10-125 %*	*72.4*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

CW-13-20180912

18I0183-06 (Water)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 09/12/2018 13:31

Instrument: FID3 Analyst: VTS — Analyzed: 28-Sep-2018 23:28

Sample Preparation:	Preparation Method: EPA 3510C SepF	
	Preparation Batch: BGI0381	Sample Size: 500 mL
	Prepared: 18-Sep-2018	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Silica Gel	
	Cleanup Batch: CGI0214	Initial Volume: 1 mL
	Cleaned: 26-Sep-2018	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Sulfuric Acid	
	Cleanup Batch: CGI0213	Initial Volume: 1 mL
	Cleaned: 26-Sep-2018	Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)		1	100	ND	ug/L	U
Motor Oil Range Organics (C24-C38)		1	200	ND	ug/L	U
Creosote Range Organics (C12-C22)	8001-58-9	1	200	ND	ug/L	U
Surrogate: o-Terphenyl			*50-150 %*	*70.9*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

CW-13-20180912

18I0183-06 (Water)

Phenols

Method: EPA 8041A — Sampled: 09/12/2018 13:31

Instrument: ECD8 Analyst: YZ — Analyzed: 27-Sep-2018 14:48

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BGI0380 Sample Size: 500 mL
Prepared: 18-Sep-2018 Final Volume: 50 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Pentachlorophenol	87-86-5	1	0.25	ND	ug/L	U
Surrogate: 2,4,6-Tribromophenol			*26-120 %*	*100*	*%*	
Surrogate: 2,4,6-Tribromophenol [2C]			*26-120 %*	*84.7*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

MW-05D-20180912

18I0183-07 (Water)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 09/12/2018 15:15

Instrument: NT3 Analyst: PC — Analyzed: 19-Sep-2018 17:28

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGI0496 Sample Size: 10 mL
Prepared: 19-Sep-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)		1	100	ND	ug/L	U
Surrogate: Toluene-d8			*80-120 %*	*95.6*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*104*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

MW-05D-20180912

18I0183-07 (Water)

Semivolatile Organic Compounds

Method: EPA 8270D — Sampled: 09/12/2018 15:15

Instrument: NT12 Analyst: JZ — Analyzed: 21-Sep-2018 21:38

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BGI0351 — Sample Size: 500 mL
Prepared: 17-Sep-2018 — Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	1.0	ND	ug/L	U
Acenaphthylene	208-96-8	1	1.0	ND	ug/L	U
Acenaphthene	83-32-9	1	1.0	**4.6**	ug/L	
2-Methylnaphthalene	91-57-6	1	1.0	ND	ug/L	U
Dibenzofuran	132-64-9	1	1.0	ND	ug/L	U
Fluorene	86-73-7	1	1.0	ND	ug/L	U
Pentachlorophenol	87-86-5	1	10.0	ND	ug/L	U
Phenanthrene	85-01-8	1	1.0	ND	ug/L	U
Anthracene	120-12-7	1	1.0	ND	ug/L	U
Carbazole	86-74-8	1	1.0	**1.6**	ug/L	
Fluoranthene	206-44-0	1	1.0	ND	ug/L	U
Pyrene	129-00-0	1	1.0	ND	ug/L	U
Benzo(a)anthracene	56-55-3	1	1.0	ND	ug/L	U
Chrysene	218-01-9	1	1.0	ND	ug/L	U
Benzo(a)pyrene	50-32-8	1	1.0	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	1.0	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	1	1.0	ND	ug/L	U
Benzo(g,h,i)perylene	191-24-2	1	1.0	ND	ug/L	U
1-Methylnaphthalene	90-12-0	1	1.0	ND	ug/L	U
Surrogate: 2-Fluorobiphenyl			*54.4-120 %*	*74.4*	*%*	
Surrogate: 2,4,6-Tribromophenol			*49.3-128 %*	*86.5*	*%*	
Surrogate: p-Terphenyl-d14			*60-120 %*	*95.4*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

MW-05D-20180912

18I0183-07 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270D-SIM — Sampled: 09/12/2018 15:15

Instrument: NT8 Analyst: JZ — Analyzed: 25-Sep-2018 23:42

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq)
Preparation Batch: BGI0378 — Sample Size: 500 mL
Prepared: 18-Sep-2018 — Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Benzo(a)anthracene	56-55-3	1	0.10	ND	ug/L	U
Chrysene	218-01-9	1	0.10	ND	ug/L	U
Benzofluoranthenes, Total		1	0.20	ND	ug/L	U
Benzo(a)pyrene	50-32-8	1	0.10	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.10	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	1	0.10	ND	ug/L	U
Surrogate: 2-Methylnaphthalene-d10			*31-120 %*	*55.6*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14			*10-125 %*	*76.3*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

MW-05D-20180912

18I0183-07 (Water)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 09/12/2018 15:15

Instrument: FID3 Analyst: VTS — Analyzed: 28-Sep-2018 23:47

Sample Preparation:	Preparation Method: EPA 3510C SepF	
	Preparation Batch: BGI0381	Sample Size: 500 mL
	Prepared: 18-Sep-2018	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Silica Gel	
	Cleanup Batch: CGI0214	Initial Volume: 1 mL
	Cleaned: 26-Sep-2018	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Sulfuric Acid	
	Cleanup Batch: CGI0213	Initial Volume: 1 mL
	Cleaned: 26-Sep-2018	Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)		1	100	ND	ug/L	U
Motor Oil Range Organics (C24-C38)		1	200	ND	ug/L	U
Creosote Range Organics (C12-C22)	8001-58-9	1	200	ND	ug/L	U
Surrogate: o-Terphenyl			*50-150 %*	*93.7*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

MW-05D-20180912

18I0183-07 (Water)

Phenols

Method: EPA 8041A — Sampled: 09/12/2018 15:15

Instrument: ECD8 Analyst: YZ — Analyzed: 27-Sep-2018 15:06

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BGI0380 Sample Size: 500 mL
Prepared: 18-Sep-2018 Final Volume: 50 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Pentachlorophenol	87-86-5	1	0.25	ND	ug/L	U
Surrogate: 2,4,6-Tribromophenol			*26-120 %*	*124*	*%*	*
Surrogate: 2,4,6-Tribromophenol [2C]			*26-120 %*	*103*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

LW-3-20180912

18I0183-08 (Water)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 09/12/2018 16:37

Instrument: NT3 Analyst: PC — Analyzed: 19-Sep-2018 17:55

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGI0496 Sample Size: 10 mL
Prepared: 19-Sep-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)		1	100	**230**	ug/L	
HC ID: GRO						
Surrogate: Toluene-d8			*80-120 %*	*94.9*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*106*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

LW-3-20180912

18I0183-08 (Water)

Semivolatile Organic Compounds

Method: EPA 8270D — Sampled: 09/12/2018 16:37

Instrument: NT12 Analyst: JZ — Analyzed: 21-Sep-2018 22:12

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BGI0351 — Sample Size: 500 mL
Prepared: 17-Sep-2018 — Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	1.0	ND	ug/L	U
Acenaphthylene	208-96-8	1	1.0	ND	ug/L	U
Acenaphthene	83-32-9	1	1.0	ND	ug/L	U
2-Methylnaphthalene	91-57-6	1	1.0	ND	ug/L	U
Dibenzofuran	132-64-9	1	1.0	ND	ug/L	U
Fluorene	86-73-7	1	1.0	ND	ug/L	U
Pentachlorophenol	87-86-5	1	10.0	ND	ug/L	U
Phenanthrene	85-01-8	1	1.0	ND	ug/L	U
Anthracene	120-12-7	1	1.0	ND	ug/L	U
Carbazole	86-74-8	1	1.0	ND	ug/L	U
Fluoranthene	206-44-0	1	1.0	ND	ug/L	U
Pyrene	129-00-0	1	1.0	ND	ug/L	U
Benzo(a)anthracene	56-55-3	1	1.0	ND	ug/L	U
Chrysene	218-01-9	1	1.0	ND	ug/L	U
Benzo(a)pyrene	50-32-8	1	1.0	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	1.0	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	1	1.0	ND	ug/L	U
Benzo(g,h,i)perylene	191-24-2	1	1.0	ND	ug/L	U
1-Methylnaphthalene	90-12-0	1	1.0	ND	ug/L	U
Surrogate: 2-Fluorobiphenyl			*54.4-120 %*	*71.7*	*%*	
Surrogate: 2,4,6-Tribromophenol			*49.3-128 %*	*89.8*	*%*	
Surrogate: p-Terphenyl-d14			*60-120 %*	*87.8*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

LW-3-20180912

18I0183-08 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270D-SIM — Sampled: 09/12/2018 16:37

Instrument: NT8 Analyst: JZ — Analyzed: 26-Sep-2018 00:09

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq)
Preparation Batch: BGI0378 — Sample Size: 500 mL
Prepared: 18-Sep-2018 — Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Benzo(a)anthracene	56-55-3	1	0.10	ND	ug/L	U
Chrysene	218-01-9	1	0.10	ND	ug/L	U
Benzofluoranthenes, Total		1	0.20	ND	ug/L	U
Benzo(a)pyrene	50-32-8	1	0.10	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.10	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	1	0.10	ND	ug/L	U
Surrogate: 2-Methylnaphthalene-d10			*31-120 %*	*48.8*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14			*10-125 %*	*17.8*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

LW-3-20180912

18I0183-08 (Water)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 09/12/2018 16:37

Instrument: FID3 Analyst: VTS — Analyzed: 29-Sep-2018 00:06

Sample Preparation:	Preparation Method: EPA 3510C SepF	
	Preparation Batch: BGI0381	Sample Size: 500 mL
	Prepared: 18-Sep-2018	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Silica Gel	
	Cleanup Batch: CGI0214	Initial Volume: 1 mL
	Cleaned: 26-Sep-2018	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Sulfuric Acid	
	Cleanup Batch: CGI0213	Initial Volume: 1 mL
	Cleaned: 26-Sep-2018	Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)		1	100	**200**	ug/L	
HC ID: DRO						
Motor Oil Range Organics (C24-C38)		1	200	ND	ug/L	U
Creosote Range Organics (C12-C22)	8001-58-9	1	200	**1080**	ug/L	
HC ID: CRO						
Surrogate: o-Terphenyl			*50-150 %*	*88.6*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

LW-3-20180912

18I0183-08 (Water)

Phenols

Method: EPA 8041A — Sampled: 09/12/2018 16:37

Instrument: ECD8 Analyst: YZ — Analyzed: 27-Sep-2018 15:24

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BGI0380 Sample Size: 500 mL
Prepared: 18-Sep-2018 Final Volume: 50 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Pentachlorophenol	87-86-5	1	0.25	ND	ug/L	U
Surrogate: 2,4,6-Tribromophenol			*26-120 %*	*110*	*%*	
Surrogate: 2,4,6-Tribromophenol [2C]			*26-120 %*	*93.1*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

LW-4R-20180912

18I0183-09 (Water)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 09/12/2018 17:50

Instrument: NT3 Analyst: PC — Analyzed: 19-Sep-2018 18:21

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGI0496 Sample Size: 10 mL
Prepared: 19-Sep-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)		1	100	ND	ug/L	U
Surrogate: Toluene-d8			*80-120 %*	*93.0*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*106*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

LW-4R-20180912

18I0183-09 (Water)

Semivolatile Organic Compounds

Method: EPA 8270D — Sampled: 09/12/2018 17:50

Instrument: NT12 Analyst: JZ — Analyzed: 21-Sep-2018 22:46

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BGI0351 — Sample Size: 500 mL
Prepared: 17-Sep-2018 — Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	1.0	ND	ug/L	U
Acenaphthylene	208-96-8	1	1.0	ND	ug/L	U
Acenaphthene	83-32-9	1	1.0	ND	ug/L	U
2-Methylnaphthalene	91-57-6	1	1.0	ND	ug/L	U
Dibenzofuran	132-64-9	1	1.0	ND	ug/L	U
Fluorene	86-73-7	1	1.0	ND	ug/L	U
Pentachlorophenol	87-86-5	1	10.0	ND	ug/L	U
Phenanthrene	85-01-8	1	1.0	ND	ug/L	U
Anthracene	120-12-7	1	1.0	ND	ug/L	U
Carbazole	86-74-8	1	1.0	ND	ug/L	U
Fluoranthene	206-44-0	1	1.0	ND	ug/L	U
Pyrene	129-00-0	1	1.0	ND	ug/L	U
Benzo(a)anthracene	56-55-3	1	1.0	ND	ug/L	U
Chrysene	218-01-9	1	1.0	ND	ug/L	U
Benzo(a)pyrene	50-32-8	1	1.0	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	1.0	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	1	1.0	ND	ug/L	U
Benzo(g,h,i)perylene	191-24-2	1	1.0	ND	ug/L	U
1-Methylnaphthalene	90-12-0	1	1.0	ND	ug/L	U
Surrogate: 2-Fluorobiphenyl			*54.4-120 %*	*80.7*	*%*	
Surrogate: 2,4,6-Tribromophenol			*49.3-128 %*	*98.0*	*%*	
Surrogate: p-Terphenyl-d14			*60-120 %*	*106*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

LW-4R-20180912

18I0183-09 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270D-SIM — Sampled: 09/12/2018 17:50

Instrument: NT8 Analyst: JZ — Analyzed: 25-Sep-2018 18:46

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq)
Preparation Batch: BGI0378 — Sample Size: 500 mL
Prepared: 18-Sep-2018 — Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Benzo(a)anthracene	56-55-3	1	0.10	ND	ug/L	U
Chrysene	218-01-9	1	0.10	ND	ug/L	U
Benzofluoranthenes, Total		1	0.20	ND	ug/L	U
Benzo(a)pyrene	50-32-8	1	0.10	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.10	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	1	0.10	ND	ug/L	U
Surrogate: 2-Methylnaphthalene-d10			*31-120 %*	*73.6*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14			*10-125 %*	*91.6*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

LW-4R-20180912

18I0183-09 (Water)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 09/12/2018 17:50

Instrument: FID3 Analyst: VTS — Analyzed: 28-Sep-2018 18:38

Sample Preparation:	Preparation Method: EPA 3510C SepF	
	Preparation Batch: BGI0381	Sample Size: 500 mL
	Prepared: 18-Sep-2018	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Silica Gel	
	Cleanup Batch: CGI0214	Initial Volume: 1 mL
	Cleaned: 26-Sep-2018	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Sulfuric Acid	
	Cleanup Batch: CGI0213	Initial Volume: 1 mL
	Cleaned: 26-Sep-2018	Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)		1	100	ND	ug/L	U
Motor Oil Range Organics (C24-C38)		1	200	ND	ug/L	U
Creosote Range Organics (C12-C22)	8001-58-9	1	200	ND	ug/L	U
Surrogate: o-Terphenyl			*50-150 %*	*88.0*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

LW-4R-20180912

18I0183-09 (Water)

Phenols

Method: EPA 8041A — Sampled: 09/12/2018 17:50

Instrument: ECD8 Analyst: YZ — Analyzed: 27-Sep-2018 15:41

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BGI0380 Sample Size: 500 mL
Prepared: 18-Sep-2018 Final Volume: 50 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Pentachlorophenol	87-86-5	1	0.25	ND	ug/L	U
Surrogate: 2,4,6-Tribromophenol			*26-120 %*	*99.6*	*%*	
Surrogate: 2,4,6-Tribromophenol [2C]			*26-120 %*	*82.8*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

MW-02S-20180913

18I0183-10 (Water)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 09/13/2018 09:36
Instrument: NT3 Analyst: PC — Analyzed: 19-Sep-2018 18:47

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGI0496 — Sample Size: 10 mL
Prepared: 19-Sep-2018 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)		1	100	ND	ug/L	U
Surrogate: Toluene-d8			*80-120 %*	*96.4*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*107*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

MW-02S-20180913

18I0183-10 (Water)

Semivolatile Organic Compounds

Method: EPA 8270D — Sampled: 09/13/2018 09:36

Instrument: NT12 Analyst: JZ — Analyzed: 21-Sep-2018 23:20

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BGI0351 — Sample Size: 500 mL
Prepared: 17-Sep-2018 — Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	1.0	ND	ug/L	U
Acenaphthylene	208-96-8	1	1.0	ND	ug/L	U
Acenaphthene	83-32-9	1	1.0	**1.3**	ug/L	
2-Methylnaphthalene	91-57-6	1	1.0	ND	ug/L	U
Dibenzofuran	132-64-9	1	1.0	ND	ug/L	U
Fluorene	86-73-7	1	1.0	ND	ug/L	U
Pentachlorophenol	87-86-5	1	10.0	ND	ug/L	U
Phenanthrene	85-01-8	1	1.0	ND	ug/L	U
Anthracene	120-12-7	1	1.0	ND	ug/L	U
Carbazole	86-74-8	1	1.0	ND	ug/L	U
Fluoranthene	206-44-0	1	1.0	ND	ug/L	U
Pyrene	129-00-0	1	1.0	ND	ug/L	U
Benzo(a)anthracene	56-55-3	1	1.0	ND	ug/L	U
Chrysene	218-01-9	1	1.0	ND	ug/L	U
Benzo(a)pyrene	50-32-8	1	1.0	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	1.0	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	1	1.0	ND	ug/L	U
Benzo(g,h,i)perylene	191-24-2	1	1.0	ND	ug/L	U
1-Methylnaphthalene	90-12-0	1	1.0	ND	ug/L	U
Surrogate: 2-Fluorobiphenyl			*54.4-120 %*	*89.3*	*%*	
Surrogate: 2,4,6-Tribromophenol			*49.3-128 %*	*107*	*%*	
Surrogate: p-Terphenyl-d14			*60-120 %*	*107*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

MW-02S-20180913

18I0183-10 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270D-SIM — Sampled: 09/13/2018 09:36

Instrument: NT8 Analyst: JZ — Analyzed: 25-Sep-2018 19:13

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq)
Preparation Batch: BGI0378 — Sample Size: 500 mL
Prepared: 18-Sep-2018 — Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Benzo(a)anthracene	56-55-3	1	0.10	ND	ug/L	U
Chrysene	218-01-9	1	0.10	ND	ug/L	U
Benzofluoranthenes, Total		1	0.20	ND	ug/L	U
Benzo(a)pyrene	50-32-8	1	0.10	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.10	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	1	0.10	ND	ug/L	U
Surrogate: 2-Methylnaphthalene-d10			*31-120 %*	*63.6*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14			*10-125 %*	*54.7*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

MW-02S-20180913

18I0183-10 (Water)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 09/13/2018 09:36
Instrument: FID3 Analyst: VTS — Analyzed: 28-Sep-2018 18:57

Sample Preparation:	Preparation Method: EPA 3510C SepF	
	Preparation Batch: BGI0381	Sample Size: 500 mL
	Prepared: 18-Sep-2018	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Silica Gel	
	Cleanup Batch: CGI0214	Initial Volume: 1 mL
	Cleaned: 26-Sep-2018	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Sulfuric Acid	
	Cleanup Batch: CGI0213	Initial Volume: 1 mL
	Cleaned: 26-Sep-2018	Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)		1	100	**311**	ug/L	
HC ID: DRO						
Motor Oil Range Organics (C24-C38)		1	200	ND	ug/L	U
Creosote Range Organics (C12-C22)	8001-58-9	1	200	**1930**	ug/L	
HC ID: CRO						
Surrogate: o-Terphenyl			*50-150 %*	*84.8*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

MW-02S-20180913

18I0183-10 (Water)

Phenols

Method: EPA 8041A — Sampled: 09/13/2018 09:36

Instrument: ECD8 Analyst: YZ — Analyzed: 27-Sep-2018 15:59

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BGI0380 Sample Size: 500 mL
Prepared: 18-Sep-2018 Final Volume: 50 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Pentachlorophenol	87-86-5	1	0.25	ND	ug/L	U
Surrogate: 2,4,6-Tribromophenol			*26-120 %*	*107*	*%*	
Surrogate: 2,4,6-Tribromophenol [2C]			*26-120 %*	*87.3*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

MW-02D-20180913

18I0183-11 (Water)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 09/13/2018 10:21

Instrument: NT3 Analyst: PC — Analyzed: 19-Sep-2018 19:13

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGI0496 Sample Size: 10 mL
Prepared: 19-Sep-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)		1	100	**131**	ug/L	
HC ID: GRO						
Surrogate: Toluene-d8			*80-120 %*	*95.7*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*104*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

MW-02D-20180913

18I0183-11 (Water)

Semivolatile Organic Compounds

Method: EPA 8270D — Sampled: 09/13/2018 10:21

Instrument: NT12 Analyst: JZ — Analyzed: 21-Sep-2018 23:54

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BGI0351 — Sample Size: 500 mL
Prepared: 17-Sep-2018 — Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	1.0	**37.6**	ug/L	
Acenaphthylene	208-96-8	1	1.0	ND	ug/L	U
Acenaphthene	83-32-9	1	1.0	**12.7**	ug/L	
2-Methylnaphthalene	91-57-6	1	1.0	**6.7**	ug/L	
Dibenzofuran	132-64-9	1	1.0	**3.8**	ug/L	
Fluorene	86-73-7	1	1.0	**4.1**	ug/L	
Pentachlorophenol	87-86-5	1	10.0	ND	ug/L	U
Phenanthrene	85-01-8	1	1.0	**4.9**	ug/L	
Anthracene	120-12-7	1	1.0	ND	ug/L	U
Carbazole	86-74-8	1	1.0	**2.8**	ug/L	
Fluoranthene	206-44-0	1	1.0	ND	ug/L	U
Pyrene	129-00-0	1	1.0	ND	ug/L	U
Benzo(a)anthracene	56-55-3	1	1.0	ND	ug/L	U
Chrysene	218-01-9	1	1.0	ND	ug/L	U
Benzo(a)pyrene	50-32-8	1	1.0	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	1.0	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	1	1.0	ND	ug/L	U
Benzo(g,h,i)perylene	191-24-2	1	1.0	ND	ug/L	U
1-Methylnaphthalene	90-12-0	1	1.0	**7.7**	ug/L	
Surrogate: 2-Fluorobiphenyl			*54.4-120 %*	*80.3*	*%*	
Surrogate: 2,4,6-Tribromophenol			*49.3-128 %*	*95.6*	*%*	
Surrogate: p-Terphenyl-d14			*60-120 %*	*98.3*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

MW-02D-20180913

18I0183-11 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270D-SIM — Sampled: 09/13/2018 10:21

Instrument: NT8 Analyst: JZ — Analyzed: 25-Sep-2018 19:40

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq)
Preparation Batch: BGI0378 — Sample Size: 500 mL
Prepared: 18-Sep-2018 — Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Benzo(a)anthracene	56-55-3	1	0.10	ND	ug/L	U
Chrysene	218-01-9	1	0.10	ND	ug/L	U
Benzofluoranthenes, Total		1	0.20	ND	ug/L	U
Benzo(a)pyrene	50-32-8	1	0.10	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.10	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	1	0.10	ND	ug/L	U
Surrogate: 2-Methylnaphthalene-d10			*31-120 %*	*66.8*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14			*10-125 %*	*94.5*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

MW-02D-20180913

18I0183-11 (Water)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 09/13/2018 10:21

Instrument: FID3 Analyst: VTS — Analyzed: 28-Sep-2018 19:16

Sample Preparation:	Preparation Method: EPA 3510C SepF	
	Preparation Batch: BGI0381	Sample Size: 500 mL
	Prepared: 18-Sep-2018	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Silica Gel	
	Cleanup Batch: CGI0214	Initial Volume: 1 mL
	Cleaned: 26-Sep-2018	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Sulfuric Acid	
	Cleanup Batch: CGI0213	Initial Volume: 1 mL
	Cleaned: 26-Sep-2018	Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)		1	100	**109**	ug/L	
HC ID: DRO						
Motor Oil Range Organics (C24-C38)		1	200	ND	ug/L	U
Creosote Range Organics (C12-C22)	8001-58-9	1	200	**694**	ug/L	
HC ID: CREOSOTE						
Surrogate: o-Terphenyl			*50-150 %*	*57.3*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

MW-02D-20180913

18I0183-11 (Water)

Phenols

Method: EPA 8041A — Sampled: 09/13/2018 10:21

Instrument: ECD8 Analyst: YZ — Analyzed: 27-Sep-2018 16:35

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BGI0380 Sample Size: 500 mL
Prepared: 18-Sep-2018 Final Volume: 50 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Pentachlorophenol	87-86-5	1	0.25	ND	ug/L	U
Surrogate: 2,4,6-Tribromophenol			*26-120 %*	*92.4*	*%*	
Surrogate: 2,4,6-Tribromophenol [2C]			*26-120 %*	*77.3*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

PZ-19-20180913

18I0183-12 (Water)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 09/13/2018 12:11

Instrument: NT3 Analyst: PC — Analyzed: 19-Sep-2018 19:39

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGI0496 Sample Size: 10 mL
Prepared: 19-Sep-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)		1	100	ND	ug/L	U
Surrogate: Toluene-d8			*80-120 %*	*96.0*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*105*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

PZ-19-20180913

18I0183-12 (Water)

Semivolatile Organic Compounds

Method: EPA 8270D — Sampled: 09/13/2018 12:11

Instrument: NT12 Analyst: JZ — Analyzed: 22-Sep-2018 00:28

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BGI0351 — Sample Size: 500 mL
Prepared: 17-Sep-2018 — Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	1.0	ND	ug/L	U
Acenaphthylene	208-96-8	1	1.0	ND	ug/L	U
Acenaphthene	83-32-9	1	1.0	ND	ug/L	U
2-Methylnaphthalene	91-57-6	1	1.0	ND	ug/L	U
Dibenzofuran	132-64-9	1	1.0	ND	ug/L	U
Fluorene	86-73-7	1	1.0	ND	ug/L	U
Pentachlorophenol	87-86-5	1	10.0	ND	ug/L	U
Phenanthrene	85-01-8	1	1.0	ND	ug/L	U
Anthracene	120-12-7	1	1.0	ND	ug/L	U
Carbazole	86-74-8	1	1.0	ND	ug/L	U
Fluoranthene	206-44-0	1	1.0	ND	ug/L	U
Pyrene	129-00-0	1	1.0	ND	ug/L	U
Benzo(a)anthracene	56-55-3	1	1.0	ND	ug/L	U
Chrysene	218-01-9	1	1.0	ND	ug/L	U
Benzo(a)pyrene	50-32-8	1	1.0	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	1.0	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	1	1.0	ND	ug/L	U
Benzo(g,h,i)perylene	191-24-2	1	1.0	ND	ug/L	U
1-Methylnaphthalene	90-12-0	1	1.0	ND	ug/L	U
Surrogate: 2-Fluorobiphenyl			*54.4-120 %*	*67.4*	*%*	
Surrogate: 2,4,6-Tribromophenol			*49.3-128 %*	*79.2*	*%*	
Surrogate: p-Terphenyl-d14			*60-120 %*	*86.0*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

PZ-19-20180913

18I0183-12 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270D-SIM — Sampled: 09/13/2018 12:11

Instrument: NT8 Analyst: JZ — Analyzed: 25-Sep-2018 20:07

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq)
Preparation Batch: BGI0378 — Sample Size: 500 mL
Prepared: 18-Sep-2018 — Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Benzo(a)anthracene	56-55-3	1	0.10	ND	ug/L	U
Chrysene	218-01-9	1	0.10	ND	ug/L	U
Benzofluoranthenes, Total		1	0.20	ND	ug/L	U
Benzo(a)pyrene	50-32-8	1	0.10	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.10	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	1	0.10	ND	ug/L	U
Surrogate: 2-Methylnaphthalene-d10			*31-120 %*	*59.8*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14			*10-125 %*	*70.6*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

PZ-19-20180913

18I0183-12 (Water)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 09/13/2018 12:11

Instrument: FID3 Analyst: VTS — Analyzed: 28-Sep-2018 19:36

Sample Preparation:	Preparation Method: EPA 3510C SepF	
	Preparation Batch: BGI0381	Sample Size: 500 mL
	Prepared: 18-Sep-2018	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Silica Gel	
	Cleanup Batch: CGI0214	Initial Volume: 1 mL
	Cleaned: 26-Sep-2018	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Sulfuric Acid	
	Cleanup Batch: CGI0213	Initial Volume: 1 mL
	Cleaned: 26-Sep-2018	Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)		1	100	ND	ug/L	U
Motor Oil Range Organics (C24-C38)		1	200	ND	ug/L	U
Creosote Range Organics (C12-C22)	8001-58-9	1	200	ND	ug/L	U
Surrogate: o-Terphenyl			*50-150 %*	*80.1*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

PZ-19-20180913

18I0183-12 (Water)

Phenols

Method: EPA 8041A — Sampled: 09/13/2018 12:11

Instrument: ECD8 Analyst: YZ — Analyzed: 27-Sep-2018 16:53

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BGI0380 Sample Size: 500 mL
Prepared: 18-Sep-2018 Final Volume: 50 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Pentachlorophenol	87-86-5	1	0.25	ND	ug/L	U
Surrogate: 2,4,6-Tribromophenol			*26-120 %*	*104*	*%*	
Surrogate: 2,4,6-Tribromophenol [2C]			*26-120 %*	*85.5*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

PZ-12-20180912

18I0183-13 (Water)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 09/12/2018 10:54

Instrument: NT3 Analyst: PC — Analyzed: 19-Sep-2018 20:05

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGI0496 Sample Size: 10 mL
Prepared: 19-Sep-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)		1	100	ND	ug/L	U
Surrogate: Toluene-d8			*80-120 %*	*97.7*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*106*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

PZ-12-20180912

18I0183-13 (Water)

Semivolatile Organic Compounds

Method: EPA 8270D — Sampled: 09/12/2018 10:54

Instrument: NT12 Analyst: JZ — Analyzed: 22-Sep-2018 01:02

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BGI0351 — Sample Size: 500 mL
Prepared: 17-Sep-2018 — Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	1.0	ND	ug/L	U
Acenaphthylene	208-96-8	1	1.0	ND	ug/L	U
Acenaphthene	83-32-9	1	1.0	ND	ug/L	U
2-Methylnaphthalene	91-57-6	1	1.0	ND	ug/L	U
Dibenzofuran	132-64-9	1	1.0	ND	ug/L	U
Fluorene	86-73-7	1	1.0	ND	ug/L	U
Pentachlorophenol	87-86-5	1	10.0	ND	ug/L	U
Phenanthrene	85-01-8	1	1.0	ND	ug/L	U
Anthracene	120-12-7	1	1.0	ND	ug/L	U
Carbazole	86-74-8	1	1.0	ND	ug/L	U
Fluoranthene	206-44-0	1	1.0	ND	ug/L	U
Pyrene	129-00-0	1	1.0	ND	ug/L	U
Benzo(a)anthracene	56-55-3	1	1.0	ND	ug/L	U
Chrysene	218-01-9	1	1.0	ND	ug/L	U
Benzo(a)pyrene	50-32-8	1	1.0	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	1.0	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	1	1.0	ND	ug/L	U
Benzo(g,h,i)perylene	191-24-2	1	1.0	ND	ug/L	U
1-Methylnaphthalene	90-12-0	1	1.0	ND	ug/L	U
Surrogate: 2-Fluorobiphenyl			*54.4-120 %*	*87.5*	*%*	
Surrogate: 2,4,6-Tribromophenol			*49.3-128 %*	*102*	*%*	
Surrogate: p-Terphenyl-d14			*60-120 %*	*107*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

PZ-12-20180912

18I0183-13 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270D-SIM — Sampled: 09/12/2018 10:54

Instrument: NT8 Analyst: JZ — Analyzed: 25-Sep-2018 20:34

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq)
Preparation Batch: BGI0378 — Sample Size: 500 mL
Prepared: 18-Sep-2018 — Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Benzo(a)anthracene	56-55-3	1	0.10	ND	ug/L	U
Chrysene	218-01-9	1	0.10	ND	ug/L	U
Benzofluoranthenes, Total		1	0.20	ND	ug/L	U
Benzo(a)pyrene	50-32-8	1	0.10	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.10	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	1	0.10	ND	ug/L	U
Surrogate: 2-Methylnaphthalene-d10			*31-120 %*	*65.8*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14			*10-125 %*	*101*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

PZ-12-20180912

18I0183-13 (Water)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 09/12/2018 10:54

Instrument: FID3 Analyst: VTS — Analyzed: 28-Sep-2018 19:55

Sample Preparation:	Preparation Method: EPA 3510C SepF	
	Preparation Batch: BGI0381	Sample Size: 500 mL
	Prepared: 18-Sep-2018	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Silica Gel	
	Cleanup Batch: CGI0214	Initial Volume: 1 mL
	Cleaned: 26-Sep-2018	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Sulfuric Acid	
	Cleanup Batch: CGI0213	Initial Volume: 1 mL
	Cleaned: 26-Sep-2018	Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)		1	100	ND	ug/L	U
Motor Oil Range Organics (C24-C38)		1	200	ND	ug/L	U
Creosote Range Organics (C12-C22)	8001-58-9	1	200	ND	ug/L	U
Surrogate: o-Terphenyl			*50-150 %*	*73.6*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

PZ-12-20180912

18I0183-13 (Water)

Phenols

Method: EPA 8041A — Sampled: 09/12/2018 10:54

Instrument: ECD8 Analyst: YZ — Analyzed: 27-Sep-2018 17:11

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BGI0380 Sample Size: 500 mL
Prepared: 18-Sep-2018 Final Volume: 50 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Pentachlorophenol	87-86-5	1	0.25	ND	ug/L	U
Surrogate: 2,4,6-Tribromophenol			*26-120 %*	*115*	*%*	
Surrogate: 2,4,6-Tribromophenol [2C]			*26-120 %*	*94.6*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

PZ-13-20180912

18I0183-14 (Water)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 09/12/2018 10:55

Instrument: NT3 Analyst: PC — Analyzed: 19-Sep-2018 20:31

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGI0496 Sample Size: 10 mL
Prepared: 19-Sep-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)		1	100	ND	ug/L	U
Surrogate: Toluene-d8			*80-120 %*	*97.9*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*103*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

PZ-13-20180912

18I0183-14 (Water)

Semivolatile Organic Compounds

Method: EPA 8270D — Sampled: 09/12/2018 10:55

Instrument: NT12 Analyst: JZ — Analyzed: 22-Sep-2018 01:36

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BGI0351 — Sample Size: 500 mL
Prepared: 17-Sep-2018 — Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	1.0	ND	ug/L	U
Acenaphthylene	208-96-8	1	1.0	ND	ug/L	U
Acenaphthene	83-32-9	1	1.0	ND	ug/L	U
2-Methylnaphthalene	91-57-6	1	1.0	ND	ug/L	U
Dibenzofuran	132-64-9	1	1.0	ND	ug/L	U
Fluorene	86-73-7	1	1.0	ND	ug/L	U
Pentachlorophenol	87-86-5	1	10.0	ND	ug/L	U
Phenanthrene	85-01-8	1	1.0	ND	ug/L	U
Anthracene	120-12-7	1	1.0	ND	ug/L	U
Carbazole	86-74-8	1	1.0	ND	ug/L	U
Fluoranthene	206-44-0	1	1.0	ND	ug/L	U
Pyrene	129-00-0	1	1.0	ND	ug/L	U
Benzo(a)anthracene	56-55-3	1	1.0	ND	ug/L	U
Chrysene	218-01-9	1	1.0	ND	ug/L	U
Benzo(a)pyrene	50-32-8	1	1.0	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	1.0	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	1	1.0	ND	ug/L	U
Benzo(g,h,i)perylene	191-24-2	1	1.0	ND	ug/L	U
1-Methylnaphthalene	90-12-0	1	1.0	ND	ug/L	U
Surrogate: 2-Fluorobiphenyl			*54.4-120 %*	*72.3*	*%*	
Surrogate: 2,4,6-Tribromophenol			*49.3-128 %*	*82.0*	*%*	
Surrogate: p-Terphenyl-d14			*60-120 %*	*91.1*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

PZ-13-20180912

18I0183-14 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270D-SIM — Sampled: 09/12/2018 10:55

Instrument: NT8 Analyst: JZ — Analyzed: 25-Sep-2018 21:01

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq)
Preparation Batch: BGI0378 — Sample Size: 500 mL
Prepared: 18-Sep-2018 — Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Benzo(a)anthracene	56-55-3	1	0.10	ND	ug/L	U
Chrysene	218-01-9	1	0.10	ND	ug/L	U
Benzofluoranthenes, Total		1	0.20	ND	ug/L	U
Benzo(a)pyrene	50-32-8	1	0.10	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.10	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	1	0.10	ND	ug/L	U
Surrogate: 2-Methylnaphthalene-d10			*31-120 %*	*72.0*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14			*10-125 %*	*108*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

PZ-13-20180912

18I0183-14 (Water)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 09/12/2018 10:55
Instrument: FID3 Analyst: VTS — Analyzed: 28-Sep-2018 20:14

Sample Preparation:	Preparation Method: EPA 3510C SepF	
	Preparation Batch: BGI0381	Sample Size: 500 mL
	Prepared: 18-Sep-2018	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Silica Gel	
	Cleanup Batch: CGI0214	Initial Volume: 1 mL
	Cleaned: 26-Sep-2018	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Sulfuric Acid	
	Cleanup Batch: CGI0213	Initial Volume: 1 mL
	Cleaned: 26-Sep-2018	Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)		1	100	ND	ug/L	U
Motor Oil Range Organics (C24-C38)		1	200	ND	ug/L	U
Creosote Range Organics (C12-C22)	8001-58-9	1	200	ND	ug/L	U
Surrogate: o-Terphenyl			*50-150 %*	*86.0*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

PZ-13-20180912

18I0183-14 (Water)

Phenols

Method: EPA 8041A — Sampled: 09/12/2018 10:55

Instrument: ECD8 Analyst: YZ — Analyzed: 27-Sep-2018 17:29

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BGI0380 Sample Size: 500 mL
Prepared: 18-Sep-2018 Final Volume: 50 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Pentachlorophenol	87-86-5	1	0.25	ND	ug/L	U
Surrogate: 2,4,6-Tribromophenol			*26-120 %*	*112*	*%*	
Surrogate: 2,4,6-Tribromophenol [2C]			*26-120 %*	*91.5*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

MW-01D-20180913

18I0183-15 (Water)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 09/13/2018 13:35
Instrument: NT3 Analyst: PC — Analyzed: 19-Sep-2018 20:57

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGI0496 — Sample Size: 10 mL
Prepared: 19-Sep-2018 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)		1	100	ND	ug/L	U
Surrogate: Toluene-d8			*80-120 %*	*95.7*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*106*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

MW-01D-20180913

18I0183-15 (Water)

Semivolatile Organic Compounds

Method: EPA 8270D — Sampled: 09/13/2018 13:35

Instrument: NT12 Analyst: JZ — Analyzed: 22-Sep-2018 02:11

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BGI0351 — Sample Size: 500 mL
Prepared: 17-Sep-2018 — Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	1.0	**1.1**	ug/L	
Acenaphthylene	208-96-8	1	1.0	ND	ug/L	U
Acenaphthene	83-32-9	1	1.0	ND	ug/L	U
2-Methylnaphthalene	91-57-6	1	1.0	ND	ug/L	U
Dibenzofuran	132-64-9	1	1.0	ND	ug/L	U
Fluorene	86-73-7	1	1.0	ND	ug/L	U
Pentachlorophenol	87-86-5	1	10.0	ND	ug/L	U
Phenanthrene	85-01-8	1	1.0	ND	ug/L	U
Anthracene	120-12-7	1	1.0	ND	ug/L	U
Carbazole	86-74-8	1	1.0	ND	ug/L	U
Fluoranthene	206-44-0	1	1.0	ND	ug/L	U
Pyrene	129-00-0	1	1.0	ND	ug/L	U
Benzo(a)anthracene	56-55-3	1	1.0	ND	ug/L	U
Chrysene	218-01-9	1	1.0	ND	ug/L	U
Benzo(a)pyrene	50-32-8	1	1.0	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	1.0	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	1	1.0	ND	ug/L	U
Benzo(g,h,i)perylene	191-24-2	1	1.0	ND	ug/L	U
1-Methylnaphthalene	90-12-0	1	1.0	ND	ug/L	U
Surrogate: 2-Fluorobiphenyl			*54.4-120 %*	*82.3*	*%*	
Surrogate: 2,4,6-Tribromophenol			*49.3-128 %*	*97.3*	*%*	
Surrogate: p-Terphenyl-d14			*60-120 %*	*102*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

MW-01D-20180913

18I0183-15 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270D-SIM — Sampled: 09/13/2018 13:35

Instrument: NT8 Analyst: JZ — Analyzed: 25-Sep-2018 21:28

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq)
Preparation Batch: BGI0378 — Sample Size: 500 mL
Prepared: 18-Sep-2018 — Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Benzo(a)anthracene	56-55-3	1	0.10	ND	ug/L	U
Chrysene	218-01-9	1	0.10	ND	ug/L	U
Benzofluoranthenes, Total		1	0.20	ND	ug/L	U
Benzo(a)pyrene	50-32-8	1	0.10	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.10	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	1	0.10	ND	ug/L	U
Surrogate: 2-Methylnaphthalene-d10			*31-120 %*	*71.8*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14			*10-125 %*	*70.3*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

MW-01D-20180913

18I0183-15 (Water)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 09/13/2018 13:35

Instrument: FID3 Analyst: VTS — Analyzed: 28-Sep-2018 20:34

Sample Preparation:	Preparation Method: EPA 3510C SepF	
	Preparation Batch: BGI0381	Sample Size: 500 mL
	Prepared: 18-Sep-2018	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Silica Gel	
	Cleanup Batch: CGI0214	Initial Volume: 1 mL
	Cleaned: 26-Sep-2018	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Sulfuric Acid	
	Cleanup Batch: CGI0213	Initial Volume: 1 mL
	Cleaned: 26-Sep-2018	Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)		1	100	ND	ug/L	U
Motor Oil Range Organics (C24-C38)		1	200	ND	ug/L	U
Creosote Range Organics (C12-C22)	8001-58-9	1	200	ND	ug/L	U
Surrogate: o-Terphenyl			*50-150 %*	*81.6*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

MW-01D-20180913

18I0183-15 (Water)

Phenols

Method: EPA 8041A — Sampled: 09/13/2018 13:35

Instrument: ECD8 Analyst: YZ — Analyzed: 27-Sep-2018 17:47

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BGI0380 Sample Size: 500 mL
Prepared: 18-Sep-2018 Final Volume: 50 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Pentachlorophenol	87-86-5	1	0.25	ND	ug/L	U
Surrogate: 2,4,6-Tribromophenol			*26-120 %*	*112*	*%*	
Surrogate: 2,4,6-Tribromophenol [2C]			*26-120 %*	*91.6*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

MW-01S-20180913

18I0183-16 (Water)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 09/13/2018 12:38
Instrument: NT3 Analyst: PC — Analyzed: 20-Sep-2018 12:41

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGI0521 — Sample Size: 0.5 mL
Prepared: 20-Sep-2018 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)		1	2000	**27000**	ug/L	
HC ID: GRO						
Surrogate: Toluene-d8			*80-120 %*	*98.9*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*108*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

MW-01S-20180913

18I0183-16 (Water)

Semivolatile Organic Compounds

Method: EPA 8270D — Sampled: 09/13/2018 12:38

Instrument: NT12 Analyst: JZ — Analyzed: 24-Sep-2018 15:54

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BGI0351 — Sample Size: 500 mL
Prepared: 17-Sep-2018 — Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	3	3.0	**10700**	ug/L	D, E
Acenaphthylene	208-96-8	3	3.0	**7.2**	ug/L	D
Acenaphthene	83-32-9	3	3.0	**249**	ug/L	D, E
2-Methylnaphthalene	91-57-6	3	3.0	**497**	ug/L	D, E
Dibenzofuran	132-64-9	3	3.0	**98.2**	ug/L	D
Fluorene	86-73-7	3	3.0	**92.5**	ug/L	D
Pentachlorophenol	87-86-5	3	30.0	**5500**	ug/L	D, E
Phenanthrene	85-01-8	3	3.0	**89.2**	ug/L	D
Anthracene	120-12-7	3	3.0	**15.5**	ug/L	D
Carbazole	86-74-8	3	3.0	**42.5**	ug/L	D
Fluoranthene	206-44-0	3	3.0	**11.0**	ug/L	D
Pyrene	129-00-0	3	3.0	**8.2**	ug/L	D
Benzo(a)anthracene	56-55-3	3	3.0	ND	ug/L	U
Chrysene	218-01-9	3	3.0	ND	ug/L	U
Benzo(a)pyrene	50-32-8	3	3.0	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	3	3.0	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	3	3.0	ND	ug/L	U
Benzo(g,h,i)perylene	191-24-2	3	3.0	ND	ug/L	U
1-Methylnaphthalene	90-12-0	3	3.0	**367**	ug/L	D, E
Surrogate: 2-Fluorobiphenyl			*54.4-120 %*	*84.0*	*%*	
Surrogate: 2,4,6-Tribromophenol			*49.3-128 %*	*109*	*%*	
Surrogate: p-Terphenyl-d14			*60-120 %*	*113*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

MW-01S-20180913

18I0183-16 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270D-SIM — Sampled: 09/13/2018 12:38

Instrument: NT8 Analyst: JZ — Analyzed: 26-Sep-2018 15:00

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq)
Preparation Batch: BGI0378 — Sample Size: 500 mL
Prepared: 18-Sep-2018 — Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Benzo(a)anthracene	56-55-3	3	0.30	**0.61**	ug/L	D
Chrysene	218-01-9	3	0.30	**0.65**	ug/L	D
Benzofluoranthenes, Total		3	0.60	ND	ug/L	U
Benzo(a)pyrene	50-32-8	3	0.30	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	3	0.30	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	3	0.30	ND	ug/L	U
Surrogate: 2-Methylnaphthalene-d10			*31-120 %*	*48.7*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14			*10-125 %*	*48.5*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

MW-01S-20180913

18I0183-16 (Water)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 09/13/2018 12:38
Instrument: FID3 Analyst: VTS — Analyzed: 28-Sep-2018 20:53

Sample Preparation:	Preparation Method: EPA 3510C SepF	
	Preparation Batch: BGI0381	Sample Size: 500 mL
	Prepared: 18-Sep-2018	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Silica Gel	
	Cleanup Batch: CGI0214	Initial Volume: 1 mL
	Cleaned: 26-Sep-2018	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Sulfuric Acid	
	Cleanup Batch: CGI0213	Initial Volume: 1 mL
	Cleaned: 26-Sep-2018	Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)		20	2000	**8670**	ug/L	D
HC ID: DRO						
Motor Oil Range Organics (C24-C38)		20	4000	ND	ug/L	U
Creosote Range Organics (C12-C22)	8001-58-9	20	4000	**53000**	ug/L	D
HC ID: CREOSOTE						
Surrogate: o-Terphenyl			*50-150 %*	*55.1*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

MW-01S-20180913

18I0183-16RE1 (Water)

Semivolatile Organic Compounds

Method: EPA 8270D — Sampled: 09/13/2018 12:38

Instrument: NT12 Analyst: JZ — Analyzed: 24-Sep-2018 17:02

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BGI0351 — Sample Size: 500 mL
Prepared: 17-Sep-2018 — Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	300	300	**4230**	ug/L	D
Acenaphthylene	208-96-8	300	300	ND	ug/L	U
Acenaphthene	83-32-9	300	300	ND	ug/L	U
2-Methylnaphthalene	91-57-6	300	300	**519**	ug/L	D
Dibenzofuran	132-64-9	300	300	ND	ug/L	U
Fluorene	86-73-7	300	300	ND	ug/L	U
Pentachlorophenol	87-86-5	300	3000	**5550**	ug/L	D
Phenanthrene	85-01-8	300	300	ND	ug/L	U
Anthracene	120-12-7	300	300	ND	ug/L	U
Carbazole	86-74-8	300	300	ND	ug/L	U
Fluoranthene	206-44-0	300	300	ND	ug/L	U
Pyrene	129-00-0	300	300	ND	ug/L	U
Benzo(a)anthracene	56-55-3	300	300	ND	ug/L	U
Chrysene	218-01-9	300	300	ND	ug/L	U
Benzo(a)pyrene	50-32-8	300	300	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	300	300	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	300	300	ND	ug/L	U
Benzo(g,h,i)perylene	191-24-2	300	300	ND	ug/L	U
1-Methylnaphthalene	90-12-0	300	300	**368**	ug/L	D
Surrogate: 2-Fluorobiphenyl			*54.4-120 %*		*D1*	D1, U
Surrogate: 2,4,6-Tribromophenol			*49.3-128 %*		*D1*	D1, U
Surrogate: p-Terphenyl-d14			*60-120 %*		*D1*	D1, U

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

MW-01S-20180913

18I0183-16RE2 (Water)

Semivolatile Organic Compounds

Method: EPA 8270D — Sampled: 09/13/2018 12:38

Instrument: NT12 Analyst: JZ — Analyzed: 04-Oct-2018 14:13

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BGI0351 — Sample Size: 500 mL
Prepared: 17-Sep-2018 — Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	50	50.0	**6770**	ug/L	D, E
Acenaphthylene	208-96-8	50	50.0	ND	ug/L	U
Acenaphthene	83-32-9	50	50.0	**260**	ug/L	D
2-Methylnaphthalene	91-57-6	50	50.0	**555**	ug/L	D
Dibenzofuran	132-64-9	50	50.0	**95.5**	ug/L	D
Fluorene	86-73-7	50	50.0	**77.9**	ug/L	D
Pentachlorophenol	87-86-5	50	500	**6190**	ug/L	D
Phenanthrene	85-01-8	50	50.0	**89.6**	ug/L	D
Anthracene	120-12-7	50	50.0	ND	ug/L	U
Carbazole	86-74-8	50	50.0	ND	ug/L	U
Fluoranthene	206-44-0	50	50.0	ND	ug/L	U
Pyrene	129-00-0	50	50.0	ND	ug/L	U
Benzo(a)anthracene	56-55-3	50	50.0	ND	ug/L	U
Chrysene	218-01-9	50	50.0	ND	ug/L	U
Benzo(a)pyrene	50-32-8	50	50.0	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	50	50.0	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	50	50.0	ND	ug/L	U
Benzo(g,h,i)perylene	191-24-2	50	50.0	ND	ug/L	U
1-Methylnaphthalene	90-12-0	50	50.0	**391**	ug/L	D
Surrogate: 2-Fluorobiphenyl			*54.4-120 %*	*87.4*	*%*	
Surrogate: 2,4,6-Tribromophenol			*49.3-128 %*	*70.2*	*%*	
Surrogate: p-Terphenyl-d14			*60-120 %*	*101*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

Volatile Organic Compounds - Quality Control

Batch BGI0496 - EPA 5030 (Purge and Trap)

Instrument: NT3 Analyst: PC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BGI0496-BLK1)				Prepared: 19-Sep-2018 Analyzed: 19-Sep-2018 13:08						
Gasoline Range Organics (Tol-Nap)	ND	100	ug/L							U
Surrogate: Toluene-d8	4.81		ug/L	*5.00*		*96.2*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.23		ug/L	*5.00*		*105*	*80-120*			
LCS (BGI0496-BS1)				Prepared: 19-Sep-2018 Analyzed: 19-Sep-2018 11:21						
Gasoline Range Organics (Tol-Nap)	971	100	ug/L	1000		97.1	72-128			
Surrogate: Toluene-d8	5.05		ug/L	*5.00*		*101*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.24		ug/L	*5.00*		*105*	*80-120*			
LCS Dup (BGI0496-BSD1)				Prepared: 19-Sep-2018 Analyzed: 19-Sep-2018 11:47						
Gasoline Range Organics (Tol-Nap)	852	100	ug/L	1000		85.2	72-128	13.00	30	
Surrogate: Toluene-d8	4.91		ug/L	*5.00*		*98.2*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.33		ug/L	*5.00*		*107*	*80-120*			

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

Semivolatile Organic Compounds - Quality Control

Batch BGI0351 - EPA 3510C SepF

Instrument: NT12 Analyst: JZ

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BGI0351-BLK1)				Prepared: 17-Sep-2018 Analyzed: 21-Sep-2018 17:06						
Naphthalene	ND	1.0	ug/L							U
Acenaphthylene	ND	1.0	ug/L							U
Acenaphthene	ND	1.0	ug/L							U
2-Methylnaphthalene	ND	1.0	ug/L							U
Dibenzofuran	ND	1.0	ug/L							U
Fluorene	ND	1.0	ug/L							U
Pentachlorophenol	ND	10.0	ug/L							U
Phenanthrene	ND	1.0	ug/L							U
Anthracene	ND	1.0	ug/L							U
Carbazole	ND	1.0	ug/L							U
Fluoranthene	ND	1.0	ug/L							U
Pyrene	ND	1.0	ug/L							U
Benzo(a)anthracene	ND	1.0	ug/L							U
Chrysene	ND	1.0	ug/L							U
Benzo(a)pyrene	ND	1.0	ug/L							U
Indeno(1,2,3-cd)pyrene	ND	1.0	ug/L							U
Dibenzo(a,h)anthracene	ND	1.0	ug/L							U
Benzo(g,h,i)perylene	ND	1.0	ug/L							U
1-Methylnaphthalene	ND	1.0	ug/L							U
Surrogate: 2-Fluorobiphenyl	21.3		ug/L	*25.0*		*85.3*	*54.4-120*			
Surrogate: 2,4,6-Tribromophenol	38.2		ug/L	*37.5*		*102*	*49.3-128*			
Surrogate: p-Terphenyl-d14	28.4		ug/L	*25.0*		*113*	*60-120*			
LCS (BGI0351-BS1)				Prepared: 17-Sep-2018 Analyzed: 21-Sep-2018 17:40						
Naphthalene	17.3	1.0	ug/L	25.0		69.0	51.9-120			
Acenaphthylene	20.0	1.0	ug/L	25.0		80.1	56.5-120			
Acenaphthene	19.9	1.0	ug/L	25.0		79.6	60.9-120			
2-Methylnaphthalene	16.2	1.0	ug/L	25.0		64.6	56.5-120			
Dibenzofuran	18.6	1.0	ug/L	25.0		74.6	61.9-120			
Fluorene	21.6	1.0	ug/L	25.0		86.4	62.3-120			
Pentachlorophenol	56.3	10.0	ug/L	75.0		75.0	40.7-124			
Phenanthrene	23.5	1.0	ug/L	25.0		94.1	61-120			
Anthracene	18.2	1.0	ug/L	25.0		73.0	64.6-120			
Carbazole	18.6	1.0	ug/L	25.0		74.6	64.6-120			
Fluoranthene	20.7	1.0	ug/L	25.0		82.8	67.9-120			

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

Semivolatile Organic Compounds - Quality Control

Batch BGI0351 - EPA 3510C SepF

Instrument: NT12 Analyst: JZ

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BGI0351-BS1)				Prepared: 17-Sep-2018 Analyzed: 21-Sep-2018 17:40						
Pyrene	20.8	1.0	ug/L	25.0		83.0	66.4-120			
Benzo(a)anthracene	26.1	1.0	ug/L	25.0		104	65.9-120			
Chrysene	23.1	1.0	ug/L	25.0		92.5	61.5-120			
Benzo(a)pyrene	21.3	1.0	ug/L	25.0		85.4	74-121			
Indeno(1,2,3-cd)pyrene	23.1	1.0	ug/L	25.0		92.5	55.6-120			
Dibenzo(a,h)anthracene	23.4	1.0	ug/L	25.0		93.7	55-120			
Benzo(g,h,i)perylene	22.7	1.0	ug/L	25.0		90.7	49.4-120			
1-Methylnaphthalene	18.7	1.0	ug/L	25.0		74.7	54.4-120			
Surrogate: 2-Fluorobiphenyl	22.4		ug/L	*25.0*		*89.5*	*54.4-120*			
Surrogate: 2,4,6-Tribromophenol	39.6		ug/L	*37.5*		*106*	*49.3-128*			
Surrogate: p-Terphenyl-d14	26.7		ug/L	*25.0*		*107*	*60-120*			
LCS Dup (BGI0351-BSD1)				Prepared: 17-Sep-2018 Analyzed: 21-Sep-2018 18:14						
Naphthalene	15.9	1.0	ug/L	25.0		63.6	51.9-120	8.21	30	
Acenaphthylene	20.0	1.0	ug/L	25.0		80.1	56.5-120	0.03	30	
Acenaphthene	19.9	1.0	ug/L	25.0		79.8	60.9-120	0.18	30	
2-Methylnaphthalene	15.6	1.0	ug/L	25.0		62.4	56.5-120	3.57	30	
Dibenzofuran	18.6	1.0	ug/L	25.0		74.6	61.9-120	0.02	30	
Fluorene	21.5	1.0	ug/L	25.0		85.9	62.3-120	0.53	30	
Pentachlorophenol	56.2	10.0	ug/L	75.0		74.9	40.7-124	0.17	30	
Phenanthrene	23.2	1.0	ug/L	25.0		92.8	61-120	1.32	30	
Anthracene	18.2	1.0	ug/L	25.0		72.8	64.6-120	0.23	30	
Carbazole	18.6	1.0	ug/L	25.0		74.4	64.6-120	0.16	30	
Fluoranthene	20.6	1.0	ug/L	25.0		82.6	67.9-120	0.23	30	
Pyrene	21.0	1.0	ug/L	25.0		83.8	66.4-120	0.96	30	
Benzo(a)anthracene	26.3	1.0	ug/L	25.0		105	65.9-120	0.73	30	
Chrysene	23.1	1.0	ug/L	25.0		92.3	61.5-120	0.23	30	
Benzo(a)pyrene	21.2	1.0	ug/L	25.0		84.9	74-121	0.62	30	
Indeno(1,2,3-cd)pyrene	22.7	1.0	ug/L	25.0		90.8	55.6-120	1.83	30	
Dibenzo(a,h)anthracene	23.2	1.0	ug/L	25.0		92.9	55-120	0.82	30	
Benzo(g,h,i)perylene	22.6	1.0	ug/L	25.0		90.5	49.4-120	0.24	30	
1-Methylnaphthalene	17.9	1.0	ug/L	25.0		71.4	54.4-120	4.46	30	
Surrogate: 2-Fluorobiphenyl	20.6		ug/L	*25.0*		*82.2*	*54.4-120*			
Surrogate: 2,4,6-Tribromophenol	37.5		ug/L	*37.5*		*99.9*	*49.3-128*			

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

Semivolatile Organic Compounds - Quality Control

Batch BGI0351 - EPA 3510C SepF

Instrument: NT12 Analyst: JZ

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BGI0351-BSD1)				Prepared: 17-Sep-2018 Analyzed: 21-Sep-2018 18:14						
Surrogate: p-Terphenyl-d14	25.1		ug/L	*25.0*		*100*	*60-120*			

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

Semivolatile Organic Compounds - SIM - Quality Control

Batch BGI0378 - EPA 3520C (Liq Liq)

Instrument: NT8 Analyst: JZ

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BGI0378-BLK1)				Prepared: 18-Sep-2018 Analyzed: 25-Sep-2018 16:05						
Benzo(a)anthracene	ND	0.10	ug/L							U
Chrysene	ND	0.10	ug/L							U
Benzofluoranthenes, Total	ND	0.20	ug/L							U
Benzo(a)pyrene	ND	0.10	ug/L							U
Indeno(1,2,3-cd)pyrene	ND	0.10	ug/L							U
Dibenzo(a,h)anthracene	ND	0.10	ug/L							U
Surrogate: 2-Methylnaphthalene-d10	2.26		ug/L	*3.00*		*75.3*	*31-120*			
Surrogate: Dibenzo[a,h]anthracene-d14	3.05		ug/L	*3.00*		*102*	*10-125*			
LCS (BGI0378-BS1)				Prepared: 18-Sep-2018 Analyzed: 25-Sep-2018 16:32						
Benzo(a)anthracene	2.45	0.10	ug/L	3.00		81.6	37-120			
Chrysene	2.68	0.10	ug/L	3.00		89.4	48-120			
Benzofluoranthenes, Total	9.33	0.20	ug/L	9.00		104	46-120			
Benzo(a)pyrene	2.42	0.10	ug/L	3.00		80.7	25-120			
Indeno(1,2,3-cd)pyrene	2.06	0.10	ug/L	3.00		68.6	32-120			
Dibenzo(a,h)anthracene	1.45	0.10	ug/L	3.00		48.5	21-120			
Surrogate: 2-Methylnaphthalene-d10	1.96		ug/L	*3.00*		*65.4*	*31-120*			
Surrogate: Dibenzo[a,h]anthracene-d14	1.68		ug/L	*3.00*		*55.9*	*10-125*			
LCS Dup (BGI0378-BSD1)				Prepared: 18-Sep-2018 Analyzed: 25-Sep-2018 16:59						
Benzo(a)anthracene	2.60	0.10	ug/L	3.00		86.6	37-120	5.96	30	
Chrysene	2.80	0.10	ug/L	3.00		93.3	48-120	4.24	30	
Benzofluoranthenes, Total	9.01	0.20	ug/L	9.00		100	46-120	3.47	30	
Benzo(a)pyrene	2.31	0.10	ug/L	3.00		77.0	25-120	4.61	30	
Indeno(1,2,3-cd)pyrene	2.12	0.10	ug/L	3.00		70.5	32-120	2.77	30	
Dibenzo(a,h)anthracene	1.79	0.10	ug/L	3.00		59.7	21-120	20.70	30	
Surrogate: 2-Methylnaphthalene-d10	1.98		ug/L	*3.00*		*66.0*	*31-120*			
Surrogate: Dibenzo[a,h]anthracene-d14	1.87		ug/L	*3.00*		*62.4*	*10-125*			

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

Petroleum Hydrocarbons - Quality Control

Batch BGI0381 - EPA 3510C SepF

Instrument: FID3 Analyst: VTS

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BGI0381-BLK1)				Prepared: 18-Sep-2018 Analyzed: 28-Sep-2018 13:26						
Diesel Range Organics (C12-C24)	ND	100	ug/L							U
Motor Oil Range Organics (C24-C38)	ND	200	ug/L							U
Creosote Range Organics (C12-C22)	ND	200	ug/L							U
Surrogate: o-Terphenyl	211		ug/L	*225*		*93.8*	*50-150*			
LCS (BGI0381-BS1)				Prepared: 18-Sep-2018 Analyzed: 28-Sep-2018 13:45						
Diesel Range Organics (C12-C24)	2650	100	ug/L	3000		88.2	56-120			
Surrogate: o-Terphenyl	197		ug/L	*225*		*87.6*	*50-150*			
LCS Dup (BGI0381-BSD1)				Prepared: 18-Sep-2018 Analyzed: 28-Sep-2018 14:05						
Diesel Range Organics (C12-C24)	2690	100	ug/L	3000		89.7	56-120	1.64	30	
Surrogate: o-Terphenyl	200		ug/L	*225*		*89.0*	*50-150*			

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

Phenols - Quality Control

Batch BGI0380 - EPA 3510C SepF

Instrument: ECD8 Analyst: YZ

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BGI0380-BLK1)				Prepared: 18-Sep-2018 Analyzed: 27-Sep-2018 12:24						
Pentachlorophenol	ND	0.25	ug/L							U
Surrogate: 2,4,6-Tribromophenol	2.06		ug/L	*2.50*		*82.3*	*26-120*			
Surrogate: 2,4,6-Tribromophenol [2C]	1.85		ug/L	*2.50*		*74.0*	*26-120*			
LCS (BGI0380-BS1)				Prepared: 18-Sep-2018 Analyzed: 27-Sep-2018 12:42						
Pentachlorophenol	1.24	0.25	ug/L	2.50		49.5	48-120			
Surrogate: 2,4,6-Tribromophenol	2.68		ug/L	*2.50*		*107*	*26-120*			
Surrogate: 2,4,6-Tribromophenol [2C]	2.30		ug/L	*2.50*		*92.2*	*26-120*			
LCS Dup (BGI0380-BSD1)				Prepared: 18-Sep-2018 Analyzed: 27-Sep-2018 13:00						
Pentachlorophenol	1.31	0.25	ug/L	2.50		52.5	48-120	5.79	30	
Surrogate: 2,4,6-Tribromophenol	2.67		ug/L	*2.50*		*107*	*26-120*			
Surrogate: 2,4,6-Tribromophenol [2C]	2.27		ug/L	*2.50*		*90.7*	*26-120*			

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

Certified Analyses included in this Report

Analyte	Certifications
EPA 8270D in Water	
Phenol	WADOE,DoD-ELAP,NELAP,CALAP
bis(2-chloroethyl) ether	WADOE,DoD-ELAP,NELAP,CALAP
2-Chlorophenol	WADOE,DoD-ELAP,NELAP,CALAP
1,3-Dichlorobenzene	WADOE,DoD-ELAP,NELAP,CALAP
1,4-Dichlorobenzene	WADOE,DoD-ELAP,NELAP,CALAP
1,2-Dichlorobenzene	WADOE,DoD-ELAP,NELAP,CALAP
Benzyl alcohol	WADOE,DoD-ELAP,NELAP,CALAP
2,2'-Oxybis(1-chloropropane)	WADOE,DoD-ELAP,NELAP,CALAP
2-Methylphenol	WADOE,DoD-ELAP,NELAP,CALAP
Hexachloroethane	WADOE,DoD-ELAP,NELAP,CALAP
N-Nitroso-di-n-Propylamine	WADOE,DoD-ELAP,NELAP,CALAP
4-Methylphenol	WADOE,DoD-ELAP,NELAP,CALAP
Nitrobenzene	WADOE,DoD-ELAP,NELAP,CALAP
Isophorone	WADOE,DoD-ELAP,NELAP,CALAP
2-Nitrophenol	WADOE,DoD-ELAP,NELAP,CALAP
2,4-Dimethylphenol	WADOE,DoD-ELAP,NELAP,CALAP
Bis(2-Chloroethoxy)methane	WADOE,DoD-ELAP,NELAP,CALAP
2,4-Dichlorophenol	WADOE,DoD-ELAP,NELAP,CALAP
1,2,4-Trichlorobenzene	WADOE,DoD-ELAP,NELAP,CALAP
Naphthalene	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Benzoic acid	WADOE,DoD-ELAP,NELAP,CALAP
4-Chloroaniline	WADOE,DoD-ELAP,NELAP,CALAP
2,6-Dinitrotoluene	WADOE,DoD-ELAP,NELAP,CALAP
Hexachlorobutadiene	WADOE,DoD-ELAP,NELAP,CALAP
4-Chloro-3-Methylphenol	WADOE,DoD-ELAP,NELAP,CALAP
Hexachlorocyclopentadiene	WADOE,DoD-ELAP,NELAP,CALAP
2,4,6-Trichlorophenol	WADOE,DoD-ELAP,NELAP,CALAP
2,4,5-Trichlorophenol	WADOE,DoD-ELAP,NELAP,CALAP
2-Chloronaphthalene	WADOE,DoD-ELAP,NELAP,CALAP
2-Nitroaniline	WADOE,DoD-ELAP,NELAP,CALAP
Acenaphthylene	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Dimethylphthalate	WADOE,DoD-ELAP,NELAP,CALAP
Acenaphthene	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
3-Nitroaniline	WADOE,DoD-ELAP,NELAP,CALAP
2-Methylnaphthalene	WADOE,DoD-ELAP,NELAP,CALAP,ADEC

Landau Associates, Inc.	Project: Cascade Pole	
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2,4-Dinitrophenol	WADOE,DoD-ELAP,NELAP,CALAP
Dibenzofuran	WADOE,DoD-ELAP,NELAP,CALAP
4-Nitrophenol	WADOE,DoD-ELAP,NELAP,CALAP
2,4-Dinitrotoluene	WADOE,DoD-ELAP,NELAP,CALAP
Fluorene	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
4-Chlorophenylphenyl ether	WADOE,DoD-ELAP,NELAP,CALAP
Diethyl phthalate	WADOE,DoD-ELAP,NELAP,CALAP
4-Nitroaniline	WADOE,DoD-ELAP,NELAP,CALAP
4,6-Dinitro-2-methylphenol	WADOE,DoD-ELAP,NELAP,CALAP
N-Nitrosodiphenylamine	WADOE,DoD-ELAP,NELAP,CALAP
4-Bromophenyl phenyl ether	WADOE,DoD-ELAP,NELAP,CALAP
Hexachlorobenzene	WADOE,DoD-ELAP,NELAP,CALAP
Pentachlorophenol	WADOE,DoD-ELAP,NELAP,CALAP
Phenanthrene	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Anthracene	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Carbazole	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Di-n-butylphthalate	WADOE,DoD-ELAP,NELAP,CALAP
Fluoranthene	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Pyrene	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Butylbenzylphthalate	WADOE,DoD-ELAP,NELAP,CALAP
Benzo(a)anthracene	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
3,3'-Dichlorobenzidine	WADOE,DoD-ELAP,NELAP,CALAP
Chrysene	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
bis(2-Ethylhexyl)phthalate	WADOE,DoD-ELAP,NELAP,CALAP
Di-n-Octylphthalate	WADOE,DoD-ELAP,NELAP,CALAP
Benzo(b)fluoranthene	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Benzo(k)fluoranthene	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Benzo(a)pyrene	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Indeno(1,2,3-cd)pyrene	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Dibenzo(a,h)anthracene	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Benzo(g,h,i)perylene	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Benzofluoranthenes, Total	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
N-Nitrosodimethylamine	WADOE,DoD-ELAP,NELAP,CALAP
Aniline	WADOE,DoD-ELAP,NELAP,CALAP
1-Methylnaphthalene	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Azobenzene (1,2-DP-Hydrazine)	WADOE,DoD-ELAP,NELAP,CALAP
Benzidine	WADOE,DoD-ELAP
Retene	WADOE,DoD-ELAP
Pyridine	WADOE,DoD-ELAP
2,6-Dichlorophenol	WADOE,DoD-ELAP

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alpha-Terpineol	WADOE,DoD-ELAP
1,4-Dioxane	WADOE,DoD-ELAP
2,3,4,6-Tetrachlorophenol	WADOE,DoD-ELAP
Triphenyl Phosphate	WADOE,DoD-ELAP
Butyl Diphenyl Phosphate	WADOE,DoD-ELAP
Dibutyl Phenyl Phosphate	WADOE,DoD-ELAP
Tributyl Phosphate	WADOE,DoD-ELAP
Butylated Hydroxytoluene	WADOE,DoD-ELAP
Tetrachloroguaiacol	WADOE,DoD-ELAP
3,4,5-Trichloroguaiacol	WADOE,DoD-ELAP
3,4,6-Trichloroguaiacol	WADOE,DoD-ELAP
4,5,6-Trichloroguaiacol	WADOE,DoD-ELAP
Guaiacol	WADOE,DoD-ELAP
1,2,4,5-Tetrachlorobenzene	WADOE,DoD-ELAP

NWTPH-Dx in Water

Diesel Range Organics (C12-C24)	DoD-ELAP,NELAP,WADOE
Diesel Range Organics (C10-C25)	DoD-ELAP,NELAP,WADOE
Diesel Range Organics (Tol-C18)	DoD-ELAP,NELAP,WADOE
Diesel Range Organics (C10-C24)	DoD-ELAP,NELAP,WADOE
Diesel Range Organics (C10-C28)	DoD-ELAP,NELAP,WADOE
Motor Oil Range Organics (C24-C38)	DoD-ELAP,NELAP,WADOE
Motor Oil Range Organics (C25-C36)	DoD-ELAP,NELAP,WADOE
Motor Oil Range Organics (C24-C40)	DoD-ELAP,NELAP,WADOE
Mineral Spirits Range Organics (Tol-C12)	DoD-ELAP,NELAP,WADOE
Mineral Oil Range Organics (C16-C28)	DoD-ELAP,NELAP,WADOE
Kerosene Range Organics (Tol-C18)	DoD-ELAP,NELAP,WADOE
JP8 Range Organics (C8-C18)	DoD-ELAP,NELAP,WADOE
JP5 Range Organics (C10-C16)	DoD-ELAP,NELAP,WADOE
JP4 Range Organics (Tol-C14)	DoD-ELAP,NELAP,WADOE
Jet-A Range Organics (C10-C18)	DoD-ELAP,NELAP,WADOE
Creosote Range Organics (C12-C22)	DoD-ELAP,NELAP,WADOE
Bunker C Range Organics (C10-C38)	DoD-ELAP,NELAP,WADOE
Stoddard Range Organics (C8-C12)	DoD-ELAP,NELAP,WADOE
Transformer Oil Range Organics (C12-C28)	DoD-ELAP,NELAP,WADOE

NWTPHg in Water

Gasoline Range Organics (Tol-Nap)	WADOE,DoD-ELAP
Gasoline Range Organics (2MP-TMB)	WADOE,DoD-ELAP
Gasoline Range Organics (Tol-C12)	WADOE,DoD-ELAP
Gasoline Range Organics (C6-C10)	WADOE,ADEC,DoD-ELAP

Landau Associates, Inc.	Project: Cascade Pole	
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Gasoline Range Organics (C5-C12) WADOE,DoD-ELAP

Code	Description	Number	Expires
ADEC	Alaska Dept of Environmental Conservation	17-015	02/07/2019
CALAP	California Department of Public Health CAELAP	2748	06/30/2019
DoD-ELAP	DoD-Environmental Laboratory Accreditation Program	66169	02/07/2019
NELAP	ORELAP - Oregon Laboratory Accreditation Program	WA100006-011	05/12/2019
WADOE	WA Dept of Ecology	C558	06/30/2019
WA-DW	Ecology - Drinking Water	C558	06/30/2019

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	04-Oct-2018 16:05

Notes and Definitions

*	Flagged value is not within established control limits.
D	The reported value is from a dilution
D1	Surrogate was not detected due to sample extract dilution
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL)
J	Estimated concentration value detected below the reporting limit.
M	Estimated value for a GC/MS analyte detected and confirmed by an analyst but with low spectral match parameters.
U	This analyte is not detected above the applicable reporting or detection limit.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
[2C]	Indicates this result was quantified on the second column on a dual column analysis.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

01 April 2019

Christine Kimmel
Landau Associates, Inc.
130 2nd Avenue S.
Edmonds, WA 98020

RE: Cascade Pole

Please find enclosed sample receipt documentation and analytical results for samples from the project referenced above.

Sample analyses were performed according to ARI's Quality Assurance Plan and any provided project specific Quality Assurance Plan. Each analytical section of this report has been approved and reviewed by an analytical peer, the appropriate Laboratory Supervisor or qualified substitute, and a technical reviewer.

Should you have any questions or problems, please feel free to contact us at your convenience.

Associated Work Order(s)	Associated SDG ID(s)
19C0223	N/A

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the enclose Narrative. ARI, an accredited laboratory, certifies that the report results for which ARI is accredited meets all the requirements of the accrediting body. A list of certified analyses, accreditations, and expiration dates is included in this report.

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Analytical Resources, Inc.

LANDAU ASSOCIATES

Chain-of-Custody Record

☐ Seattle/Edmonds (425) 778-0907 ☐ Spokane (509) 327-9737
☒ Tacoma (253) 926-2493 ☐ Portland (503) 542-1080
☐ _____

Date 3/11/2019
Page 1 of 1

Turnaround Time: (Standard) / Accelerated

Project Name Port of Olympia Project No. 002104.010.016
Project Location/Event Cascade Pole, Wet Season
Sampler's Name KMG/KAM/HER
Project Contact C. Kimmel
Send Results To C. Kimmel, D. Bache, D. Jorgensen

Special Handling Requirements:

Shipment Method:

Stored on ice: (Yes) / No

Sample I.D.	Date	Time	Matrix	No. of Containers	NWTPH-Gx	NWTPH-Dx + creosote	PAHs	cPAHs SIM	PCP 8270	PCP 8041
TripBlank-20190311	—	—	Aq		X	X	X	X	X	X
MW-05S-20190311	3/11/19	1257	Aq	10	X	X	X	X	X	X
PZ-30-20190311	3/11/19	1259	Aq	10	X	X	X	X	X	X
PZ-18-20190311	3/11/19	1648	Aq	10	X	X	X	X	X	X
PZ-17-20190311	3/11/19	1552	Aq	10	X	X	X	X	X	X
CW-13-20190311	3/11/19	1406	Aq	10	X	X	X	X	X	X
MW-05D-20190311	3/11/19	1252	Aq	10	X	X	X	X	X	X
LW-3-20190311	3/11/19	1600	Aq	10	X	X	X	X	X	X
LW-4R-20190311	3/11/19	1715	Aq	10	X	X	X	X	X	X
MW-02S-20190312	3/12/19	941	Aq	10	X	X	X	X	X	X
MW-02D-20190312	3/12/19	936	Aq	10	X	X	X	X	X	X
PZ-19-20190312	3/12/19	1050	Aq	10	X	X	X	X	X	X
PZ-12-20190311	3/11/19	1051	Aq	10	X	X	X	X	X	X
PZ-13-20190311	3/11/19	1046	Aq	10	X	X	X	X	X	X
MW-01D-20190312	3/12/19	1202	Aq	10	X	X	X	X	X	X
MW-01S-20190312	3/12/19	1212	Aq	10	X	X	X	X	X	X

Testing Parameters

Observations/Comments

2.8, 4.5, 4.3, 5.7, 2.1, 2.5, 2.3, 1.7

☐ Allow water samples to settle, collect aliquot from clear portion

NWTPH-Dx - ☒ Acid wash cleanup
- ☒ Silica gel cleanup

☐ Dissolved metal samples were field filtered

Other Run all samples for PCP using 8270. If result = ND, then and only then, run PCP by 8041.

Relinquished by	Received by	Relinquished by	Received by
Signature Katie M. Gaughlitz	Signature Stephanie Fishel	Signature	Signature
Printed Name Katie Gaughlitz	Printed Name Stephanie Fishel	Printed Name	Printed Name
Company Landau Associates	Company AAL	Company	Company
Date 3/13/19 Time 14:25	Date 3-13-19 Time 1425	Date Time	Date Time

WHITE COPY - Laboratory YELLOW COPY - Project File PINK COPY - Client Representative

10/2018

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Landau Tacoma Project Name: Port of Olympia

COC No(s): NA Delivered by: Fed-Ex UPS Courier Hand Delivered Other:

Assigned ARI Job No: Tracking No: NA

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler?	YES	NO
Were custody papers included with the cooler?	YES	NO
Were custody papers properly filled out (ink, signed, etc.)	YES	NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry) 2.8 4.5 4.3 5.7 2.1 2.5 2.3 1.7

Time 1425 Temp Gun ID#: ID00256e5

If cooler temperature is out of compliance fill out form 00070F

Cooler Accepted by: SF Date: 3-13-19 Time: 1425

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		YES	NO
What kind of packing material was used? ... Bubble Wrap Wet Ice Gel Packs Baggies Foam Block Paper Other:			
Was sufficient ice used (if appropriate)?	NA	YES	NO
Were all bottles sealed in individual plastic bags?		YES	NO
Did all bottles arrive in good condition (unbroken)?		YES	NO
Were all bottle labels complete and legible?		YES	NO
Did the number of containers listed on COC match with the number of containers received?		YES	NO
Did all bottle labels and tags agree with custody papers?		YES	NO
Were all bottles used correct for the requested analyses?		YES	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)...	NA	YES	NO
Were all VOC vials free of air bubbles?	NA	YES	NO
Was sufficient amount of sample sent in each bottle?		YES	NO
Date VOC Trip Blank was made at ARI	NA	3/6/19	

Was Sample Split by ARI : NA YES Date/Time: Equipment: Split by:

Samples Logged by: Date: 3/14/19 Time: 1008 Labels checked by:

*** Notify Project Manager of discrepancies or concerns ***

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

By: Date:

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Trip Blanks	19C0223-01	Water	11-Mar-2019 12:57	13-Mar-2019 14:25
MW-05S-20190311	19C0223-02	Water	11-Mar-2019 12:57	13-Mar-2019 14:25
PZ-30-20190311	19C0223-03	Water	11-Mar-2019 12:59	13-Mar-2019 14:25
PZ-18-20190311	19C0223-04	Water	11-Mar-2019 16:48	13-Mar-2019 14:25
PZ-17-20190311	19C0223-05	Water	11-Mar-2019 15:52	13-Mar-2019 14:25
CW-13-20190311	19C0223-06	Water	11-Mar-2019 14:06	13-Mar-2019 14:25
MW-05D-20190311	19C0223-07	Water	11-Mar-2019 12:52	13-Mar-2019 14:25
LW-3-20190311	19C0223-08	Water	11-Mar-2019 16:00	13-Mar-2019 14:25
LW-4R-20190311	19C0223-09	Water	11-Mar-2019 17:15	13-Mar-2019 14:25
MW-02S-20190312	19C0223-10	Water	12-Mar-2019 09:41	13-Mar-2019 14:25
MW-02D-20190312	19C0223-11	Water	12-Mar-2019 09:36	13-Mar-2019 14:25
PZ-19-20190312	19C0223-12	Water	12-Mar-2019 10:50	13-Mar-2019 14:25
PZ-12-20190311	19C0223-13	Water	11-Mar-2019 10:51	13-Mar-2019 14:25
PZ-13-20190311	19C0223-14	Water	11-Mar-2019 10:46	13-Mar-2019 14:25
MW-01D-20190312	19C0223-15	Water	12-Mar-2019 12:02	13-Mar-2019 14:25
MW-01S-20190312	19C0223-16	Water	12-Mar-2019 12:12	13-Mar-2019 14:25

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

Work Order Case Narrative

Gasoline by NWTPH-g (GC/MS)

The sample(s) were run within the recommended holding times.

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The LCS/LCSD percent recoveries were within control limits.

Polynuclear Aromatic Hydrocarbons (PAH) - EPA Method SW8270D-SIM

The sample(s) were extracted and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits with the exception of 2-methylnaphthalene-d10 which is out of control low in sample 19C0223-16.

The method blank(s) were clean at the reporting limits.

The LCS/LCSD percent recoveries were within control limits.

Diesel/Heavy Oil Range Organics - WA-Ecology Method NW-TPHDx (Ac/Si cleaned)

The sample(s) were extracted and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The LCS/LCSD percent recoveries were within control limits.

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Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

Pentachlorophenol - EPA Method SW8041A

The sample(s) were extracted and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The surrogate percent recoveries were within control limits.

The method blank(s) contained analyte. All associated samples were non-detect and no further action was taken.

The LCS/LCSD percent recoveries were within control limits.

Semivolatiles - EPA Method SW8270D

The sample(s) were extracted and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements with the exception of pyrene which is out of control low in the CCAL and the CCAL surrogate 2,4,6-Tribromophenol is out of control high. All associated samples that contain analyte have been flagged with a "Q" qualifer.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits with the exception of surrogates flagged on the associated forms. The organics supervisor reviewed historical data and determinded that with low surrogate recovereis the data was still in line with historical
data and the samples were not re-extracted. The samples were were also analyzed for SIM cPAHs however the full list PAHs could be reported
should the data with surrogate recoveries in control need to be reported.

The method blank(s) were clean at the reporting limits.

The LCS/LCSD percent recoveries were within control limits with the exception of analytes flagged on the associated forms.

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

Trip Blanks

19C0223-01 (Water)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 03/11/2019 12:57
Instrument: NT3 Analyst: PKC — Analyzed: 03/19/2019 14:27

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap) — Extract ID: 19C0223-01 A
Preparation Batch: BHC0538 — Sample Size: 10 mL
Prepared: 19-Mar-2019 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)	GRO	1	100	ND	ug/L	U
Surrogate: Toluene-d8			*80-120 %*	*98.8*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*98.1*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
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Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

MW-05S-20190311

19C0223-02 (Water)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 03/11/2019 12:57

Instrument: NT3 Analyst: PKC — Analyzed: 03/19/2019 14:53

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap) — Extract ID: 19C0223-02 A

Preparation Batch: BHC0538 — Sample Size: 10 mL

Prepared: 19-Mar-2019 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)	GRO	1	100	ND	ug/L	U
Surrogate: Toluene-d8			*80-120 %*	*99.8*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*101*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

MW-05S-20190311

19C0223-02 (Water)

Semivolatile Organic Compounds

Method: EPA 8270D — Sampled: 03/11/2019 12:57

Instrument: NT12 Analyst: JZ — Analyzed: 03/27/2019 13:35

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 19C0223-02 E 01

Preparation Batch: BHC0419 — Sample Size: 500 mL

Prepared: 16-Mar-2019 — Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	1.0	ND	ug/L	U
Acenaphthylene	208-96-8	1	1.0	ND	ug/L	U
Acenaphthene	83-32-9	1	1.0	ND	ug/L	U
2-Methylnaphthalene	91-57-6	1	1.0	ND	ug/L	U
Dibenzofuran	132-64-9	1	1.0	ND	ug/L	U
Fluorene	86-73-7	1	1.0	ND	ug/L	U
Pentachlorophenol	87-86-5	1	10.0	ND	ug/L	U
Phenanthrene	85-01-8	1	1.0	ND	ug/L	U
Anthracene	120-12-7	1	1.0	ND	ug/L	U
Carbazole	86-74-8	1	1.0	ND	ug/L	U
Fluoranthene	206-44-0	1	1.0	ND	ug/L	U
Pyrene	129-00-0	1	1.0	ND	ug/L	U
Benzo(a)anthracene	56-55-3	1	1.0	ND	ug/L	U
Chrysene	218-01-9	1	1.0	ND	ug/L	U
Benzo(a)pyrene	50-32-8	1	1.0	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	1.0	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	1	1.0	ND	ug/L	U
Benzo(g,h,i)perylene	191-24-2	1	1.0	ND	ug/L	U
1-Methylnaphthalene	90-12-0	1	1.0	ND	ug/L	U
Surrogate: 2-Fluorobiphenyl			*54.4-120 %*	*44.2*	*%*	*
Surrogate: 2,4,6-Tribromophenol			*49.3-128 %*	*48.4*	*%*	*, Q
Surrogate: p-Terphenyl-d14			*60-120 %*	*40.4*	*%*	*

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Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

MW-05S-20190311

19C0223-02 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270D-SIM — Sampled: 03/11/2019 12:57

Instrument: NT8 Analyst: JZ — Analyzed: 03/26/2019 20:12

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq) — Extract ID: 19C0223-02 C 01

Preparation Batch: BHC0413 — Sample Size: 500 mL

Prepared: 14-Mar-2019 — Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Benzo(a)anthracene	56-55-3	1	0.10	ND	ug/L	U
Chrysene	218-01-9	1	0.10	ND	ug/L	U
Benzofluoranthenes, Total		1	0.20	ND	ug/L	U
Benzo(a)pyrene	50-32-8	1	0.10	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.10	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	1	0.10	ND	ug/L	U
Surrogate: 2-Methylnaphthalene-d10			*31-120 %*	*53.4*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14			*10-125 %*	*77.3*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

MW-05S-20190311

19C0223-02 (Water)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 03/11/2019 12:57

Instrument: FID3 Analyst: VTS — Analyzed: 03/27/2019 20:00

Sample Preparation:	Preparation Method: EPA 3510C SepF		Extract ID: 19C0223-02 D 01
	Preparation Batch: BHC0414	Sample Size: 500 mL	
	Prepared: 15-Mar-2019	Final Volume: 1 mL	
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19C0223-02 D 01
	Cleanup Batch: CHC0181	Initial Volume: 1 mL	
	Cleaned: 26-Mar-2019	Final Volume: 1 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19C0223-02 D 01
	Cleanup Batch: CHC0179	Initial Volume: 1 mL	
	Cleaned: 26-Mar-2019	Final Volume: 1 mL	

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	100	ND	ug/L	U
Motor Oil Range Organics (C24-C38)	RRO	1	200	ND	ug/L	U
Creosote Range Organics (C12-C22)	8001-58-9	1	200	ND	ug/L	U
Surrogate: o-Terphenyl			*50-150 %*	*94.2*	*%*	

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Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

MW-05S-20190311

19C0223-02 (Water)

Phenols

Method: EPA 8041A — Sampled: 03/11/2019 12:57

Instrument: ECD8 Analyst: yz — Analyzed: 03/27/2019 11:07

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 19C0223-02 F 01

Preparation Batch: BHC0422 — Sample Size: 500 mL

Prepared: 15-Mar-2019 — Final Volume: 50 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Pentachlorophenol	87-86-5	1	0.25	ND	ug/L	U
Surrogate: 2,4,6-Tribromophenol			*26-120 %*	*80.6*	*%*	
Surrogate: 2,4,6-Tribromophenol [2C]			*26-120 %*	*74.6*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

PZ-30-20190311

19C0223-03 (Water)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 03/11/2019 12:59

Instrument: NT3 Analyst: PKC — Analyzed: 03/19/2019 15:19

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap) — Extract ID: 19C0223-03 A

Preparation Batch: BHC0538 — Sample Size: 10 mL

Prepared: 19-Mar-2019 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)	GRO	1	100	ND	ug/L	U
Surrogate: Toluene-d8			*80-120 %*	*100*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*97.2*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

PZ-30-20190311

19C0223-03 (Water)

Semivolatile Organic Compounds

Method: EPA 8270D — Sampled: 03/11/2019 12:59

Instrument: NT12 Analyst: JZ — Analyzed: 03/27/2019 14:10

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 19C0223-03 E 01

Preparation Batch: BHC0419 — Sample Size: 500 mL

Prepared: 16-Mar-2019 — Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	1.0	ND	ug/L	U
Acenaphthylene	208-96-8	1	1.0	ND	ug/L	U
Acenaphthene	83-32-9	1	1.0	**4.4**	ug/L	
2-Methylnaphthalene	91-57-6	1	1.0	ND	ug/L	U
Dibenzofuran	132-64-9	1	1.0	ND	ug/L	U
Fluorene	86-73-7	1	1.0	ND	ug/L	U
Pentachlorophenol	87-86-5	1	10.0	ND	ug/L	U
Phenanthrene	85-01-8	1	1.0	ND	ug/L	U
Anthracene	120-12-7	1	1.0	ND	ug/L	U
Carbazole	86-74-8	1	1.0	ND	ug/L	U
Fluoranthene	206-44-0	1	1.0	ND	ug/L	U
Pyrene	129-00-0	1	1.0	ND	ug/L	U
Benzo(a)anthracene	56-55-3	1	1.0	ND	ug/L	U
Chrysene	218-01-9	1	1.0	ND	ug/L	U
Benzo(a)pyrene	50-32-8	1	1.0	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	1.0	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	1	1.0	ND	ug/L	U
Benzo(g,h,i)perylene	191-24-2	1	1.0	ND	ug/L	U
1-Methylnaphthalene	90-12-0	1	1.0	ND	ug/L	U
Surrogate: 2-Fluorobiphenyl			*54.4-120 %*	*53.7*	*%*	*
Surrogate: 2,4,6-Tribromophenol			*49.3-128 %*	*63.4*	*%*	Q
Surrogate: p-Terphenyl-d14			*60-120 %*	*49.8*	*%*	*

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Landau Associates, Inc.	Project: Cascade Pole	
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Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

PZ-30-20190311

19C0223-03 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270D-SIM — Sampled: 03/11/2019 12:59

Instrument: NT8 Analyst: JZ — Analyzed: 03/26/2019 20:37

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq) — Extract ID: 19C0223-03 C 01

Preparation Batch: BHC0413 — Sample Size: 500 mL

Prepared: 14-Mar-2019 — Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Benzo(a)anthracene	56-55-3	1	0.10	ND	ug/L	U
Chrysene	218-01-9	1	0.10	ND	ug/L	U
Benzofluoranthenes, Total		1	0.20	ND	ug/L	U
Benzo(a)pyrene	50-32-8	1	0.10	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.10	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	1	0.10	ND	ug/L	U
Surrogate: 2-Methylnaphthalene-d10			*31-120 %*	*45.9*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14			*10-125 %*	*82.3*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

PZ-30-20190311

19C0223-03 (Water)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 03/11/2019 12:59

Instrument: FID3 Analyst: VTS — Analyzed: 03/27/2019 20:22

Sample Preparation:	Preparation Method: EPA 3510C SepF		Extract ID: 19C0223-03 D 01
	Preparation Batch: BHC0414	Sample Size: 500 mL	
	Prepared: 15-Mar-2019	Final Volume: 1 mL	
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19C0223-03 D 01
	Cleanup Batch: CHC0181	Initial Volume: 1 mL	
	Cleaned: 26-Mar-2019	Final Volume: 1 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19C0223-03 D 01
	Cleanup Batch: CHC0179	Initial Volume: 1 mL	
	Cleaned: 26-Mar-2019	Final Volume: 1 mL	

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	100	ND	ug/L	U
Motor Oil Range Organics (C24-C38)	RRO	1	200	ND	ug/L	U
Creosote Range Organics (C12-C22)	8001-58-9	1	200	ND	ug/L	U
Surrogate: o-Terphenyl			*50-150 %*	*101*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

PZ-30-20190311

19C0223-03 (Water)

Phenols

Method: EPA 8041A — Sampled: 03/11/2019 12:59

Instrument: ECD8 Analyst: yz — Analyzed: 03/27/2019 11:25

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 19C0223-03 F 01

Preparation Batch: BHC0422 — Sample Size: 500 mL

Prepared: 15-Mar-2019 — Final Volume: 50 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Pentachlorophenol	87-86-5	1	0.25	ND	ug/L	U
Surrogate: 2,4,6-Tribromophenol			*26-120 %*	*79.6*	*%*	
Surrogate: 2,4,6-Tribromophenol [2C]			*26-120 %*	*69.1*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

PZ-18-20190311

19C0223-04 (Water)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 03/11/2019 16:48

Instrument: NT3 Analyst: PKC — Analyzed: 03/19/2019 15:45

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap) — Extract ID: 19C0223-04 A

Preparation Batch: BHC0538 — Sample Size: 10 mL

Prepared: 19-Mar-2019 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)	GRO	1	100	ND	ug/L	U
Surrogate: Toluene-d8			*80-120 %*	*99.3*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*96.8*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

PZ-18-20190311

19C0223-04 (Water)

Semivolatile Organic Compounds

Method: EPA 8270D — Sampled: 03/11/2019 16:48

Instrument: NT12 Analyst: JZ — Analyzed: 03/27/2019 14:44

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 19C0223-04 E 01

Preparation Batch: BHC0419 — Sample Size: 500 mL

Prepared: 16-Mar-2019 — Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	1.0	ND	ug/L	U
Acenaphthylene	208-96-8	1	1.0	ND	ug/L	U
Acenaphthene	83-32-9	1	1.0	ND	ug/L	U
2-Methylnaphthalene	91-57-6	1	1.0	ND	ug/L	U
Dibenzofuran	132-64-9	1	1.0	ND	ug/L	U
Fluorene	86-73-7	1	1.0	ND	ug/L	U
Pentachlorophenol	87-86-5	1	10.0	ND	ug/L	U
Phenanthrene	85-01-8	1	1.0	ND	ug/L	U
Anthracene	120-12-7	1	1.0	ND	ug/L	U
Carbazole	86-74-8	1	1.0	ND	ug/L	U
Fluoranthene	206-44-0	1	1.0	ND	ug/L	U
Pyrene	129-00-0	1	1.0	ND	ug/L	U
Benzo(a)anthracene	56-55-3	1	1.0	ND	ug/L	U
Chrysene	218-01-9	1	1.0	ND	ug/L	U
Benzo(a)pyrene	50-32-8	1	1.0	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	1.0	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	1	1.0	ND	ug/L	U
Benzo(g,h,i)perylene	191-24-2	1	1.0	ND	ug/L	U
1-Methylnaphthalene	90-12-0	1	1.0	ND	ug/L	U
Surrogate: 2-Fluorobiphenyl			*54.4-120 %*	*66.2*	*%*	
Surrogate: 2,4,6-Tribromophenol			*49.3-128 %*	*83.3*	*%*	Q
Surrogate: p-Terphenyl-d14			*60-120 %*	*62.0*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

PZ-18-20190311

19C0223-04 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270D-SIM — Sampled: 03/11/2019 16:48

Instrument: NT8 Analyst: JZ — Analyzed: 03/26/2019 21:03

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq) — Extract ID: 19C0223-04 C 01

Preparation Batch: BHC0413 — Sample Size: 500 mL

Prepared: 14-Mar-2019 — Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Benzo(a)anthracene	56-55-3	1	0.10	ND	ug/L	U
Chrysene	218-01-9	1	0.10	ND	ug/L	U
Benzofluoranthenes, Total		1	0.20	ND	ug/L	U
Benzo(a)pyrene	50-32-8	1	0.10	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.10	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	1	0.10	ND	ug/L	U
Surrogate: 2-Methylnaphthalene-d10			*31-120 %*	*56.4*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14			*10-125 %*	*93.2*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

PZ-18-20190311

19C0223-04 (Water)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 03/11/2019 16:48
Instrument: FID3 Analyst: VTS — Analyzed: 03/27/2019 20:44

Sample Preparation:	Preparation Method: EPA 3510C SepF		Extract ID: 19C0223-04 D 01
	Preparation Batch: BHC0414	Sample Size: 500 mL	
	Prepared: 15-Mar-2019	Final Volume: 1 mL	
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19C0223-04 D 01
	Cleanup Batch: CHC0181	Initial Volume: 1 mL	
	Cleaned: 26-Mar-2019	Final Volume: 1 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19C0223-04 D 01
	Cleanup Batch: CHC0179	Initial Volume: 1 mL	
	Cleaned: 26-Mar-2019	Final Volume: 1 mL	

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	100	ND	ug/L	U
Motor Oil Range Organics (C24-C38)	RRO	1	200	ND	ug/L	U
Creosote Range Organics (C12-C22)	8001-58-9	1	200	ND	ug/L	U
Surrogate: o-Terphenyl			*50-150 %*	*106*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

PZ-18-20190311

19C0223-04 (Water)

Phenols

Method: EPA 8041A — Sampled: 03/11/2019 16:48

Instrument: ECD8 Analyst: yz — Analyzed: 03/27/2019 11:43

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 19C0223-04 F 01

Preparation Batch: BHC0422 — Sample Size: 500 mL

Prepared: 15-Mar-2019 — Final Volume: 50 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Pentachlorophenol	87-86-5	1	0.25	ND	ug/L	U
Surrogate: 2,4,6-Tribromophenol			*26-120 %*	*88.7*	*%*	
Surrogate: 2,4,6-Tribromophenol [2C]			*26-120 %*	*75.9*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

PZ-17-20190311

19C0223-05 (Water)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 03/11/2019 15:52

Instrument: NT3 Analyst: PKC — Analyzed: 03/19/2019 16:12

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap) — Extract ID: 19C0223-05 A

Preparation Batch: BHC0538 — Sample Size: 10 mL

Prepared: 19-Mar-2019 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)	GRO	1	100	**443**	ug/L	
HC ID: GRO						
Surrogate: Toluene-d8			*80-120 %*	*104*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*95.9*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

PZ-17-20190311

19C0223-05 (Water)

Semivolatile Organic Compounds

Method: EPA 8270D — Sampled: 03/11/2019 15:52

Instrument: NT12 Analyst: JZ — Analyzed: 03/27/2019 15:19

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 19C0223-05 E 01

Preparation Batch: BHC0419 — Sample Size: 500 mL

Prepared: 16-Mar-2019 — Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	1.0	ND	ug/L	U
Acenaphthylene	208-96-8	1	1.0	ND	ug/L	U
Acenaphthene	83-32-9	1	1.0	ND	ug/L	U
2-Methylnaphthalene	91-57-6	1	1.0	ND	ug/L	U
Dibenzofuran	132-64-9	1	1.0	ND	ug/L	U
Fluorene	86-73-7	1	1.0	ND	ug/L	U
Pentachlorophenol	87-86-5	1	10.0	ND	ug/L	U
Phenanthrene	85-01-8	1	1.0	ND	ug/L	U
Anthracene	120-12-7	1	1.0	ND	ug/L	U
Carbazole	86-74-8	1	1.0	ND	ug/L	U
Fluoranthene	206-44-0	1	1.0	ND	ug/L	U
Pyrene	129-00-0	1	1.0	ND	ug/L	U
Benzo(a)anthracene	56-55-3	1	1.0	ND	ug/L	U
Chrysene	218-01-9	1	1.0	ND	ug/L	U
Benzo(a)pyrene	50-32-8	1	1.0	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	1.0	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	1	1.0	ND	ug/L	U
Benzo(g,h,i)perylene	191-24-2	1	1.0	ND	ug/L	U
1-Methylnaphthalene	90-12-0	1	1.0	ND	ug/L	U
Surrogate: 2-Fluorobiphenyl			*54.4-120 %*	*61.0*	*%*	
Surrogate: 2,4,6-Tribromophenol			*49.3-128 %*	*75.2*	*%*	Q
Surrogate: p-Terphenyl-d14			*60-120 %*	*53.1*	*%*	*

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

PZ-17-20190311

19C0223-05 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270D-SIM — Sampled: 03/11/2019 15:52

Instrument: NT8 Analyst: JZ — Analyzed: 03/26/2019 21:29

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq) — Extract ID: 19C0223-05 C 01

Preparation Batch: BHC0413 — Sample Size: 500 mL

Prepared: 14-Mar-2019 — Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Benzo(a)anthracene	56-55-3	1	0.10	ND	ug/L	U
Chrysene	218-01-9	1	0.10	ND	ug/L	U
Benzofluoranthenes, Total		1	0.20	ND	ug/L	U
Benzo(a)pyrene	50-32-8	1	0.10	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.10	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	1	0.10	ND	ug/L	U
Surrogate: 2-Methylnaphthalene-d10			*31-120 %*	*58.3*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14			*10-125 %*	*78.3*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

PZ-17-20190311

19C0223-05 (Water)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 03/11/2019 15:52
Instrument: FID3 Analyst: VTS — Analyzed: 03/27/2019 21:06

Sample Preparation:	Preparation Method: EPA 3510C SepF		Extract ID: 19C0223-05 D 01
	Preparation Batch: BHC0414	Sample Size: 500 mL	
	Prepared: 15-Mar-2019	Final Volume: 1 mL	
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19C0223-05 D 01
	Cleanup Batch: CHC0181	Initial Volume: 1 mL	
	Cleaned: 26-Mar-2019	Final Volume: 1 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19C0223-05 D 01
	Cleanup Batch: CHC0179	Initial Volume: 1 mL	
	Cleaned: 26-Mar-2019	Final Volume: 1 mL	

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	100	**182**	ug/L	
HC ID: DIESEL						
Motor Oil Range Organics (C24-C38)	RRO	1	200	ND	ug/L	U
Creosote Range Organics (C12-C22)	8001-58-9	1	200	**1210**	ug/L	
HC ID: CREOSOTE						
Surrogate: o-Terphenyl			*50-150 %*	*93.5*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

PZ-17-20190311

19C0223-05 (Water)

Phenols

Method: EPA 8041A — Sampled: 03/11/2019 15:52

Instrument: ECD8 Analyst: yz — Analyzed: 03/27/2019 12:00

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 19C0223-05 F 01

Preparation Batch: BHC0422 — Sample Size: 500 mL

Prepared: 15-Mar-2019 — Final Volume: 50 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Pentachlorophenol	87-86-5	1	0.25	ND	ug/L	U
Surrogate: 2,4,6-Tribromophenol			*26-120 %*	*90.9*	*%*	
Surrogate: 2,4,6-Tribromophenol [2C]			*26-120 %*	*74.4*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

CW-13-20190311

19C0223-06 (Water)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 03/11/2019 14:06

Instrument: NT3 Analyst: PKC — Analyzed: 03/19/2019 16:38

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap) — Extract ID: 19C0223-06 A

Preparation Batch: BHC0538 — Sample Size: 10 mL

Prepared: 19-Mar-2019 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)	GRO	1	100	**280**	ug/L	
HC ID: GRO						
Surrogate: Toluene-d8			*80-120 %*	*100*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*102*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

CW-13-20190311

19C0223-06 (Water)

Semivolatile Organic Compounds

Method: EPA 8270D — Sampled: 03/11/2019 14:06

Instrument: NT12 Analyst: JZ — Analyzed: 03/27/2019 15:54

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 19C0223-06 E 01

Preparation Batch: BHC0419 — Sample Size: 500 mL

Prepared: 16-Mar-2019 — Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	1.0	**24.4**	ug/L	
Acenaphthylene	208-96-8	1	1.0	ND	ug/L	U
Acenaphthene	83-32-9	1	1.0	**9.8**	ug/L	
2-Methylnaphthalene	91-57-6	1	1.0	ND	ug/L	U
Dibenzofuran	132-64-9	1	1.0	**2.7**	ug/L	
Fluorene	86-73-7	1	1.0	**3.8**	ug/L	
Pentachlorophenol	87-86-5	1	10.0	ND	ug/L	U
Phenanthrene	85-01-8	1	1.0	**1.8**	ug/L	
Anthracene	120-12-7	1	1.0	ND	ug/L	U
Carbazole	86-74-8	1	1.0	**1.2**	ug/L	
Fluoranthene	206-44-0	1	1.0	ND	ug/L	U
Pyrene	129-00-0	1	1.0	ND	ug/L	U
Benzo(a)anthracene	56-55-3	1	1.0	ND	ug/L	U
Chrysene	218-01-9	1	1.0	ND	ug/L	U
Benzo(a)pyrene	50-32-8	1	1.0	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	1.0	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	1	1.0	ND	ug/L	U
Benzo(g,h,i)perylene	191-24-2	1	1.0	ND	ug/L	U
1-Methylnaphthalene	90-12-0	1	1.0	**5.9**	ug/L	
Surrogate: 2-Fluorobiphenyl			*54.4-120 %*	*72.9*	*%*	
Surrogate: 2,4,6-Tribromophenol			*49.3-128 %*	*91.7*	*%*	Q
Surrogate: p-Terphenyl-d14			*60-120 %*	*75.1*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

CW-13-20190311

19C0223-06 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270D-SIM — Sampled: 03/11/2019 14:06

Instrument: NT8 Analyst: JZ — Analyzed: 03/26/2019 21:55

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq) — Extract ID: 19C0223-06 C 01

Preparation Batch: BHC0413 — Sample Size: 500 mL

Prepared: 14-Mar-2019 — Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Benzo(a)anthracene	56-55-3	1	0.10	ND	ug/L	U
Chrysene	218-01-9	1	0.10	ND	ug/L	U
Benzofluoranthenes, Total		1	0.20	ND	ug/L	U
Benzo(a)pyrene	50-32-8	1	0.10	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.10	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	1	0.10	ND	ug/L	U
Surrogate: 2-Methylnaphthalene-d10			*31-120 %*	*63.7*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14			*10-125 %*	*87.4*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

CW-13-20190311

19C0223-06 (Water)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 03/11/2019 14:06

Instrument: FID3 Analyst: VTS — Analyzed: 03/27/2019 21:28

Sample Preparation:	Preparation Method: EPA 3510C SepF		Extract ID: 19C0223-06 D 01
	Preparation Batch: BHC0414	Sample Size: 500 mL	
	Prepared: 15-Mar-2019	Final Volume: 1 mL	
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19C0223-06 D 01
	Cleanup Batch: CHC0181	Initial Volume: 1 mL	
	Cleaned: 26-Mar-2019	Final Volume: 1 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19C0223-06 D 01
	Cleanup Batch: CHC0179	Initial Volume: 1 mL	
	Cleaned: 26-Mar-2019	Final Volume: 1 mL	

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	100	ND	ug/L	U
Motor Oil Range Organics (C24-C38)	RRO	1	200	ND	ug/L	U
Creosote Range Organics (C12-C22)	8001-58-9	1	200	ND	ug/L	U
Surrogate: o-Terphenyl			*50-150 %*	*98.2*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

CW-13-20190311

19C0223-06 (Water)

Phenols

Method: EPA 8041A — Sampled: 03/11/2019 14:06

Instrument: ECD8 Analyst: yz — Analyzed: 03/27/2019 12:18

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 19C0223-06 F 01

Preparation Batch: BHC0422 — Sample Size: 500 mL

Prepared: 15-Mar-2019 — Final Volume: 50 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Pentachlorophenol	87-86-5	1	0.25	ND	ug/L	U
Surrogate: 2,4,6-Tribromophenol			*26-120 %*	*88.3*	*%*	
Surrogate: 2,4,6-Tribromophenol [2C]			*26-120 %*	*69.0*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

MW-05D-20190311

19C0223-07 (Water)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 03/11/2019 12:52

Instrument: NT3 Analyst: PKC — Analyzed: 03/19/2019 17:04

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap) — Extract ID: 19C0223-07 A

Preparation Batch: BHC0538 — Sample Size: 10 mL

Prepared: 19-Mar-2019 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)	GRO	1	100	ND	ug/L	U
Surrogate: Toluene-d8			*80-120 %*	*101*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*99.6*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

MW-05D-20190311

19C0223-07 (Water)

Semivolatile Organic Compounds

Method: EPA 8270D — Sampled: 03/11/2019 12:52

Instrument: NT12 Analyst: JZ — Analyzed: 03/27/2019 17:03

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 19C0223-07 E 01

Preparation Batch: BHC0419 — Sample Size: 500 mL

Prepared: 16-Mar-2019 — Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	1.0	ND	ug/L	U
Acenaphthylene	208-96-8	1	1.0	ND	ug/L	U
Acenaphthene	83-32-9	1	1.0	ND	ug/L	U
2-Methylnaphthalene	91-57-6	1	1.0	ND	ug/L	U
Dibenzofuran	132-64-9	1	1.0	ND	ug/L	U
Fluorene	86-73-7	1	1.0	ND	ug/L	U
Pentachlorophenol	87-86-5	1	10.0	ND	ug/L	U
Phenanthrene	85-01-8	1	1.0	ND	ug/L	U
Anthracene	120-12-7	1	1.0	ND	ug/L	U
Carbazole	86-74-8	1	1.0	ND	ug/L	U
Fluoranthene	206-44-0	1	1.0	ND	ug/L	U
Pyrene	129-00-0	1	1.0	ND	ug/L	U
Benzo(a)anthracene	56-55-3	1	1.0	ND	ug/L	U
Chrysene	218-01-9	1	1.0	ND	ug/L	U
Benzo(a)pyrene	50-32-8	1	1.0	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	1.0	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	1	1.0	ND	ug/L	U
Benzo(g,h,i)perylene	191-24-2	1	1.0	ND	ug/L	U
1-Methylnaphthalene	90-12-0	1	1.0	ND	ug/L	U
Surrogate: 2-Fluorobiphenyl			*54.4-120 %*	*71.7*	*%*	
Surrogate: 2,4,6-Tribromophenol			*49.3-128 %*	*90.3*	*%*	Q
Surrogate: p-Terphenyl-d14			*60-120 %*	*74.3*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

MW-05D-20190311

19C0223-07 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270D-SIM — Sampled: 03/11/2019 12:52

Instrument: NT8 Analyst: JZ — Analyzed: 03/26/2019 22:21

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq) — Extract ID: 19C0223-07 C 01

Preparation Batch: BHC0413 — Sample Size: 500 mL

Prepared: 14-Mar-2019 — Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Benzo(a)anthracene	56-55-3	1	0.10	ND	ug/L	U
Chrysene	218-01-9	1	0.10	ND	ug/L	U
Benzofluoranthenes, Total		1	0.20	ND	ug/L	U
Benzo(a)pyrene	50-32-8	1	0.10	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.10	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	1	0.10	ND	ug/L	U
Surrogate: 2-Methylnaphthalene-d10			*31-120 %*	*55.4*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14			*10-125 %*	*88.2*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

MW-05D-20190311

19C0223-07 (Water)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 03/11/2019 12:52

Instrument: FID3 Analyst: VTS — Analyzed: 03/27/2019 21:50

Sample Preparation:	Preparation Method: EPA 3510C SepF		Extract ID: 19C0223-07 D 01
	Preparation Batch: BHC0414	Sample Size: 500 mL	
	Prepared: 15-Mar-2019	Final Volume: 1 mL	
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19C0223-07 D 01
	Cleanup Batch: CHC0181	Initial Volume: 1 mL	
	Cleaned: 26-Mar-2019	Final Volume: 1 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19C0223-07 D 01
	Cleanup Batch: CHC0179	Initial Volume: 1 mL	
	Cleaned: 26-Mar-2019	Final Volume: 1 mL	

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	100	ND	ug/L	U
Motor Oil Range Organics (C24-C38)	RRO	1	200	ND	ug/L	U
Creosote Range Organics (C12-C22)	8001-58-9	1	200	ND	ug/L	U
Surrogate: o-Terphenyl			*50-150 %*	*105*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

MW-05D-20190311

19C0223-07 (Water)

Phenols

Method: EPA 8041A — Sampled: 03/11/2019 12:52

Instrument: ECD8 Analyst: yz — Analyzed: 03/27/2019 12:36

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 19C0223-07 F 01

Preparation Batch: BHC0422 — Sample Size: 500 mL

Prepared: 15-Mar-2019 — Final Volume: 50 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Pentachlorophenol	87-86-5	1	0.25	ND	ug/L	U
Surrogate: 2,4,6-Tribromophenol			*26-120 %*	*85.5*	*%*	
Surrogate: 2,4,6-Tribromophenol [2C]			*26-120 %*	*70.0*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

LW-3-20190311

19C0223-08 (Water)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 03/11/2019 16:00

Instrument: NT3 Analyst: PKC — Analyzed: 03/19/2019 17:30

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap) — Extract ID: 19C0223-08 A

Preparation Batch: BHC0538 — Sample Size: 10 mL

Prepared: 19-Mar-2019 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)	GRO	1	100	**207**	ug/L	
HC ID: GRO						
Surrogate: Toluene-d8			*80-120 %*	*101*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*100*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

LW-3-20190311

19C0223-08 (Water)

Semivolatile Organic Compounds

Method: EPA 8270D — Sampled: 03/11/2019 16:00

Instrument: NT12 Analyst: JZ — Analyzed: 03/27/2019 17:37

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 19C0223-08 E 01

Preparation Batch: BHC0419 — Sample Size: 500 mL

Prepared: 16-Mar-2019 — Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	1.0	ND	ug/L	U
Acenaphthylene	208-96-8	1	1.0	ND	ug/L	U
Acenaphthene	83-32-9	1	1.0	ND	ug/L	U
2-Methylnaphthalene	91-57-6	1	1.0	ND	ug/L	U
Dibenzofuran	132-64-9	1	1.0	ND	ug/L	U
Fluorene	86-73-7	1	1.0	ND	ug/L	U
Pentachlorophenol	87-86-5	1	10.0	ND	ug/L	U
Phenanthrene	85-01-8	1	1.0	ND	ug/L	U
Anthracene	120-12-7	1	1.0	ND	ug/L	U
Carbazole	86-74-8	1	1.0	ND	ug/L	U
Fluoranthene	206-44-0	1	1.0	ND	ug/L	U
Pyrene	129-00-0	1	1.0	ND	ug/L	U
Benzo(a)anthracene	56-55-3	1	1.0	ND	ug/L	U
Chrysene	218-01-9	1	1.0	ND	ug/L	U
Benzo(a)pyrene	50-32-8	1	1.0	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	1.0	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	1	1.0	ND	ug/L	U
Benzo(g,h,i)perylene	191-24-2	1	1.0	ND	ug/L	U
1-Methylnaphthalene	90-12-0	1	1.0	ND	ug/L	U
Surrogate: 2-Fluorobiphenyl			*54.4-120 %*	*48.2*	*%*	*
Surrogate: 2,4,6-Tribromophenol			*49.3-128 %*	*60.7*	*%*	Q
Surrogate: p-Terphenyl-d14			*60-120 %*	*43.9*	*%*	*

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

LW-3-20190311

19C0223-08 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270D-SIM — Sampled: 03/11/2019 16:00

Instrument: NT8 Analyst: JZ — Analyzed: 03/26/2019 22:46

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq) — Extract ID: 19C0223-08 C 01

Preparation Batch: BHC0413 — Sample Size: 500 mL

Prepared: 14-Mar-2019 — Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Benzo(a)anthracene	56-55-3	1	0.10	ND	ug/L	U
Chrysene	218-01-9	1	0.10	ND	ug/L	U
Benzofluoranthenes, Total		1	0.20	ND	ug/L	U
Benzo(a)pyrene	50-32-8	1	0.10	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.10	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	1	0.10	ND	ug/L	U
Surrogate: 2-Methylnaphthalene-d10			*31-120 %*	*48.3*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14			*10-125 %*	*62.4*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

LW-3-20190311

19C0223-08 (Water)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 03/11/2019 16:00
Instrument: FID3 Analyst: VTS — Analyzed: 03/27/2019 22:12

Sample Preparation:	Preparation Method: EPA 3510C SepF		Extract ID: 19C0223-08 D 01
	Preparation Batch: BHC0414	Sample Size: 500 mL	
	Prepared: 15-Mar-2019	Final Volume: 1 mL	
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19C0223-08 D 01
	Cleanup Batch: CHC0181	Initial Volume: 1 mL	
	Cleaned: 26-Mar-2019	Final Volume: 1 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19C0223-08 D 01
	Cleanup Batch: CHC0179	Initial Volume: 1 mL	
	Cleaned: 26-Mar-2019	Final Volume: 1 mL	

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	100	**133**	ug/L	
HC ID: DRO						
Motor Oil Range Organics (C24-C38)	RRO	1	200	ND	ug/L	U
Creosote Range Organics (C12-C22)	8001-58-9	1	200	**763**	ug/L	
HC ID: CREOSOTE						
Surrogate: o-Terphenyl			*50-150 %*	*102*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

LW-3-20190311

19C0223-08 (Water)

Phenols

Method: EPA 8041A — Sampled: 03/11/2019 16:00

Instrument: ECD8 Analyst: yz — Analyzed: 03/26/2019 21:54

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 19C0223-08 F 01

Preparation Batch: BHC0422 — Sample Size: 500 mL

Prepared: 15-Mar-2019 — Final Volume: 50 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Pentachlorophenol	87-86-5	1	0.25	ND	ug/L	U
Surrogate: 2,4,6-Tribromophenol			*26-120 %*	*70.3*	*%*	
Surrogate: 2,4,6-Tribromophenol [2C]			*26-120 %*	*70.4*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

LW-4R-20190311

19C0223-09 (Water)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 03/11/2019 17:15

Instrument: NT3 Analyst: PKC — Analyzed: 03/19/2019 17:56

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap) — Extract ID: 19C0223-09 A

Preparation Batch: BHC0538 — Sample Size: 10 mL

Prepared: 19-Mar-2019 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)	GRO	1	100	ND	ug/L	U
Surrogate: Toluene-d8			*80-120 %*	*99.9*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*100*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

LW-4R-20190311

19C0223-09 (Water)

Semivolatile Organic Compounds

Method: EPA 8270D — Sampled: 03/11/2019 17:15

Instrument: NT12 Analyst: JZ — Analyzed: 03/27/2019 18:12

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 19C0223-09 E 01

Preparation Batch: BHC0419 — Sample Size: 500 mL

Prepared: 16-Mar-2019 — Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	1.0	ND	ug/L	U
Acenaphthylene	208-96-8	1	1.0	ND	ug/L	U
Acenaphthene	83-32-9	1	1.0	ND	ug/L	U
2-Methylnaphthalene	91-57-6	1	1.0	ND	ug/L	U
Dibenzofuran	132-64-9	1	1.0	ND	ug/L	U
Fluorene	86-73-7	1	1.0	ND	ug/L	U
Pentachlorophenol	87-86-5	1	10.0	ND	ug/L	U
Phenanthrene	85-01-8	1	1.0	ND	ug/L	U
Anthracene	120-12-7	1	1.0	ND	ug/L	U
Carbazole	86-74-8	1	1.0	ND	ug/L	U
Fluoranthene	206-44-0	1	1.0	ND	ug/L	U
Pyrene	129-00-0	1	1.0	ND	ug/L	U
Benzo(a)anthracene	56-55-3	1	1.0	ND	ug/L	U
Chrysene	218-01-9	1	1.0	ND	ug/L	U
Benzo(a)pyrene	50-32-8	1	1.0	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	1.0	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	1	1.0	ND	ug/L	U
Benzo(g,h,i)perylene	191-24-2	1	1.0	ND	ug/L	U
1-Methylnaphthalene	90-12-0	1	1.0	ND	ug/L	U
Surrogate: 2-Fluorobiphenyl			*54.4-120 %*	*77.6*	*%*	
Surrogate: 2,4,6-Tribromophenol			*49.3-128 %*	*107*	*%*	Q
Surrogate: p-Terphenyl-d14			*60-120 %*	*79.5*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

LW-4R-20190311

19C0223-09 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270D-SIM — Sampled: 03/11/2019 17:15

Instrument: NT8 Analyst: JZ — Analyzed: 03/26/2019 23:12

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq) — Extract ID: 19C0223-09 C 01

Preparation Batch: BHC0413 — Sample Size: 500 mL

Prepared: 14-Mar-2019 — Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Benzo(a)anthracene	56-55-3	1	0.10	ND	ug/L	U
Chrysene	218-01-9	1	0.10	ND	ug/L	U
Benzofluoranthenes, Total		1	0.20	ND	ug/L	U
Benzo(a)pyrene	50-32-8	1	0.10	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.10	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	1	0.10	ND	ug/L	U
Surrogate: 2-Methylnaphthalene-d10			*31-120 %*	*64.8*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14			*10-125 %*	*91.6*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

LW-4R-20190311

19C0223-09 (Water)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 03/11/2019 17:15

Instrument: FID3 Analyst: VTS — Analyzed: 03/27/2019 22:34

Sample Preparation:	Preparation Method: EPA 3510C SepF		Extract ID: 19C0223-09 D 01
	Preparation Batch: BHC0414	Sample Size: 500 mL	
	Prepared: 15-Mar-2019	Final Volume: 1 mL	
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19C0223-09 D 01
	Cleanup Batch: CHC0181	Initial Volume: 1 mL	
	Cleaned: 26-Mar-2019	Final Volume: 1 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19C0223-09 D 01
	Cleanup Batch: CHC0179	Initial Volume: 1 mL	
	Cleaned: 26-Mar-2019	Final Volume: 1 mL	

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	100	ND	ug/L	U
Motor Oil Range Organics (C24-C38)	RRO	1	200	ND	ug/L	U
Creosote Range Organics (C12-C22)	8001-58-9	1	200	ND	ug/L	U
Surrogate: o-Terphenyl			*50-150 %*	*71.4*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

LW-4R-20190311

19C0223-09 (Water)

Phenols

Method: EPA 8041A — Sampled: 03/11/2019 17:15

Instrument: ECD8 Analyst: yz — Analyzed: 03/27/2019 12:54

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 19C0223-09 F 01

Preparation Batch: BHC0422 — Sample Size: 500 mL

Prepared: 15-Mar-2019 — Final Volume: 50 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Pentachlorophenol	87-86-5	1	0.25	ND	ug/L	U
Surrogate: 2,4,6-Tribromophenol			*26-120 %*	*81.7*	*%*	
Surrogate: 2,4,6-Tribromophenol [2C]			*26-120 %*	*67.8*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

MW-02S-20190312

19C0223-10 (Water)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 03/12/2019 09:41

Instrument: NT3 Analyst: PKC — Analyzed: 03/19/2019 18:22

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap) — Extract ID: 19C0223-10 B

Preparation Batch: BHC0538 — Sample Size: 10 mL

Prepared: 19-Mar-2019 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)	GRO	1	100	ND	ug/L	U
Surrogate: Toluene-d8			*80-120 %*	*99.8*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*101*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

MW-02S-20190312

19C0223-10 (Water)

Semivolatile Organic Compounds

Method: EPA 8270D — Sampled: 03/12/2019 09:41

Instrument: NT12 Analyst: JZ — Analyzed: 03/27/2019 18:47

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 19C0223-10 E 01

Preparation Batch: BHC0419 — Sample Size: 500 mL

Prepared: 16-Mar-2019 — Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	1.0	ND	ug/L	U
Acenaphthylene	208-96-8	1	1.0	ND	ug/L	U
Acenaphthene	83-32-9	1	1.0	ND	ug/L	U
2-Methylnaphthalene	91-57-6	1	1.0	ND	ug/L	U
Dibenzofuran	132-64-9	1	1.0	ND	ug/L	U
Fluorene	86-73-7	1	1.0	ND	ug/L	U
Pentachlorophenol	87-86-5	1	10.0	ND	ug/L	U
Phenanthrene	85-01-8	1	1.0	ND	ug/L	U
Anthracene	120-12-7	1	1.0	ND	ug/L	U
Carbazole	86-74-8	1	1.0	ND	ug/L	U
Fluoranthene	206-44-0	1	1.0	ND	ug/L	U
Pyrene	129-00-0	1	1.0	ND	ug/L	U
Benzo(a)anthracene	56-55-3	1	1.0	ND	ug/L	U
Chrysene	218-01-9	1	1.0	ND	ug/L	U
Benzo(a)pyrene	50-32-8	1	1.0	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	1.0	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	1	1.0	ND	ug/L	U
Benzo(g,h,i)perylene	191-24-2	1	1.0	ND	ug/L	U
1-Methylnaphthalene	90-12-0	1	1.0	ND	ug/L	U
Surrogate: 2-Fluorobiphenyl			*54.4-120 %*	*43.7*	*%*	*
Surrogate: 2,4,6-Tribromophenol			*49.3-128 %*	*55.4*	*%*	Q
Surrogate: p-Terphenyl-d14			*60-120 %*	*42.8*	*%*	*

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

MW-02S-20190312

19C0223-10 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270D-SIM — Sampled: 03/12/2019 09:41

Instrument: NT8 Analyst: JZ — Analyzed: 03/26/2019 23:38

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq) — Extract ID: 19C0223-10 C 01

Preparation Batch: BHC0413 — Sample Size: 500 mL

Prepared: 14-Mar-2019 — Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Benzo(a)anthracene	56-55-3	1	0.10	ND	ug/L	U
Chrysene	218-01-9	1	0.10	ND	ug/L	U
Benzofluoranthenes, Total		1	0.20	ND	ug/L	U
Benzo(a)pyrene	50-32-8	1	0.10	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.10	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	1	0.10	ND	ug/L	U
Surrogate: 2-Methylnaphthalene-d10			*31-120 %*	*52.0*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14			*10-125 %*	*79.5*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

MW-02S-20190312

19C0223-10 (Water)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 03/12/2019 09:41

Instrument: FID3 Analyst: VTS — Analyzed: 03/27/2019 22:56

Sample Preparation:	Preparation Method: EPA 3510C SepF		Extract ID: 19C0223-10 D 01
	Preparation Batch: BHC0414	Sample Size: 500 mL	
	Prepared: 15-Mar-2019	Final Volume: 1 mL	
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19C0223-10 D 01
	Cleanup Batch: CHC0181	Initial Volume: 1 mL	
	Cleaned: 26-Mar-2019	Final Volume: 1 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19C0223-10 D 01
	Cleanup Batch: CHC0179	Initial Volume: 1 mL	
	Cleaned: 26-Mar-2019	Final Volume: 1 mL	

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	100	ND	ug/L	U
Motor Oil Range Organics (C24-C38)	RRO	1	200	ND	ug/L	U
Creosote Range Organics (C12-C22)	8001-58-9	1	200	ND	ug/L	U
Surrogate: o-Terphenyl			*50-150 %*	*83.5*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

MW-02S-20190312

19C0223-10 (Water)

Phenols

Method: EPA 8041A — Sampled: 03/12/2019 09:41

Instrument: ECD8 Analyst: yz — Analyzed: 03/27/2019 13:12

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 19C0223-10 F 01

Preparation Batch: BHC0422 — Sample Size: 500 mL

Prepared: 15-Mar-2019 — Final Volume: 50 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Pentachlorophenol	87-86-5	1	0.25	ND	ug/L	U
Surrogate: 2,4,6-Tribromophenol			*26-120 %*	*88.1*	*%*	
Surrogate: 2,4,6-Tribromophenol [2C]			*26-120 %*	*72.8*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

MW-02D-20190312

19C0223-11 (Water)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 03/12/2019 09:36

Instrument: NT3 Analyst: PKC — Analyzed: 03/19/2019 18:48

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap) — Extract ID: 19C0223-11 A

Preparation Batch: BHC0538 — Sample Size: 10 mL

Prepared: 19-Mar-2019 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)	GRO	1	100	ND	ug/L	U
Surrogate: Toluene-d8			*80-120 %*	*98.4*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*99.9*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

MW-02D-20190312

19C0223-11 (Water)

Semivolatile Organic Compounds

Method: EPA 8270D — Sampled: 03/12/2019 09:36

Instrument: NT12 Analyst: JZ — Analyzed: 03/27/2019 19:21

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 19C0223-11 E 01

Preparation Batch: BHC0419 — Sample Size: 500 mL

Prepared: 16-Mar-2019 — Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	1.0	**4.3**	ug/L	
Acenaphthylene	208-96-8	1	1.0	ND	ug/L	U
Acenaphthene	83-32-9	1	1.0	**3.6**	ug/L	
2-Methylnaphthalene	91-57-6	1	1.0	**1.3**	ug/L	
Dibenzofuran	132-64-9	1	1.0	**1.2**	ug/L	
Fluorene	86-73-7	1	1.0	**1.3**	ug/L	
Pentachlorophenol	87-86-5	1	10.0	ND	ug/L	U
Phenanthrene	85-01-8	1	1.0	**1.2**	ug/L	
Anthracene	120-12-7	1	1.0	ND	ug/L	U
Carbazole	86-74-8	1	1.0	ND	ug/L	U
Fluoranthene	206-44-0	1	1.0	ND	ug/L	U
Pyrene	129-00-0	1	1.0	ND	ug/L	U
Benzo(a)anthracene	56-55-3	1	1.0	ND	ug/L	U
Chrysene	218-01-9	1	1.0	ND	ug/L	U
Benzo(a)pyrene	50-32-8	1	1.0	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	1.0	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	1	1.0	ND	ug/L	U
Benzo(g,h,i)perylene	191-24-2	1	1.0	ND	ug/L	U
1-Methylnaphthalene	90-12-0	1	1.0	**1.5**	ug/L	
Surrogate: 2-Fluorobiphenyl			*54.4-120 %*	*76.1*	*%*	
Surrogate: 2,4,6-Tribromophenol			*49.3-128 %*	*92.7*	*%*	Q
Surrogate: p-Terphenyl-d14			*60-120 %*	*74.1*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

MW-02D-20190312

19C0223-11 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270D-SIM — Sampled: 03/12/2019 09:36

Instrument: NT8 Analyst: JZ — Analyzed: 03/27/2019 00:04

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq) — Extract ID: 19C0223-11 C 01

Preparation Batch: BHC0413 — Sample Size: 500 mL

Prepared: 14-Mar-2019 — Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Benzo(a)anthracene	56-55-3	1	0.10	ND	ug/L	U
Chrysene	218-01-9	1	0.10	ND	ug/L	U
Benzofluoranthenes, Total		1	0.20	ND	ug/L	U
Benzo(a)pyrene	50-32-8	1	0.10	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.10	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	1	0.10	ND	ug/L	U
Surrogate: 2-Methylnaphthalene-d10			*31-120 %*	*54.1*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14			*10-125 %*	*90.2*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

MW-02D-20190312

19C0223-11 (Water)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 03/12/2019 09:36

Instrument: FID3 Analyst: VTS — Analyzed: 03/27/2019 23:17

Sample Preparation:	Preparation Method: EPA 3510C SepF		Extract ID: 19C0223-11 D 01
	Preparation Batch: BHC0414	Sample Size: 500 mL	
	Prepared: 15-Mar-2019	Final Volume: 1 mL	
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19C0223-11 D 01
	Cleanup Batch: CHC0181	Initial Volume: 1 mL	
	Cleaned: 26-Mar-2019	Final Volume: 1 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19C0223-11 D 01
	Cleanup Batch: CHC0179	Initial Volume: 1 mL	
	Cleaned: 26-Mar-2019	Final Volume: 1 mL	

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	100	ND	ug/L	U
Motor Oil Range Organics (C24-C38)	RRO	1	200	ND	ug/L	U
Creosote Range Organics (C12-C22)	8001-58-9	1	200	ND	ug/L	U
Surrogate: o-Terphenyl			*50-150 %*	*90.1*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

MW-02D-20190312

19C0223-11 (Water)

Phenols

Method: EPA 8041A — Sampled: 03/12/2019 09:36

Instrument: ECD8 Analyst: yz — Analyzed: 03/27/2019 13:29

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 19C0223-11 F 01

Preparation Batch: BHC0422 — Sample Size: 500 mL

Prepared: 15-Mar-2019 — Final Volume: 50 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Pentachlorophenol	87-86-5	1	0.25	ND	ug/L	U
Surrogate: 2,4,6-Tribromophenol			*26-120 %*	*86.7*	*%*	
Surrogate: 2,4,6-Tribromophenol [2C]			*26-120 %*	*71.1*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

PZ-19-20190312

19C0223-12 (Water)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 03/12/2019 10:50

Instrument: NT3 Analyst: PKC — Analyzed: 03/19/2019 19:14

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap) — Extract ID: 19C0223-12 A

Preparation Batch: BHC0538 — Sample Size: 10 mL

Prepared: 19-Mar-2019 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)	GRO	1	100	ND	ug/L	U
Surrogate: Toluene-d8			*80-120 %*	*98.8*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*100*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

PZ-19-20190312

19C0223-12 (Water)

Semivolatile Organic Compounds

Method: EPA 8270D — Sampled: 03/12/2019 10:50

Instrument: NT12 Analyst: JZ — Analyzed: 03/27/2019 19:56

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 19C0223-12 E 01

Preparation Batch: BHC0419 — Sample Size: 500 mL

Prepared: 16-Mar-2019 — Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	1.0	ND	ug/L	U
Acenaphthylene	208-96-8	1	1.0	ND	ug/L	U
Acenaphthene	83-32-9	1	1.0	ND	ug/L	U
2-Methylnaphthalene	91-57-6	1	1.0	ND	ug/L	U
Dibenzofuran	132-64-9	1	1.0	ND	ug/L	U
Fluorene	86-73-7	1	1.0	ND	ug/L	U
Pentachlorophenol	87-86-5	1	10.0	ND	ug/L	U
Phenanthrene	85-01-8	1	1.0	ND	ug/L	U
Anthracene	120-12-7	1	1.0	ND	ug/L	U
Carbazole	86-74-8	1	1.0	ND	ug/L	U
Fluoranthene	206-44-0	1	1.0	ND	ug/L	U
Pyrene	129-00-0	1	1.0	ND	ug/L	U
Benzo(a)anthracene	56-55-3	1	1.0	ND	ug/L	U
Chrysene	218-01-9	1	1.0	ND	ug/L	U
Benzo(a)pyrene	50-32-8	1	1.0	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	1.0	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	1	1.0	ND	ug/L	U
Benzo(g,h,i)perylene	191-24-2	1	1.0	ND	ug/L	U
1-Methylnaphthalene	90-12-0	1	1.0	ND	ug/L	U
Surrogate: 2-Fluorobiphenyl			*54.4-120 %*	*71.6*	*%*	
Surrogate: 2,4,6-Tribromophenol			*49.3-128 %*	*89.2*	*%*	Q
Surrogate: p-Terphenyl-d14			*60-120 %*	*71.8*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

PZ-19-20190312

19C0223-12 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270D-SIM — Sampled: 03/12/2019 10:50

Instrument: NT8 Analyst: JZ — Analyzed: 03/27/2019 00:29

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq) — Extract ID: 19C0223-12 C 01

Preparation Batch: BHC0413 — Sample Size: 500 mL

Prepared: 14-Mar-2019 — Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Benzo(a)anthracene	56-55-3	1	0.10	ND	ug/L	U
Chrysene	218-01-9	1	0.10	ND	ug/L	U
Benzofluoranthenes, Total		1	0.20	ND	ug/L	U
Benzo(a)pyrene	50-32-8	1	0.10	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.10	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	1	0.10	ND	ug/L	U
Surrogate: 2-Methylnaphthalene-d10			*31-120 %*	*56.4*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14			*10-125 %*	*97.8*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

PZ-19-20190312

19C0223-12 (Water)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 03/12/2019 10:50

Instrument: FID3 Analyst: VTS — Analyzed: 03/28/2019 00:45

Sample Preparation:	Preparation Method: EPA 3510C SepF		Extract ID: 19C0223-12 D 01
	Preparation Batch: BHC0414	Sample Size: 500 mL	
	Prepared: 15-Mar-2019	Final Volume: 1 mL	
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19C0223-12 D 01
	Cleanup Batch: CHC0181	Initial Volume: 1 mL	
	Cleaned: 26-Mar-2019	Final Volume: 1 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19C0223-12 D 01
	Cleanup Batch: CHC0179	Initial Volume: 1 mL	
	Cleaned: 26-Mar-2019	Final Volume: 1 mL	

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	100	ND	ug/L	U
Motor Oil Range Organics (C24-C38)	RRO	1	200	ND	ug/L	U
Creosote Range Organics (C12-C22)	8001-58-9	1	200	ND	ug/L	U
Surrogate: o-Terphenyl			*50-150 %*	*88.6*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

PZ-19-20190312

19C0223-12 (Water)

Phenols

Method: EPA 8041A — Sampled: 03/12/2019 10:50

Instrument: ECD8 Analyst: yz — Analyzed: 03/26/2019 20:43

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 19C0223-12 F 01

Preparation Batch: BHC0422 — Sample Size: 500 mL

Prepared: 15-Mar-2019 — Final Volume: 50 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Pentachlorophenol	87-86-5	1	0.25	ND	ug/L	U
Surrogate: 2,4,6-Tribromophenol			*26-120 %*	*66.2*	*%*	
Surrogate: 2,4,6-Tribromophenol [2C]			*26-120 %*	*68.3*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

PZ-12-20190311

19C0223-13 (Water)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 03/11/2019 10:51

Instrument: NT3 Analyst: PKC — Analyzed: 03/20/2019 15:48

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap) — Extract ID: 19C0223-13 A

Preparation Batch: BHC0585 — Sample Size: 10 mL

Prepared: 20-Mar-2019 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)	GRO	1	100	ND	ug/L	U
Surrogate: Toluene-d8			*80-120 %*	*101*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*99.9*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

PZ-12-20190311

19C0223-13 (Water)

Semivolatile Organic Compounds

Method: EPA 8270D — Sampled: 03/11/2019 10:51

Instrument: NT12 Analyst: JZ — Analyzed: 03/27/2019 20:30

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 19C0223-13 E 01

Preparation Batch: BHC0419 — Sample Size: 500 mL

Prepared: 16-Mar-2019 — Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	1.0	ND	ug/L	U
Acenaphthylene	208-96-8	1	1.0	ND	ug/L	U
Acenaphthene	83-32-9	1	1.0	ND	ug/L	U
2-Methylnaphthalene	91-57-6	1	1.0	ND	ug/L	U
Dibenzofuran	132-64-9	1	1.0	ND	ug/L	U
Fluorene	86-73-7	1	1.0	ND	ug/L	U
Pentachlorophenol	87-86-5	1	10.0	ND	ug/L	U
Phenanthrene	85-01-8	1	1.0	ND	ug/L	U
Anthracene	120-12-7	1	1.0	ND	ug/L	U
Carbazole	86-74-8	1	1.0	ND	ug/L	U
Fluoranthene	206-44-0	1	1.0	ND	ug/L	U
Pyrene	129-00-0	1	1.0	ND	ug/L	U
Benzo(a)anthracene	56-55-3	1	1.0	ND	ug/L	U
Chrysene	218-01-9	1	1.0	ND	ug/L	U
Benzo(a)pyrene	50-32-8	1	1.0	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	1.0	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	1	1.0	ND	ug/L	U
Benzo(g,h,i)perylene	191-24-2	1	1.0	ND	ug/L	U
1-Methylnaphthalene	90-12-0	1	1.0	ND	ug/L	U
Surrogate: 2-Fluorobiphenyl			*54.4-120 %*	*67.8*	*%*	
Surrogate: 2,4,6-Tribromophenol			*49.3-128 %*	*81.6*	*%*	Q
Surrogate: p-Terphenyl-d14			*60-120 %*	*64.9*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

PZ-12-20190311

19C0223-13 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270D-SIM — Sampled: 03/11/2019 10:51

Instrument: NT8 Analyst: JZ — Analyzed: 03/27/2019 00:55

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq) — Extract ID: 19C0223-13 C 01

Preparation Batch: BHC0413 — Sample Size: 500 mL

Prepared: 14-Mar-2019 — Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Benzo(a)anthracene	56-55-3	1	0.10	ND	ug/L	U
Chrysene	218-01-9	1	0.10	ND	ug/L	U
Benzofluoranthenes, Total		1	0.20	ND	ug/L	U
Benzo(a)pyrene	50-32-8	1	0.10	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.10	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	1	0.10	ND	ug/L	U
Surrogate: 2-Methylnaphthalene-d10			*31-120 %*	*64.3*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14			*10-125 %*	*104*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

PZ-12-20190311

19C0223-13 (Water)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 03/11/2019 10:51

Instrument: FID3 Analyst: VTS — Analyzed: 03/28/2019 01:07

Sample Preparation:	Preparation Method: EPA 3510C SepF		Extract ID: 19C0223-13 D 01
	Preparation Batch: BHC0414	Sample Size: 500 mL	
	Prepared: 15-Mar-2019	Final Volume: 1 mL	
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19C0223-13 D 01
	Cleanup Batch: CHC0181	Initial Volume: 1 mL	
	Cleaned: 26-Mar-2019	Final Volume: 1 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19C0223-13 D 01
	Cleanup Batch: CHC0179	Initial Volume: 1 mL	
	Cleaned: 26-Mar-2019	Final Volume: 1 mL	

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	100	ND	ug/L	U
Motor Oil Range Organics (C24-C38)	RRO	1	200	ND	ug/L	U
Creosote Range Organics (C12-C22)	8001-58-9	1	200	ND	ug/L	U
Surrogate: o-Terphenyl			*50-150 %*	*111*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

PZ-12-20190311

19C0223-13 (Water)

Phenols

Method: EPA 8041A — Sampled: 03/11/2019 10:51

Instrument: ECD8 Analyst: yz — Analyzed: 03/26/2019 21:01

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 19C0223-13 F 01

Preparation Batch: BHC0422 — Sample Size: 500 mL

Prepared: 15-Mar-2019 — Final Volume: 50 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Pentachlorophenol	87-86-5	1	0.25	ND	ug/L	U
Surrogate: 2,4,6-Tribromophenol			*26-120 %*	*71.6*	*%*	
Surrogate: 2,4,6-Tribromophenol [2C]			*26-120 %*	*69.4*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

PZ-13-20190311

19C0223-14 (Water)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 03/11/2019 10:46

Instrument: NT3 Analyst: PKC — Analyzed: 03/20/2019 16:14

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap) — Extract ID: 19C0223-14 A

Preparation Batch: BHC0585 — Sample Size: 10 mL

Prepared: 20-Mar-2019 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)	GRO	1	100	ND	ug/L	U
Surrogate: Toluene-d8			*80-120 %*	*99.9*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*98.6*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

PZ-13-20190311

19C0223-14 (Water)

Semivolatile Organic Compounds

Method: EPA 8270D — Sampled: 03/11/2019 10:46

Instrument: NT12 Analyst: JZ — Analyzed: 03/27/2019 21:04

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 19C0223-14 E 01

Preparation Batch: BHC0419 — Sample Size: 500 mL

Prepared: 16-Mar-2019 — Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	1.0	ND	ug/L	U
Acenaphthylene	208-96-8	1	1.0	ND	ug/L	U
Acenaphthene	83-32-9	1	1.0	ND	ug/L	U
2-Methylnaphthalene	91-57-6	1	1.0	ND	ug/L	U
Dibenzofuran	132-64-9	1	1.0	ND	ug/L	U
Fluorene	86-73-7	1	1.0	ND	ug/L	U
Pentachlorophenol	87-86-5	1	10.0	ND	ug/L	U
Phenanthrene	85-01-8	1	1.0	ND	ug/L	U
Anthracene	120-12-7	1	1.0	ND	ug/L	U
Carbazole	86-74-8	1	1.0	ND	ug/L	U
Fluoranthene	206-44-0	1	1.0	ND	ug/L	U
Pyrene	129-00-0	1	1.0	ND	ug/L	U
Benzo(a)anthracene	56-55-3	1	1.0	ND	ug/L	U
Chrysene	218-01-9	1	1.0	ND	ug/L	U
Benzo(a)pyrene	50-32-8	1	1.0	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	1.0	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	1	1.0	ND	ug/L	U
Benzo(g,h,i)perylene	191-24-2	1	1.0	ND	ug/L	U
1-Methylnaphthalene	90-12-0	1	1.0	ND	ug/L	U
Surrogate: 2-Fluorobiphenyl			*54.4-120 %*	*50.1*	*%*	*
Surrogate: 2,4,6-Tribromophenol			*49.3-128 %*	*66.9*	*%*	Q
Surrogate: p-Terphenyl-d14			*60-120 %*	*51.8*	*%*	*

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

PZ-13-20190311

19C0223-14 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270D-SIM — Sampled: 03/11/2019 10:46

Instrument: NT8 Analyst: JZ — Analyzed: 03/27/2019 01:21

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq) — Extract ID: 19C0223-14 C 01

Preparation Batch: BHC0413 — Sample Size: 500 mL

Prepared: 14-Mar-2019 — Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Benzo(a)anthracene	56-55-3	1	0.10	ND	ug/L	U
Chrysene	218-01-9	1	0.10	ND	ug/L	U
Benzofluoranthenes, Total		1	0.20	ND	ug/L	U
Benzo(a)pyrene	50-32-8	1	0.10	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.10	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	1	0.10	ND	ug/L	U
Surrogate: 2-Methylnaphthalene-d10			*31-120 %*	*36.0*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14			*10-125 %*	*92.8*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

PZ-13-20190311

19C0223-14 (Water)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 03/11/2019 10:46
Instrument: FID3 Analyst: VTS — Analyzed: 03/28/2019 01:28

Sample Preparation:	Preparation Method: EPA 3510C SepF		Extract ID: 19C0223-14 D 01
	Preparation Batch: BHC0414	Sample Size: 500 mL	
	Prepared: 15-Mar-2019	Final Volume: 1 mL	
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19C0223-14 D 01
	Cleanup Batch: CHC0181	Initial Volume: 1 mL	
	Cleaned: 26-Mar-2019	Final Volume: 1 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19C0223-14 D 01
	Cleanup Batch: CHC0179	Initial Volume: 1 mL	
	Cleaned: 26-Mar-2019	Final Volume: 1 mL	

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	100	ND	ug/L	U
Motor Oil Range Organics (C24-C38)	RRO	1	200	ND	ug/L	U
Creosote Range Organics (C12-C22)	8001-58-9	1	200	ND	ug/L	U
Surrogate: o-Terphenyl			*50-150 %*	*83.2*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

PZ-13-20190311

19C0223-14 (Water)

Phenols

Method: EPA 8041A — Sampled: 03/11/2019 10:46

Instrument: ECD8 Analyst: yz — Analyzed: 03/26/2019 21:19

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 19C0223-14 F 01

Preparation Batch: BHC0422 — Sample Size: 500 mL

Prepared: 15-Mar-2019 — Final Volume: 50 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Pentachlorophenol	87-86-5	1	0.25	ND	ug/L	U
Surrogate: 2,4,6-Tribromophenol			*26-120 %*	*74.3*	*%*	
Surrogate: 2,4,6-Tribromophenol [2C]			*26-120 %*	*71.1*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

MW-01D-20190312

19C0223-15 (Water)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 03/12/2019 12:02

Instrument: NT3 Analyst: PKC — Analyzed: 03/20/2019 16:40

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap) — Extract ID: 19C0223-15 A

Preparation Batch: BHC0585 — Sample Size: 10 mL

Prepared: 20-Mar-2019 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)	GRO	1	100	ND	ug/L	U
Surrogate: Toluene-d8			*80-120 %*	*99.8*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*101*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

MW-01D-20190312

19C0223-15 (Water)

Semivolatile Organic Compounds

Method: EPA 8270D — Sampled: 03/12/2019 12:02

Instrument: NT12 Analyst: JZ — Analyzed: 03/27/2019 21:38

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 19C0223-15 E 01

Preparation Batch: BHC0419 — Sample Size: 500 mL

Prepared: 16-Mar-2019 — Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	1.0	ND	ug/L	U
Acenaphthylene	208-96-8	1	1.0	ND	ug/L	U
Acenaphthene	83-32-9	1	1.0	ND	ug/L	U
2-Methylnaphthalene	91-57-6	1	1.0	ND	ug/L	U
Dibenzofuran	132-64-9	1	1.0	ND	ug/L	U
Fluorene	86-73-7	1	1.0	ND	ug/L	U
Pentachlorophenol	87-86-5	1	10.0	ND	ug/L	U
Phenanthrene	85-01-8	1	1.0	ND	ug/L	U
Anthracene	120-12-7	1	1.0	ND	ug/L	U
Carbazole	86-74-8	1	1.0	ND	ug/L	U
Fluoranthene	206-44-0	1	1.0	ND	ug/L	U
Pyrene	129-00-0	1	1.0	ND	ug/L	U
Benzo(a)anthracene	56-55-3	1	1.0	ND	ug/L	U
Chrysene	218-01-9	1	1.0	ND	ug/L	U
Benzo(a)pyrene	50-32-8	1	1.0	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	1.0	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	1	1.0	ND	ug/L	U
Benzo(g,h,i)perylene	191-24-2	1	1.0	ND	ug/L	U
1-Methylnaphthalene	90-12-0	1	1.0	ND	ug/L	U
Surrogate: 2-Fluorobiphenyl			*54.4-120 %*	*54.2*	*%*	*
Surrogate: 2,4,6-Tribromophenol			*49.3-128 %*	*82.7*	*%*	Q
Surrogate: p-Terphenyl-d14			*60-120 %*	*63.6*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

MW-01D-20190312

19C0223-15 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270D-SIM — Sampled: 03/12/2019 12:02

Instrument: NT8 Analyst: JZ — Analyzed: 03/27/2019 01:47

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq) — Extract ID: 19C0223-15 C 01

Preparation Batch: BHC0413 — Sample Size: 500 mL

Prepared: 14-Mar-2019 — Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Benzo(a)anthracene	56-55-3	1	0.10	ND	ug/L	U
Chrysene	218-01-9	1	0.10	ND	ug/L	U
Benzofluoranthenes, Total		1	0.20	ND	ug/L	U
Benzo(a)pyrene	50-32-8	1	0.10	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.10	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	1	0.10	ND	ug/L	U
Surrogate: 2-Methylnaphthalene-d10			*31-120 %*	*53.9*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14			*10-125 %*	*92.6*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

MW-01D-20190312

19C0223-15 (Water)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 03/12/2019 12:02

Instrument: FID3 Analyst: VTS — Analyzed: 03/28/2019 01:50

Sample Preparation:	Preparation Method: EPA 3510C SepF		Extract ID: 19C0223-15 D 01
	Preparation Batch: BHC0414	Sample Size: 500 mL	
	Prepared: 15-Mar-2019	Final Volume: 1 mL	
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19C0223-15 D 01
	Cleanup Batch: CHC0181	Initial Volume: 1 mL	
	Cleaned: 26-Mar-2019	Final Volume: 1 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19C0223-15 D 01
	Cleanup Batch: CHC0179	Initial Volume: 1 mL	
	Cleaned: 26-Mar-2019	Final Volume: 1 mL	

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	100	ND	ug/L	U
Motor Oil Range Organics (C24-C38)	RRO	1	200	ND	ug/L	U
Creosote Range Organics (C12-C22)	8001-58-9	1	200	ND	ug/L	U
Surrogate: o-Terphenyl			*50-150 %*	*103*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

MW-01D-20190312

19C0223-15 (Water)

Phenols

Method: EPA 8041A — Sampled: 03/12/2019 12:02

Instrument: ECD8 Analyst: yz — Analyzed: 03/26/2019 21:36

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 19C0223-15 F 01

Preparation Batch: BHC0422 — Sample Size: 500 mL

Prepared: 15-Mar-2019 — Final Volume: 50 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Pentachlorophenol	87-86-5	1	0.25	ND	ug/L	U
Surrogate: 2,4,6-Tribromophenol			*26-120 %*	*74.2*	*%*	
Surrogate: 2,4,6-Tribromophenol [2C]			*26-120 %*	*70.5*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

MW-01S-20190312

19C0223-16 (Water)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 03/12/2019 12:12

Instrument: NT3 Analyst: PKC — Analyzed: 03/20/2019 17:08

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap) — Extract ID: 19C0223-16 A

Preparation Batch: BHC0585 — Sample Size: 1 mL

Prepared: 20-Mar-2019 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)	GRO	1	1000	**16700**	ug/L	
HC ID: GRO						
Surrogate: Toluene-d8			*80-120 %*	*101*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*101*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

MW-01S-20190312

19C0223-16 (Water)

Semivolatile Organic Compounds

Method: EPA 8270D — Sampled: 03/12/2019 12:12

Instrument: NT12 Analyst: JZ — Analyzed: 03/27/2019 16:28

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 19C0223-16 E 01

Preparation Batch: BHC0419 — Sample Size: 500 mL

Prepared: 16-Mar-2019 — Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	3	3.0	**1050**	ug/L	D, E
Acenaphthylene	208-96-8	3	3.0	ND	ug/L	U
Acenaphthene	83-32-9	3	3.0	**201**	ug/L	D
2-Methylnaphthalene	91-57-6	3	3.0	**322**	ug/L	D, E
Dibenzofuran	132-64-9	3	3.0	**79.9**	ug/L	D
Fluorene	86-73-7	3	3.0	**74.2**	ug/L	D
Pentachlorophenol	87-86-5	3	30.0	**529**	ug/L	D, E
Phenanthrene	85-01-8	3	3.0	**93.8**	ug/L	D
Anthracene	120-12-7	3	3.0	**20.1**	ug/L	D
Carbazole	86-74-8	3	3.0	**26.3**	ug/L	D
Fluoranthene	206-44-0	3	3.0	**26.0**	ug/L	D
Pyrene	129-00-0	3	3.0	**17.5**	ug/L	D
Benzo(a)anthracene	56-55-3	3	3.0	**4.5**	ug/L	D
Chrysene	218-01-9	3	3.0	**4.9**	ug/L	D
Benzo(a)pyrene	50-32-8	3	3.0	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	3	3.0	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	3	3.0	ND	ug/L	U
Benzo(g,h,i)perylene	191-24-2	3	3.0	ND	ug/L	U
1-Methylnaphthalene	90-12-0	3	3.0	**237**	ug/L	D
Surrogate: 2-Fluorobiphenyl			*54.4-120 %*	*60.0*	*%*	
Surrogate: 2,4,6-Tribromophenol			*49.3-128 %*	*76.2*	*%*	Q
Surrogate: p-Terphenyl-d14			*60-120 %*	*58.2*	*%*	*

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

MW-01S-20190312

19C0223-16 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270D-SIM — Sampled: 03/12/2019 12:12

Instrument: NT8 Analyst: JZ — Analyzed: 03/27/2019 02:12

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq) — Extract ID: 19C0223-16 C 01

Preparation Batch: BHC0413 — Sample Size: 500 mL

Prepared: 14-Mar-2019 — Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Benzo(a)anthracene	56-55-3	1	0.10	**2.52**	ug/L	
Chrysene	218-01-9	1	0.10	**2.84**	ug/L	
Benzofluoranthenes, Total		1	0.20	**2.00**	ug/L	
Benzo(a)pyrene	50-32-8	1	0.10	**0.91**	ug/L	
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.10	**0.22**	ug/L	
Dibenzo(a,h)anthracene	53-70-3	1	0.10	ND	ug/L	U
Surrogate: 2-Methylnaphthalene-d10			*31-120 %*	*25.3*	*%*	*
Surrogate: Dibenzo[a,h]anthracene-d14			*10-125 %*	*70.1*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

MW-01S-20190312

19C0223-16 (Water)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 03/12/2019 12:12
Instrument: FID3 Analyst: VTS — Analyzed: 03/28/2019 02:12

Sample Preparation:	Preparation Method: EPA 3510C SepF		Extract ID: 19C0223-16 D 01
	Preparation Batch: BHC0414	Sample Size: 500 mL	
	Prepared: 15-Mar-2019	Final Volume: 1 mL	
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19C0223-16 D 01
	Cleanup Batch: CHC0181	Initial Volume: 1 mL	
	Cleaned: 26-Mar-2019	Final Volume: 1 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19C0223-16 D 01
	Cleanup Batch: CHC0179	Initial Volume: 1 mL	
	Cleaned: 26-Mar-2019	Final Volume: 1 mL	

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	100	**5050**	ug/L	E
HC ID: DRO						
Motor Oil Range Organics (C24-C38)	RRO	1	200	**234**	ug/L	
HC ID: RRO						
Creosote Range Organics (C12-C22)	8001-58-9	1	200	**33500**	ug/L	E
HC ID: CREOSOTE						
Surrogate: o-Terphenyl			*50-150 %*	*100*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

MW-01S-20190312

19C0223-16RE1 (Water)

Semivolatile Organic Compounds

Method: EPA 8270D — Sampled: 03/12/2019 12:12

Instrument: NT12 Analyst: JZ — Analyzed: 03/27/2019 22:13

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 19C0223-16RE1 E 01

Preparation Batch: BHC0419 — Sample Size: 500 mL

Prepared: 16-Mar-2019 — Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	30	30.0	**1620**	ug/L	D
Acenaphthylene	208-96-8	30	30.0	ND	ug/L	U
Acenaphthene	83-32-9	30	30.0	**195**	ug/L	D
2-Methylnaphthalene	91-57-6	30	30.0	**329**	ug/L	D
Dibenzofuran	132-64-9	30	30.0	**79.2**	ug/L	D
Fluorene	86-73-7	30	30.0	**75.1**	ug/L	D
Pentachlorophenol	87-86-5	30	300	**426**	ug/L	D
Phenanthrene	85-01-8	30	30.0	**94.6**	ug/L	D
Anthracene	120-12-7	30	30.0	ND	ug/L	U
Carbazole	86-74-8	30	30.0	ND	ug/L	U
Fluoranthene	206-44-0	30	30.0	ND	ug/L	U
Pyrene	129-00-0	30	30.0	ND	ug/L	U
Benzo(a)anthracene	56-55-3	30	30.0	ND	ug/L	U
Chrysene	218-01-9	30	30.0	ND	ug/L	U
Benzo(a)pyrene	50-32-8	30	30.0	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	30	30.0	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	30	30.0	ND	ug/L	U
Benzo(g,h,i)perylene	191-24-2	30	30.0	ND	ug/L	U
1-Methylnaphthalene	90-12-0	30	30.0	**242**	ug/L	D
Surrogate: 2-Fluorobiphenyl			*54.4-120 %*	*61.1*	*%*	
Surrogate: 2,4,6-Tribromophenol			*49.3-128 %*	*73.1*	*%*	Q
Surrogate: p-Terphenyl-d14			*60-120 %*	*56.9*	*%*	*

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

MW-01S-20190312

19C0223-16RE1 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270D-SIM — Sampled: 03/12/2019 12:12

Instrument: NT8 Analyst: JZ — Analyzed: 03/27/2019 12:13

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq) — Extract ID: 19C0223-16RE1 C 01

Preparation Batch: BHC0413 — Sample Size: 500 mL

Prepared: 14-Mar-2019 — Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Benzo(a)anthracene	56-55-3	10	1.00	**2.43**	ug/L	D
Chrysene	218-01-9	10	1.00	**2.86**	ug/L	D
Benzofluoranthenes, Total		10	2.00	**2.12**	ug/L	D
Benzo(a)pyrene	50-32-8	10	1.00	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	10	1.00	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	10	1.00	ND	ug/L	U
Surrogate: 2-Methylnaphthalene-d10			*31-120 %*	*57.1*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14			*10-125 %*	*64.6*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

MW-01S-20190312

19C0223-16RE1 (Water)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 03/12/2019 12:12
Instrument: FID3 Analyst: VTS — Analyzed: 03/28/2019 17:33

Sample Preparation:	Preparation Method: EPA 3510C SepF		Extract ID: 19C0223-16RE1 D 01
	Preparation Batch: BHC0414	Sample Size: 500 mL	
	Prepared: 15-Mar-2019	Final Volume: 1 mL	
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 19C0223-16RE1 D 01
	Cleanup Batch: CHC0181	Initial Volume: 1 mL	
	Cleaned: 26-Mar-2019	Final Volume: 1 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:19C0223-16RE1 D 01
	Cleanup Batch: CHC0179	Initial Volume: 1 mL	
	Cleaned: 26-Mar-2019	Final Volume: 1 mL	

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	10	1000	**5150**	ug/L	D
HC ID: DRO						
Motor Oil Range Organics (C24-C38)	RRO	10	2000	ND	ug/L	U
Creosote Range Organics (C12-C22)	8001-58-9	10	2000	**35000**	ug/L	D
HC ID: CREOSOTE						
Surrogate: o-Terphenyl			*50-150 %*	*93.1*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

Volatile Organic Compounds - Quality Control

Batch BHC0538 - EPA 5030 (Purge and Trap)

Instrument: NT3 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BHC0538-BLK2)				Prepared: 19-Mar-2019 Analyzed: 19-Mar-2019 12:13						
Gasoline Range Organics (Tol-Nap)	ND	100	ug/L							U
Surrogate: Toluene-d8	5.03		ug/L	*5.00*		*101*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.09		ug/L	*5.00*		*102*	*80-120*			
LCS (BHC0538-BS2)				Prepared: 19-Mar-2019 Analyzed: 19-Mar-2019 10:03						
Gasoline Range Organics (Tol-Nap)	945	100	ug/L	1000		94.5	72-128			
Surrogate: Toluene-d8	5.11		ug/L	*5.00*		*102*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.09		ug/L	*5.00*		*102*	*80-120*			
LCS Dup (BHC0538-BSD2)				Prepared: 19-Mar-2019 Analyzed: 19-Mar-2019 10:29						
Gasoline Range Organics (Tol-Nap)	1020	100	ug/L	1000		102	72-128	7.88	30	
Surrogate: Toluene-d8	5.03		ug/L	*5.00*		*101*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.12		ug/L	*5.00*		*102*	*80-120*			

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

Volatile Organic Compounds - Quality Control

Batch BHC0585 - EPA 5030 (Purge and Trap)

Instrument: NT3 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BHC0585-BLK2)				Prepared: 20-Mar-2019 Analyzed: 20-Mar-2019 14:01						
Gasoline Range Organics (Tol-Nap)	ND	100	ug/L							U
Surrogate: Toluene-d8	5.09		ug/L	*5.00*		*102*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.82		ug/L	*5.00*		*96.5*	*80-120*			
LCS (BHC0585-BS2)				Prepared: 20-Mar-2019 Analyzed: 20-Mar-2019 13:09						
Gasoline Range Organics (Tol-Nap)	913	100	ug/L	1000		91.3	72-128			
Surrogate: Toluene-d8	4.91		ug/L	*5.00*		*98.2*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.00		ug/L	*5.00*		*100*	*80-120*			
LCS Dup (BHC0585-BSD2)				Prepared: 20-Mar-2019 Analyzed: 20-Mar-2019 13:35						
Gasoline Range Organics (Tol-Nap)	956	100	ug/L	1000		95.6	72-128	4.56	30	
Surrogate: Toluene-d8	4.99		ug/L	*5.00*		*99.9*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.00		ug/L	*5.00*		*99.9*	*80-120*			

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

Semivolatile Organic Compounds - Quality Control

Batch BHC0419 - EPA 3510C SepF

Instrument: NT12 Analyst: JZ

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BHC0419-BLK1)				Prepared: 16-Mar-2019 Analyzed: 27-Mar-2019 11:52						
Naphthalene	ND	1.0	ug/L							U
Acenaphthylene	ND	1.0	ug/L							U
Acenaphthene	ND	1.0	ug/L							U
2-Methylnaphthalene	ND	1.0	ug/L							U
Dibenzofuran	ND	1.0	ug/L							U
Fluorene	ND	1.0	ug/L							U
Pentachlorophenol	ND	10.0	ug/L							U
Phenanthrene	ND	1.0	ug/L							U
Anthracene	ND	1.0	ug/L							U
Carbazole	ND	1.0	ug/L							U
Fluoranthene	ND	1.0	ug/L							U
Pyrene	ND	1.0	ug/L							U
Benzo(a)anthracene	ND	1.0	ug/L							U
Chrysene	ND	1.0	ug/L							U
Benzo(a)pyrene	ND	1.0	ug/L							U
Indeno(1,2,3-cd)pyrene	ND	1.0	ug/L							U
Dibenzo(a,h)anthracene	ND	1.0	ug/L							U
Benzo(g,h,i)perylene	ND	1.0	ug/L							U
1-Methylnaphthalene	ND	1.0	ug/L							U
Surrogate: 2-Fluorobiphenyl	18.7		ug/L	*25.0*		*74.7*	*54.4-120*			
Surrogate: 2,4,6-Tribromophenol	32.1		ug/L	*37.5*		*85.7*	*49.3-128*			*Q*
Surrogate: p-Terphenyl-d14	19.0		ug/L	*25.0*		*76.0*	*60-120*			
LCS (BHC0419-BS1)				Prepared: 16-Mar-2019 Analyzed: 27-Mar-2019 12:26						
Naphthalene	16.0	1.0	ug/L	25.0		63.9	51.9-120			
Acenaphthylene	16.5	1.0	ug/L	25.0		66.0	56.5-120			
Acenaphthene	16.5	1.0	ug/L	25.0		66.0	60.9-120			
2-Methylnaphthalene	16.4	1.0	ug/L	25.0		65.6	56.5-120			
Dibenzofuran	18.5	1.0	ug/L	25.0		73.8	61.9-120			
Fluorene	17.9	1.0	ug/L	25.0		71.4	62.3-120			
Pentachlorophenol	62.7	10.0	ug/L	75.0		83.6	40.7-124			
Phenanthrene	18.4	1.0	ug/L	25.0		73.5	61-120			
Anthracene	17.4	1.0	ug/L	25.0		69.7	64.6-120			
Carbazole	16.6	1.0	ug/L	25.0		66.3	64.6-120			
Fluoranthene	18.9	1.0	ug/L	25.0		75.6	67.9-120			

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

Semivolatile Organic Compounds - Quality Control

Batch BHC0419 - EPA 3510C SepF

Instrument: NT12 Analyst: JZ

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BHC0419-BS1)				Prepared: 16-Mar-2019 Analyzed: 27-Mar-2019 12:26						
Pyrene	14.9	1.0	ug/L	25.0		59.4	66.4-120			*, Q
Benzo(a)anthracene	18.3	1.0	ug/L	25.0		73.0	65.9-120			
Chrysene	19.4	1.0	ug/L	25.0		77.6	61.5-120			
Benzo(a)pyrene	17.9	1.0	ug/L	25.0		71.4	74-121			*
Indeno(1,2,3-cd)pyrene	18.2	1.0	ug/L	25.0		73.0	55.6-120			
Dibenzo(a,h)anthracene	18.6	1.0	ug/L	25.0		74.2	55-120			
Benzo(g,h,i)perylene	17.6	1.0	ug/L	25.0		70.4	49.4-120			
1-Methylnaphthalene	17.6	1.0	ug/L	25.0		70.6	54.4-120			
Surrogate: 2-Fluorobiphenyl	18.1		ug/L	*25.0*		*72.3*	*54.4-120*			
Surrogate: 2,4,6-Tribromophenol	36.0		ug/L	*37.5*		*96.1*	*49.3-128*			*Q*
Surrogate: p-Terphenyl-d14	17.1		ug/L	*25.0*		*68.4*	*60-120*			
LCS Dup (BHC0419-BSD1)				Prepared: 16-Mar-2019 Analyzed: 27-Mar-2019 13:01						
Naphthalene	15.7	1.0	ug/L	25.0		62.6	51.9-120	2.06	30	
Acenaphthylene	15.7	1.0	ug/L	25.0		62.8	56.5-120	4.96	30	
Acenaphthene	15.5	1.0	ug/L	25.0		61.8	60.9-120	6.59	30	
2-Methylnaphthalene	15.8	1.0	ug/L	25.0		63.1	56.5-120	3.90	30	
Dibenzofuran	17.4	1.0	ug/L	25.0		69.4	61.9-120	6.18	30	
Fluorene	16.9	1.0	ug/L	25.0		67.8	62.3-120	5.25	30	
Pentachlorophenol	60.0	10.0	ug/L	75.0		80.0	40.7-124	4.39	30	
Phenanthrene	17.4	1.0	ug/L	25.0		69.8	61-120	5.18	30	
Anthracene	16.7	1.0	ug/L	25.0		66.9	64.6-120	4.21	30	
Carbazole	15.9	1.0	ug/L	25.0		63.5	64.6-120	4.30	30	*
Fluoranthene	18.3	1.0	ug/L	25.0		73.2	67.9-120	3.17	30	
Pyrene	14.9	1.0	ug/L	25.0		59.4	66.4-120	0.02	30	*, Q
Benzo(a)anthracene	17.6	1.0	ug/L	25.0		70.3	65.9-120	3.79	30	
Chrysene	18.4	1.0	ug/L	25.0		73.5	61.5-120	5.37	30	
Benzo(a)pyrene	17.2	1.0	ug/L	25.0		68.6	74-121	4.01	30	*
Indeno(1,2,3-cd)pyrene	17.4	1.0	ug/L	25.0		69.7	55.6-120	4.54	30	
Dibenzo(a,h)anthracene	17.6	1.0	ug/L	25.0		70.6	55-120	5.02	30	
Benzo(g,h,i)perylene	16.8	1.0	ug/L	25.0		67.1	49.4-120	4.79	30	
1-Methylnaphthalene	17.2	1.0	ug/L	25.0		68.9	54.4-120	2.40	30	
Surrogate: 2-Fluorobiphenyl	16.9		ug/L	*25.0*		*67.5*	*54.4-120*			
Surrogate: 2,4,6-Tribromophenol	33.0		ug/L	*37.5*		*88.1*	*49.3-128*			*Q*

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

Semivolatile Organic Compounds - Quality Control

Batch BHC0419 - EPA 3510C SepF

Instrument: NT12 Analyst: JZ

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BHC0419-BSD1)				Prepared: 16-Mar-2019		Analyzed: 27-Mar-2019 13:01				
Surrogate: p-Terphenyl-d14	16.5		ug/L	*25.0*		*65.9*	*60-120*			

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

Semivolatile Organic Compounds - SIM - Quality Control

Batch BHC0413 - EPA 3520C (Liq Liq)

Instrument: NT8 Analyst: JZ

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BHC0413-BLK1)				Prepared: 14-Mar-2019 Analyzed: 26-Mar-2019 18:54						
Benzo(a)anthracene	ND	0.10	ug/L							U
Chrysene	ND	0.10	ug/L							U
Benzofluoranthenes, Total	ND	0.20	ug/L							U
Benzo(a)pyrene	ND	0.10	ug/L							U
Indeno(1,2,3-cd)pyrene	ND	0.10	ug/L							U
Dibenzo(a,h)anthracene	ND	0.10	ug/L							U
Surrogate: 2-Methylnaphthalene-d10	1.85		ug/L	*3.00*		*61.8*	*31-120*			
Surrogate: Dibenzo[a,h]anthracene-d14	2.95		ug/L	*3.00*		*98.4*	*10-125*			
LCS (BHC0413-BS1)				Prepared: 14-Mar-2019 Analyzed: 26-Mar-2019 19:20						
Benzo(a)anthracene	2.30	0.10	ug/L	3.00		76.8	37-120			
Chrysene	2.62	0.10	ug/L	3.00		87.4	48-120			
Benzofluoranthenes, Total	8.32	0.20	ug/L	9.00		92.4	46-120			
Benzo(a)pyrene	2.14	0.10	ug/L	3.00		71.5	25-120			
Indeno(1,2,3-cd)pyrene	2.46	0.10	ug/L	3.00		82.1	32-120			
Dibenzo(a,h)anthracene	2.46	0.10	ug/L	3.00		82.1	21-120			
Surrogate: 2-Methylnaphthalene-d10	1.55		ug/L	*3.00*		*51.8*	*31-120*			
Surrogate: Dibenzo[a,h]anthracene-d14	2.71		ug/L	*3.00*		*90.3*	*10-125*			
LCS Dup (BHC0413-BSD1)				Prepared: 14-Mar-2019 Analyzed: 26-Mar-2019 19:46						
Benzo(a)anthracene	2.19	0.10	ug/L	3.00		72.9	37-120	5.22	30	
Chrysene	2.45	0.10	ug/L	3.00		81.8	48-120	6.58	30	
Benzofluoranthenes, Total	7.91	0.20	ug/L	9.00		87.8	46-120	5.09	30	
Benzo(a)pyrene	2.07	0.10	ug/L	3.00		68.9	25-120	3.69	30	
Indeno(1,2,3-cd)pyrene	2.33	0.10	ug/L	3.00		77.7	32-120	5.51	30	
Dibenzo(a,h)anthracene	2.32	0.10	ug/L	3.00		77.3	21-120	6.07	30	
Surrogate: 2-Methylnaphthalene-d10	1.74		ug/L	*3.00*		*58.2*	*31-120*			
Surrogate: Dibenzo[a,h]anthracene-d14	2.64		ug/L	*3.00*		*88.1*	*10-125*			

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	01-Apr-2019 15:35

Petroleum Hydrocarbons - Quality Control

Batch BHC0414 - EPA 3510C SepF

Instrument: FID3 Analyst: VTS

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BHC0414-BLK1)				Prepared: 15-Mar-2019 Analyzed: 27-Mar-2019 18:54						
Diesel Range Organics (C12-C24)	ND	100	ug/L							U
Motor Oil Range Organics (C24-C38)	ND	200	ug/L							U
Creosote Range Organics (C12-C22)	ND	200	ug/L							U
Surrogate: o-Terphenyl	232		ug/L	*225*		*103*	*50-150*			
LCS (BHC0414-BS1)				Prepared: 15-Mar-2019 Analyzed: 27-Mar-2019 19:16						
Diesel Range Organics (C12-C24)	2820	100	ug/L	3000		94.0	56-120			
Surrogate: o-Terphenyl	495		ug/L	*450*		*110*	*50-150*			
LCS Dup (BHC0414-BSD1)				Prepared: 15-Mar-2019 Analyzed: 27-Mar-2019 19:38						
Diesel Range Organics (C12-C24)	2910	100	ug/L	3000		97.0	56-120	3.16	30	
Surrogate: o-Terphenyl	255		ug/L	*225*		*113*	*50-150*			

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Phenols - Quality Control

Batch BHC0422 - EPA 3510C SepF

Instrument: ECD8 Analyst: yz

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BHC0422-BLK1)				Prepared: 15-Mar-2019 Analyzed: 26-Mar-2019 22:47						
Pentachlorophenol	0.98	0.25	ug/L							
Surrogate: 2,4,6-Tribromophenol	1.64		ug/L	*2.50*		*65.7*	*26-120*			
Surrogate: 2,4,6-Tribromophenol [2C]	1.41		ug/L	*2.50*		*56.6*	*26-120*			
LCS (BHC0422-BS1)				Prepared: 15-Mar-2019 Analyzed: 26-Mar-2019 23:05						
Pentachlorophenol	2.20	0.25	ug/L	2.50		88.2	48-120			B
Surrogate: 2,4,6-Tribromophenol	1.88		ug/L	*2.50*		*75.2*	*26-120*			
Surrogate: 2,4,6-Tribromophenol [2C]	1.71		ug/L	*2.50*		*68.6*	*26-120*			
LCS Dup (BHC0422-BSD1)				Prepared: 15-Mar-2019 Analyzed: 26-Mar-2019 23:23						
Pentachlorophenol	2.08	0.25	ug/L	2.50		83.1	48-120	5.93	30	B
Surrogate: 2,4,6-Tribromophenol	1.94		ug/L	*2.50*		*77.6*	*26-120*			
Surrogate: 2,4,6-Tribromophenol [2C]	1.73		ug/L	*2.50*		*69.1*	*26-120*			

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Certified Analyses included in this Report

Analyte	Certifications
EPA 8270D in Water	
Phenol	WADOE,DoD-ELAP,NELAP,CALAP
bis(2-chloroethyl) ether	WADOE,DoD-ELAP,NELAP,CALAP
2-Chlorophenol	WADOE,DoD-ELAP,NELAP,CALAP
1,3-Dichlorobenzene	WADOE,DoD-ELAP,NELAP,CALAP
1,4-Dichlorobenzene	WADOE,DoD-ELAP,NELAP,CALAP
1,2-Dichlorobenzene	WADOE,DoD-ELAP,NELAP,CALAP
Benzyl alcohol	WADOE,DoD-ELAP,NELAP,CALAP
2,2'-Oxybis(1-chloropropane)	WADOE,DoD-ELAP,NELAP,CALAP
2-Methylphenol	WADOE,DoD-ELAP,NELAP,CALAP
Hexachloroethane	WADOE,DoD-ELAP,NELAP,CALAP
N-Nitroso-di-n-Propylamine	WADOE,DoD-ELAP,NELAP,CALAP
4-Methylphenol	WADOE,DoD-ELAP,NELAP,CALAP
Nitrobenzene	WADOE,DoD-ELAP,NELAP,CALAP
Isophorone	WADOE,DoD-ELAP,NELAP,CALAP
2-Nitrophenol	WADOE,DoD-ELAP,NELAP,CALAP
2,4-Dimethylphenol	WADOE,DoD-ELAP,NELAP,CALAP
Bis(2-Chloroethoxy)methane	WADOE,DoD-ELAP,NELAP,CALAP
2,4-Dichlorophenol	WADOE,DoD-ELAP,NELAP,CALAP
1,2,4-Trichlorobenzene	WADOE,DoD-ELAP,NELAP,CALAP
Naphthalene	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Benzoic acid	WADOE,DoD-ELAP,NELAP,CALAP
4-Chloroaniline	WADOE,DoD-ELAP,NELAP,CALAP
2,6-Dinitrotoluene	WADOE,DoD-ELAP,NELAP,CALAP
Hexachlorobutadiene	WADOE,DoD-ELAP,NELAP,CALAP
4-Chloro-3-Methylphenol	WADOE,DoD-ELAP,NELAP,CALAP
Hexachlorocyclopentadiene	WADOE,DoD-ELAP,NELAP,CALAP
2,4,6-Trichlorophenol	WADOE,DoD-ELAP,NELAP,CALAP
2,4,5-Trichlorophenol	WADOE,DoD-ELAP,NELAP,CALAP
2-Chloronaphthalene	WADOE,DoD-ELAP,NELAP,CALAP
2-Nitroaniline	WADOE,DoD-ELAP,NELAP,CALAP
Acenaphthylene	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Dimethylphthalate	WADOE,DoD-ELAP,NELAP,CALAP
Acenaphthene	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
3-Nitroaniline	WADOE,DoD-ELAP,NELAP,CALAP
2-Methylnaphthalene	WADOE,DoD-ELAP,NELAP,CALAP,ADEC

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2,4-Dinitrophenol	WADOE,DoD-ELAP,NELAP,CALAP
Dibenzofuran	WADOE,DoD-ELAP,NELAP,CALAP
4-Nitrophenol	WADOE,DoD-ELAP,NELAP,CALAP
2,4-Dinitrotoluene	WADOE,DoD-ELAP,NELAP,CALAP
Fluorene	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
4-Chlorophenylphenyl ether	WADOE,DoD-ELAP,NELAP,CALAP
Diethyl phthalate	WADOE,DoD-ELAP,NELAP,CALAP
4-Nitroaniline	WADOE,DoD-ELAP,NELAP,CALAP
4,6-Dinitro-2-methylphenol	WADOE,DoD-ELAP,NELAP,CALAP
N-Nitrosodiphenylamine	WADOE,DoD-ELAP,NELAP,CALAP
4-Bromophenyl phenyl ether	WADOE,DoD-ELAP,NELAP,CALAP
Hexachlorobenzene	WADOE,DoD-ELAP,NELAP,CALAP
Pentachlorophenol	WADOE,DoD-ELAP,NELAP,CALAP
Phenanthrene	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Anthracene	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Carbazole	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Di-n-butylphthalate	WADOE,DoD-ELAP,NELAP,CALAP
Fluoranthene	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Pyrene	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Butylbenzylphthalate	WADOE,DoD-ELAP,NELAP,CALAP
Benzo(a)anthracene	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
3,3'-Dichlorobenzidine	WADOE,DoD-ELAP,NELAP,CALAP
Chrysene	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
bis(2-Ethylhexyl)phthalate	WADOE,DoD-ELAP,NELAP,CALAP
Di-n-Octylphthalate	WADOE,DoD-ELAP,NELAP,CALAP
Benzo(b)fluoranthene	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Benzo(k)fluoranthene	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Benzo(a)pyrene	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Indeno(1,2,3-cd)pyrene	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Dibenzo(a,h)anthracene	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Benzo(g,h,i)perylene	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Benzofluoranthenes, Total	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
N-Nitrosodimethylamine	WADOE,DoD-ELAP,NELAP,CALAP
Aniline	WADOE,DoD-ELAP,NELAP,CALAP
1-Methylnaphthalene	WADOE,DoD-ELAP,NELAP,CALAP,ADEC
Azobenzene (1,2-DP-Hydrazine)	WADOE,NELAP,CALAP
Benzidine	WADOE,DoD-ELAP
Retene	WADOE,DoD-ELAP
Pyridine	WADOE,DoD-ELAP
2,6-Dichlorophenol	WADOE

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alpha-Terpineol	WADOE,DoD-ELAP
1,4-Dioxane	WADOE,DoD-ELAP
2,3,4,6-Tetrachlorophenol	WADOE,DoD-ELAP
Triphenyl Phosphate	WADOE,DoD-ELAP
Butyl Diphenyl Phosphate	WADOE,DoD-ELAP
Dibutyl Phenyl Phosphate	WADOE,DoD-ELAP
Tributyl Phosphate	WADOE,DoD-ELAP
Butylated Hydroxytoluene	WADOE,DoD-ELAP
Tetrachloroguaiacol	WADOE,DoD-ELAP
3,4,5-Trichloroguaiacol	WADOE
3,4,6-Trichloroguaiacol	WADOE
4,5,6-Trichloroguaiacol	WADOE
Guaiacol	WADOE
1,2,4,5-Tetrachlorobenzene	WADOE

EPA 8270D-SIM in Water

Naphthalene	DoD-ELAP
2-Methylnaphthalene	DoD-ELAP
1-Methylnaphthalene	DoD-ELAP
2-Chloronaphthalene	DoD-ELAP
Biphenyl	DoD-ELAP
2,6-Dimethylnaphthalene	DoD-ELAP
Acenaphthylene	DoD-ELAP
Acenaphthene	DoD-ELAP
Dibenzofuran	DoD-ELAP
2,3,5-Trimethylnaphthalene	DoD-ELAP
Fluorene	DoD-ELAP
Dibenzothiophene	DoD-ELAP
Phenanthrene	DoD-ELAP
Anthracene	DoD-ELAP
Carbazole	DoD-ELAP
1-Methylphenanthrene	DoD-ELAP
Fluoranthene	DoD-ELAP
Pyrene	DoD-ELAP
Benzo(a)anthracene	DoD-ELAP
Chrysene	DoD-ELAP
Benzo(b)fluoranthene	DoD-ELAP
Benzo(k)fluoranthene	DoD-ELAP
Benzo(j)fluoranthene	DoD-ELAP
Benzofluoranthenes, Total	DoD-ELAP

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Benzo(e)pyrene	DoD-ELAP
Benzo(a)pyrene	DoD-ELAP
Perylene	DoD-ELAP
Indeno(1,2,3-cd)pyrene	DoD-ELAP
Dibenzo(a,h)anthracene	DoD-ELAP
Benzo(g,h,i)perylene	DoD-ELAP
Benzo(b)thiophene	DoD-ELAP

NWTPH-Dx in Water

Diesel Range Organics (C12-C24)	DoD-ELAP,NELAP,WADOE
Diesel Range Organics (C10-C25)	DoD-ELAP,NELAP,WADOE
Diesel Range Organics (Tol-C18)	DoD-ELAP,NELAP,WADOE
Diesel Range Organics (C10-C24)	DoD-ELAP,NELAP,WADOE
Diesel Range Organics (C10-C28)	DoD-ELAP,NELAP,WADOE
Diesel Range Organics (C12-C22)	DoD-ELAP
Diesel Range Organics (C12-C25)	DoD-ELAP
Motor Oil Range Organics (C24-C38)	DoD-ELAP,NELAP,WADOE
Motor Oil Range Organics (C25-C36)	DoD-ELAP,NELAP,WADOE
Motor Oil Range Organics (C24-C40)	DoD-ELAP,NELAP,WADOE
Residual Range Organics (C23-C32)	DoD-ELAP
Mineral Spirits Range Organics (Tol-C12)	DoD-ELAP,NELAP,WADOE
Mineral Oil Range Organics (C16-C28)	DoD-ELAP,NELAP,WADOE
Kerosene Range Organics (Tol-C18)	DoD-ELAP,NELAP,WADOE
JP8 Range Organics (C8-C18)	DoD-ELAP,NELAP,WADOE
JP5 Range Organics (C10-C16)	DoD-ELAP,NELAP,WADOE
JP4 Range Organics (Tol-C14)	DoD-ELAP,NELAP,WADOE
Jet-A Range Organics (C10-C18)	DoD-ELAP,NELAP,WADOE
Creosote Range Organics (C12-C22)	DoD-ELAP,NELAP,WADOE
Bunker C Range Organics (C10-C38)	DoD-ELAP,NELAP,WADOE
Stoddard Range Organics (C8-C12)	DoD-ELAP,NELAP,WADOE
Transformer Oil Range Organics (C12-C28)	DoD-ELAP,NELAP,WADOE

NWTPHg in Water

Gasoline Range Organics (Tol-Nap)	WADOE,DoD-ELAP
Gasoline Range Organics (2MP-TMB)	WADOE,DoD-ELAP
Gasoline Range Organics (Tol-C12)	WADOE,DoD-ELAP
Gasoline Range Organics (C6-C10)	WADOE,ADEC,DoD-ELAP
Gasoline Range Organics (C5-C12)	WADOE,DoD-ELAP

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Code	Description	Number	Expires
ADEC	Alaska Dept of Environmental Conservation	17-015	01/31/2021
CALAP	California Department of Public Health CAELAP	2748	06/30/2019
DoD-ELAP	DoD-Environmental Laboratory Accreditation Program	66169	01/01/2021
NELAP	ORELAP - Oregon Laboratory Accreditation Program	WA100006-011	05/12/2019
WADOE	WA Dept of Ecology	C558	06/30/2019
WA-DW	Ecology - Drinking Water	C558	06/30/2019

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Notes and Definitions

*	Flagged value is not within established control limits.
B	This analyte was detected in the method blank.
D	The reported value is from a dilution
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL)
H	Hold time violation - Hold time was exceeded.
Q	Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20% RSD, <20% drift or minimum RRF)
U	This analyte is not detected above the reporting limit (RL) or if noted, not detected above the limit of detection (LOD).
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
[2C]	Indicates this result was quantified on the second column on a dual column analysis.