Groundwater Monitoring Report
April 2017 through March 2018
Cascade Pole Site
Olympia, Washington

September 14, 2018

Prepared for

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1.0 INTRODUCTION

This report summarizes groundwater monitoring activities conducted between April 1, 2017 and March 31, 2018 at the Cascade Pole Site (CPC; Site), in Olympia, Washington. This report is the eleventh 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 (October 2017 and March 2018). 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, D; MW-02S, D; and MW-05S, D) have been collected throughout the reporting period (April 2017 through March 2018).

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 October 2017 during a time of low groundwater elevations, which corresponded to a typical “dry season”, and in March 2018 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 (LAI 2007). 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, D; MW-02S, D; and MW-05S, D; and CW-13).

Groundwater samples collected during the planned groundwater quality monitoring events 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-Gx; 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 (October 2017 and March 2018) are presented in Appendix B.

3.1 Hydraulic Control

The LTGCM plan indicates that hydraulic control for the Site will be maintained by a series of shallow extraction wells directing water to the onsite treatment system. The short-term groundwater elevation performance criteria 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 criteria were met at well PZ-12 (northwest portion of the Site), and were met the majority of the time at well LW-3 except during April, May, and June, 2017, and March 2018 (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 observed at perimeter well LW-4R exceeded the short-term goal ten out of the eleven measurements collected during this reporting period (a groundwater elevation could not be collected during November 2017 at LW-4R due to materials storage over the well location). The measurement where the goal was not exceeded occurred during the “wet season” (February 2018).
- Groundwater elevations observed at perimeter well MW-02S exceeded the short-term goal eleven out of the twelve measurements collected during this reporting period. The measurement where the goal was not exceeded occurred during the dry season (October 2017).
- Groundwater elevations observed at perimeter well MW-05S exceeded the short-term goal nine out of the twelve measurements collected during this reporting period. The measurements where the goal was not exceeded were observed during the dry season (August, September, and October 2017).

According to the Port, extraction wells CW-1, CW-2, CW-3, and CW-8 operated nearly full time during this reporting period, while remaining extraction wells (CW-4 through CW-7, CW-9, and CW-10) operated between 5 to 15 percent (%) of the time. 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 (October 2017 and March 2018) 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 cleanup 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. During the October 2017 event (typical dry season), low level detections of acenaphthene (1.5 µg/L) and 1-methylnaphthalene (1.4 µg/L) were reported at PZ-17; however, there are no cleanup screening levels established for either compound. During the March 2018 event, TPH-G was reported also at exterior shallow well PZ-17 at a concentration of 344 µg/L; however, this low level concentration is below the cleanup screening level of 1,000 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 cleanup screening levels are anticipated.

No constituents were detected above laboratory reporting limits at PZ-12 or CW-13 during the reporting period. Low level concentrations (below the cleanup screening levels) of a number of compounds were detected at several wells (LW-4R, MW-02S, and MW-05S). Creosote range hydrocarbons (654 µg/L) were reported above the cleanup screening level at LW-3 during the October 2017 event. Shallow monitoring well MW-01S reported concentrations above the cleanup screening levels during both the October 2017 event and the March 2018 event. Compounds with concentrations above the cleanup screening level at MW-01S include naphthalene (October event only), pentachlorophenol, total cPAH values, TPH-G, TPH-D, TPH-O (October event only), and creosote-range TPH. The observed concentrations were within historical ranges.

3.2.3 Deep Wells

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 deep wells indicate that concentrations of Site constituents of concern were below the respective cleanup screening levels during this reporting period. Deep monitoring well MW-02D 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 creosote during the October 2017 event. Well MW-05D had low level detections of naphthalene, acenaphthene, fluorine, and 1-methlynaphthalene during the October 2017 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 (except April, May, and June 2017, and March 2018). Maintenance of the extraction wells is recommended to increase the individual well operational time.

Analytical results indicate no exceedances of the groundwater cleanup screening levels in the majority of the wells (PZ-12, PZ-13, PZ-17, PZ-18, PZ-19, LW-4R, MW-02S, MW-05S, MW-01D, MW-02D, MW-05D, and CW-13). Groundwater cleanup screening levels were exceeded for a number of constituents in samples collected from interior shallow wells MW-01S and for creosote at LW-3. Exceedances at MW-01S and LW-3 are anticipated as both wells are located inside the containment system perimeter.

The next semiannual sampling event is currently scheduled for late August to early October 2018, to coincide with typical low groundwater elevations representative of a “dry season” event. The “wet season” event will be conducted in February or March 2019, 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

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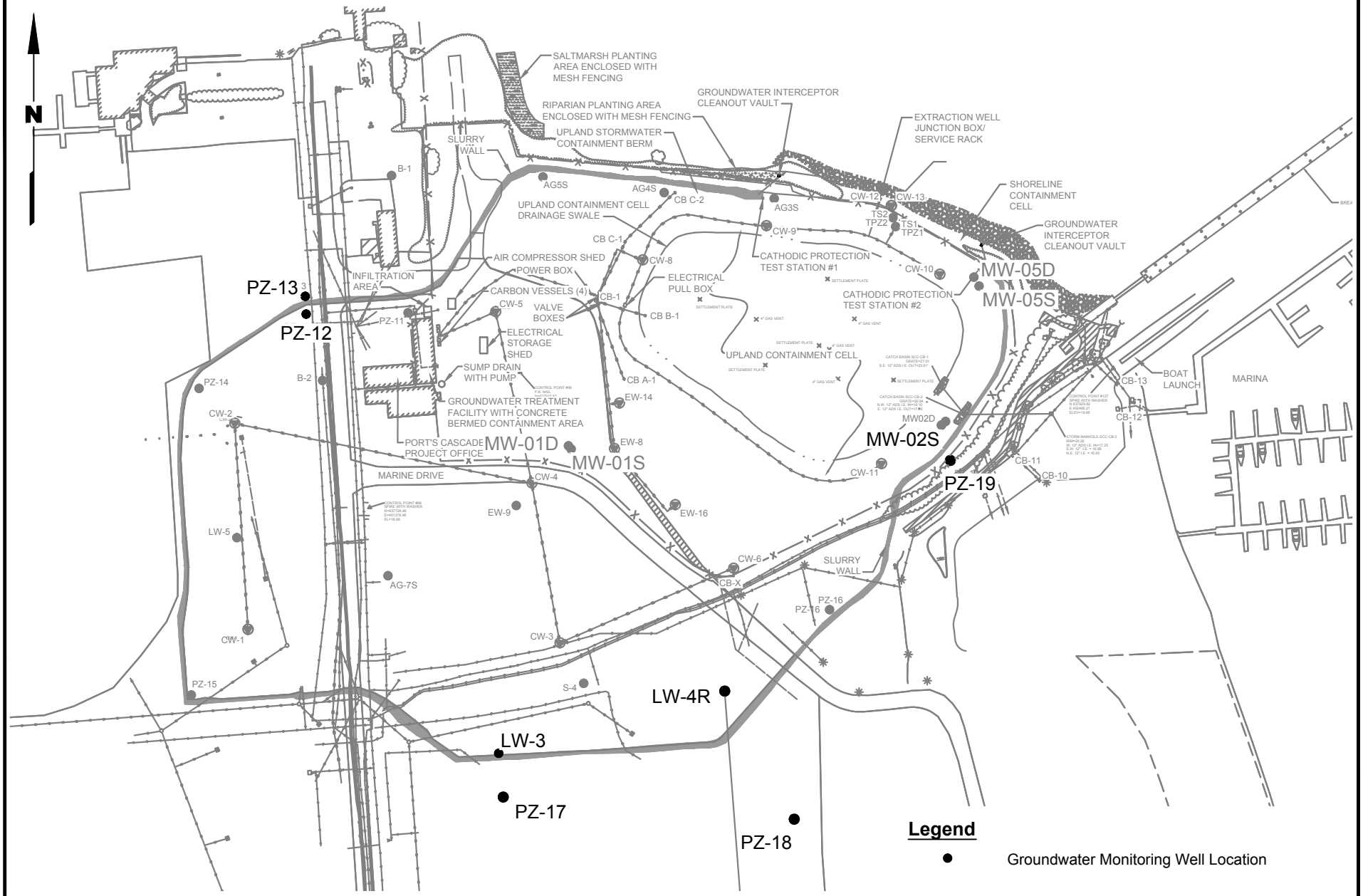
LAI. 2000. Technical Memorandum: Development of Groundwater Hydraulic Controls, Extraction Well Locations and Flow Rates, Cascade Pole Site, Olympia, Washington. Landau Associates, Inc.

LAI. 2007. Groundwater Compliance Monitoring Plan, Cascade Pole Site, Olympia, Washington. Landau Associates, Inc. September 21.



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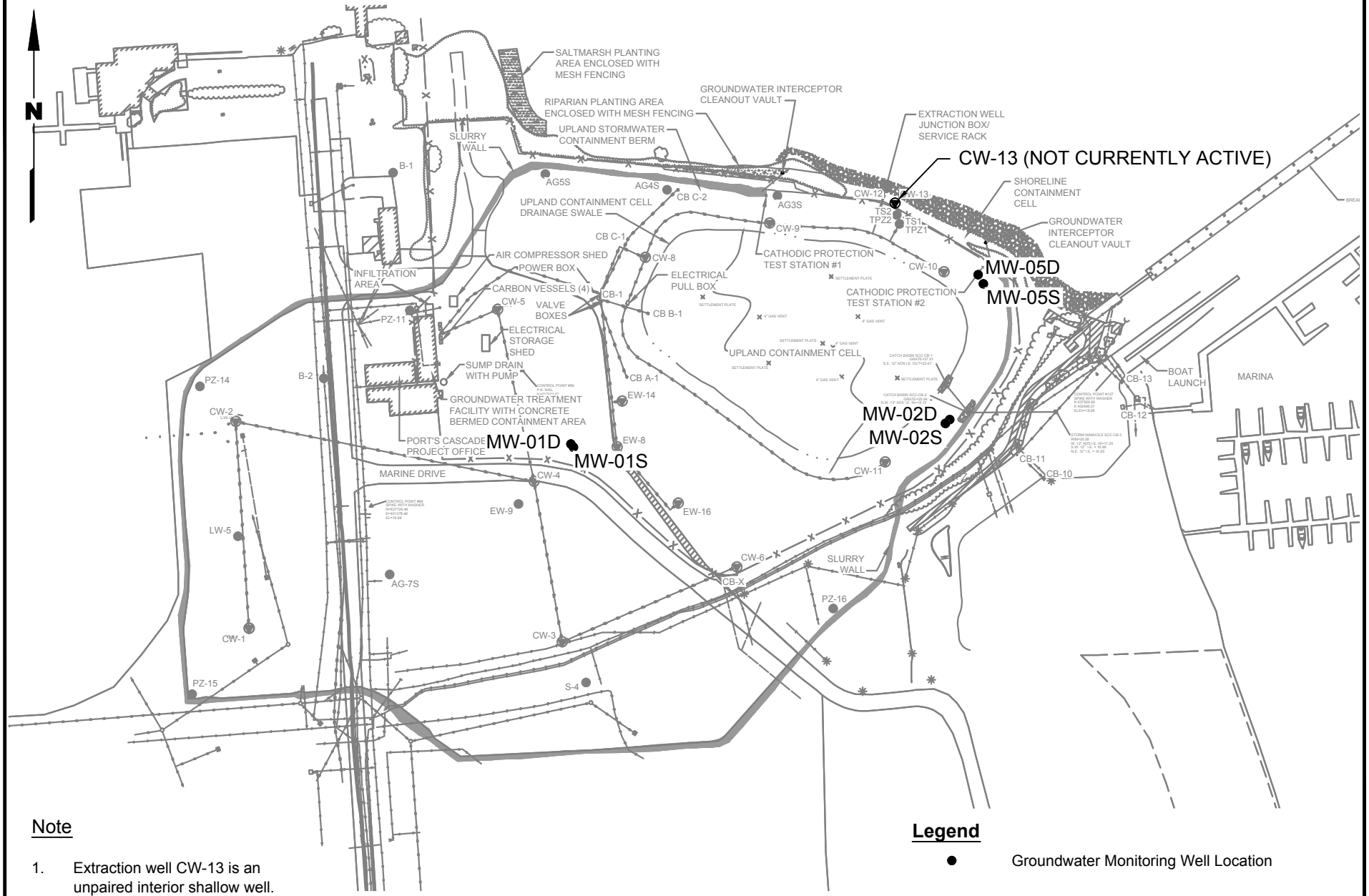
Olympia, Washington

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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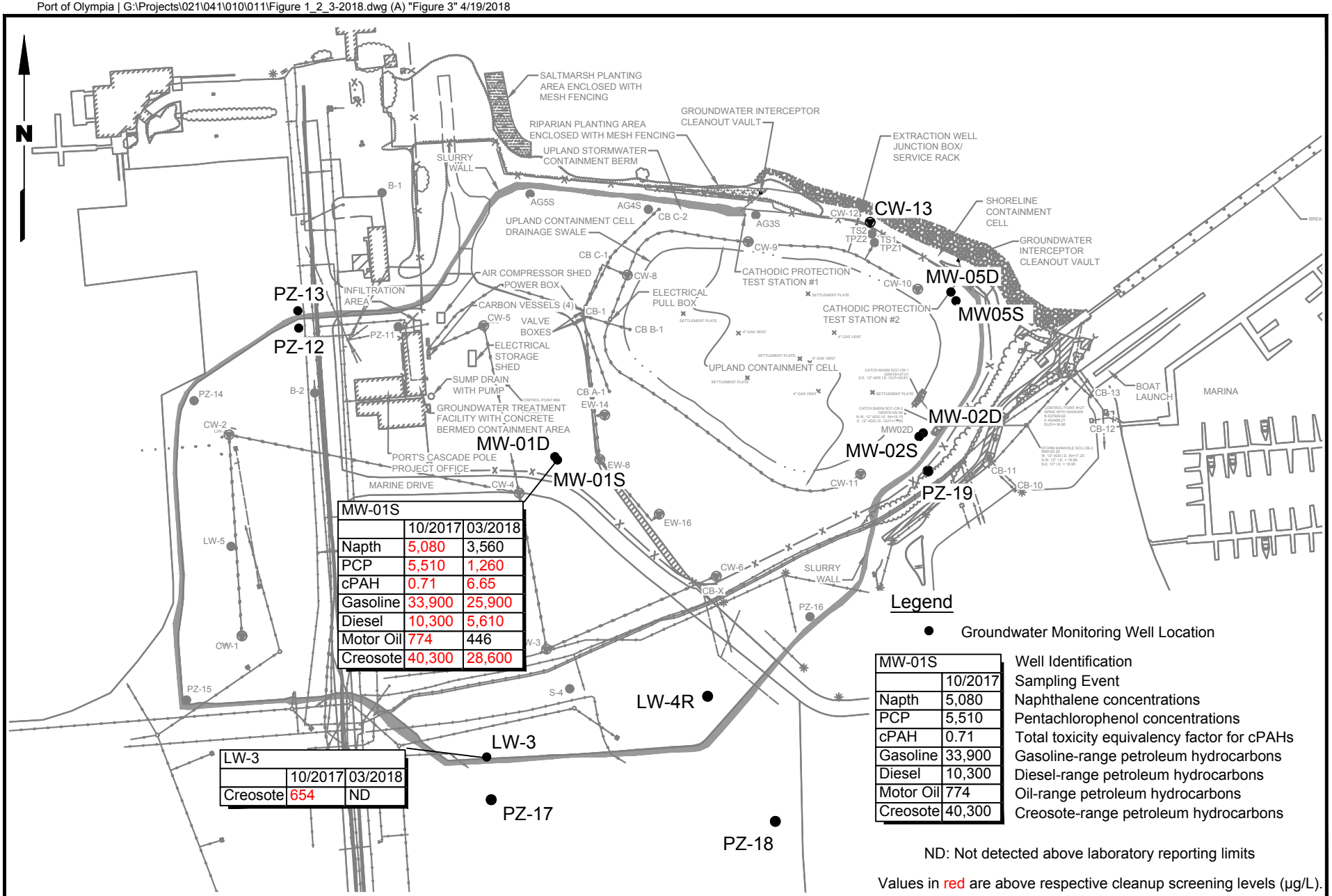
Deep and Shallow Interior Groundwater Monitoring Well Pairs

Figure 2

Port of Olympia | G:\Projects\021\041\010\011\Figure 1_2_3-2018.dwg (A) "Figure 3" 4/19/2018



MW-01S		
	10/2017	03/2018
Napth	5,080	3,560
PCP	5,510	1,260
cPAH	0.71	6.65
Gasoline	33,900	25,900
Diesel	10,300	5,610
Motor Oil	774	446
Creosote	40,300	28,600

LW-3		
	10/2017	03/2018
Creosote	654	ND

Legend

● Groundwater Monitoring Well Location

MW-01S	
	10/2017
Napth	5,080
PCP	5,510
cPAH	0.71
Gasoline	33,900
Diesel	10,300
Motor Oil	774
Creosote	40,300

Well Identification
Sampling Event
Naphthalene concentrations
Pentachlorophenol concentrations
Total toxicity equivalency factor for cPAHs
Gasoline-range petroleum hydrocarbons
Diesel-range petroleum hydrocarbons
Oil-range petroleum hydrocarbons
Creosote-range petroleum hydrocarbons

ND: Not detected above laboratory reporting limits

Values in red are above respective cleanup screening levels (µg/L).

0 200 400
Scale in Feet

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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
4/30/2017	PZ-13	5.69	19.50	13.81	--		
4/30/2017	PZ-12	3.50	19.00	15.50	15.50	No	
5/21/2017	PZ-13	6.27	19.50	13.23	--		
5/21/2017	PZ-12	3.64	19.00	15.36	15.50	No	
6/6/2017	PZ-13	6.64	19.50	12.86	--		
6/6/2017	PZ-12	3.87	19.00	15.13	15.50	No	
7/8/2017	PZ-13	7.06	19.50	12.44	--		
7/8/2017	PZ-12	4.17	19.00	14.83	15.50	No	
8/4/2017	PZ-13	7.18	19.50	12.32	--		
8/4/2017	PZ-12	4.43	19.00	14.57	15.50	No	
9/9/2017	PZ-13	7.12	19.50	12.38	--		
9/9/2017	PZ-12	4.77	19.00	14.23	15.50	No	
10/11/2017	PZ-13	7.32	19.50	12.18	--		
10/11/2017	PZ-12	5.04	19.00	13.96	15.50	No	
11/12/2017	PZ-13	6.01	19.50	13.49	--		
11/12/2017	PZ-12	4.15	19.00	14.85	15.50	No	
12/16/2017	PZ-13	6.34	19.50	13.16	--		
12/16/2017	PZ-12	4.07	19.00	14.93	15.50	No	
1/1/2018	PZ-13	5.12	19.50	14.38	--		
1/1/2018	PZ-12	3.62	19.00	15.38	15.50	No	
2/10/2018	PZ-13	5.73	19.50	13.77	--		
2/10/2018	PZ-12	3.61	19.00	15.39	15.50	No	
3/8/2018	PZ-13	6.19	19.50	13.31	--		
3/8/2018	PZ-12	3.61	19.00	15.39	15.50	No	
4/30/2017	PZ-17	5.62	20.48	14.86	--		
4/30/2017	LW-3	3.73	19.83	16.10	15.50	Yes	
5/21/2017	PZ-17	5.73	20.48	14.75	--		
5/21/2017	LW-3	3.78	19.83	16.05	15.50	Yes	
6/6/2017	PZ-17	5.80	20.48	14.68	--		
6/6/2017	LW-3	3.85	19.83	15.98	15.50	Yes	
7/8/2017	PZ-17	6.09	20.48	14.39	--		
7/8/2017	LW-3	4.77	19.83	15.06	15.50	No	
8/4/2017	PZ-17	6.42	20.48	14.06	--		
8/4/2017	LW-3	4.92	19.83	14.91	15.50	No	
9/9/2017	PZ-17	6.81	20.48	13.67	--		
9/9/2017	LW-3	5.47	19.83	14.36	15.50	No	
10/11/2017	PZ-17	7.04	20.48	13.44	--		
10/11/2017	LW-3	5.55	19.83	14.28	15.50	No	
11/12/2017	PZ-17	6.34	20.48	14.14	--		
11/12/2017	LW-3	5.31	19.83	14.52	15.50	No	
12/16/2017	PZ-17	6.04	20.48	14.44	--		
12/16/2017	LW-3	5.07	19.83	14.76	15.50	No	
1/1/2018	PZ-17	5.98	20.48	14.50	--		
1/1/2018	LW-3	4.71	19.83	15.12	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
2/10/2018	PZ-17	5.60	20.48	14.88	--		
2/10/2018	LW-3	4.50	19.83	15.33	15.50	No	
3/8/2018	PZ-17	8.19	20.48	12.29	--		
3/8/2018	LW-3	3.99	19.83	15.84	15.50	Yes	
4/30/2017	PZ-18	6.33	21.20	14.87	--		
4/30/2017	LW-4R	6.14	22.02	15.88	15.50	Yes	
5/21/2017	PZ-18	6.26	21.20	14.94	--		
5/21/2017	LW-4R	5.68	22.02	16.34	15.50	Yes	
6/6/2017	PZ-18	5.84	21.20	15.36	--		
6/6/2017	LW-4R	5.71	22.02	16.31	15.50	Yes	
7/8/2017	PZ-18	6.68	21.20	14.52	--		
7/8/2017	LW-4R	5.24	22.02	16.78	15.50	Yes	
8/4/2017	PZ-18	6.09	21.20	15.11	--		
8/4/2017	LW-4R	5.27	22.02	16.75	15.50	Yes	
9/9/2017	PZ-18	6.41	21.20	14.79	--		
9/9/2017	LW-4R	5.77	22.02	16.25	15.50	Yes	
10/11/2017	PZ-18	6.89	21.20	14.31	--		
10/11/2017	LW-4R	6.06	22.02	15.96	15.50	Yes	
11/12/2017	PZ-18	6.66	21.20	14.54	--		
11/12/2017	LW-4R	NA	22.02	NA	15.50	--	Well was inaccessible
12/16/2017	PZ-18	7.37	21.20	13.83	--		
12/16/2017	LW-4R	6.36	22.02	15.66	15.50	Yes	
1/1/2018	PZ-18	NA	21.20	NA	--		
1/1/2018	LW-4R	6.38	22.02	15.64	15.50	Yes	
2/10/2018	PZ-18	NA	21.20	NA	--		
2/10/2018	LW-4R	6.86	22.02	15.16	15.50	No	
3/8/2018	PZ-18	5.75	21.20	15.45	--		
3/8/2018	LW-4R	6.46	22.02	15.56	15.50	Yes	
4/30/2017	PZ-19	15.80	23.67	7.87	--		
4/30/2017	MW-02S	14.18	31.96	17.78	15.50	Yes	
5/21/2017	PZ-19	13.84	23.67	9.83	--		
5/21/2017	MW-02S	14.27	31.96	17.69	15.50	Yes	
6/6/2017	PZ-19	15.33	23.67	8.34	--		
6/6/2017	MW-02S	14.77	31.96	17.19	15.50	Yes	
7/8/2017	PZ-19	16.06	23.67	7.61	--		
7/8/2017	MW-02S	15.54	31.96	16.42	15.50	Yes	
8/4/2017	PZ-19	16.10	23.67	7.57	--		
8/4/2017	MW-02S	15.94	31.96	16.02	15.50	Yes	
9/9/2017	PZ-19	13.48	23.67	10.19	--		
9/9/2017	MW-02S	16.43	31.96	15.53	15.50	Yes	
10/11/2017	PZ-19	14.91	23.67	8.76	--		
10/11/2017	MW-02S	16.64	31.96	15.32	15.50	No	
11/12/2017	PZ-19	13.48	23.67	10.19	--		
11/12/2017	MW-02S	15.59	31.96	16.37	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
12/16/2017	PZ-19	13.45	23.67	10.22	--		
12/16/2017	MW-02S	15.20	31.96	16.76	15.50	Yes	
1/1/2018	PZ-19	12.79	23.67	10.88	--		
1/1/2018	MW-02S	14.12	31.96	17.84	15.50	Yes	
2/10/2018	PZ-19	12.54	23.67	11.13	--		
2/10/2018	MW-02S	14.25	31.96	17.71	15.50	Yes	
3/8/2018	PZ-19	12.16	23.67	11.51	--		
3/8/2018	MW-02S	14.24	31.96	17.72	15.50	Yes	
4/30/2017	MW-02S	14.18	31.96	17.78	15.50	Yes	
4/30/2017	MW-02D	21.81	31.81	10.00	--		
5/21/2017	MW-02S	14.27	31.96	17.69	15.50	Yes	
5/21/2017	MW-02D	18.42	31.81	13.39	--		
6/6/2017	MW-02S	14.77	31.96	17.19	15.50	Yes	
6/6/2017	MW-02D	18.30	31.81	13.51	--		
7/8/2017	MW-02S	15.54	31.96	16.42	15.50	Yes	
7/8/2017	MW-02D	19.16	31.81	12.65	--		
8/4/2017	MW-02S	15.94	31.96	16.02	15.50	Yes	
8/4/2017	MW-02D	20.29	31.81	11.52	--		
9/9/2017	MW-02S	16.43	31.96	15.53	15.50	Yes	
9/9/2017	MW-02D	19.48	31.81	12.33	--		
10/11/2017	MW-02S	16.64	31.96	15.32	15.50	No	
10/11/2017	MW-02D	17.53	31.81	14.28	--		
11/12/2017	MW-02S	15.59	31.96	16.37	15.50	Yes	
11/12/2017	MW-02D	16.13	31.81	15.68	--		
12/16/2017	MW-02S	15.20	31.96	16.76	15.50	Yes	
12/16/2017	MW-02D	17.38	31.81	14.43	--		
1/1/2018	MW-02S	14.12	31.96	17.84	15.50	Yes	
1/1/2018	MW-02D	16.93	31.81	14.88	--		
2/10/2018	MW-02S	14.25	31.96	17.71	15.50	Yes	
2/10/2018	MW-02D	17.61	31.81	14.20	--		
3/8/2018	MW-02S	14.24	31.96	17.72	15.50	Yes	
3/8/2018	MW-02D	16.19	31.81	15.62	--		
4/30/2017	MW-01S	5.12	21.64	16.52	--		
4/30/2017	MW-01D	10.72	21.72	11.00	--		
5/21/2017	MW-01S	5.17	21.64	16.47	--		
5/21/2017	MW-01D	8.33	21.72	13.39	--		
6/6/2017	MW-01S	5.43	21.64	16.21	--		
6/6/2017	MW-01D	8.20	21.72	13.52	--		
7/8/2017	MW-01S	5.92	21.64	15.72	--		
7/8/2017	MW-01D	9.39	21.72	12.33	--		
8/4/2017	MW-01S	6.31	21.64	15.33	--		
8/4/2017	MW-01D	10.01	21.72	11.71	--		

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
9/9/2017	MW-01S	6.72	21.64	14.92	--		
9/9/2017	MW-01D	8.69	21.72	13.03	--		
10/11/2017	MW-01S	6.93	21.64	14.71	--		
10/11/2017	MW-01D	8.11	21.72	13.61	--		
11/12/2017	MW-01S	6.41	21.64	15.23	--		
11/12/2017	MW-01D	6.92	21.72	14.80	--		
12/16/2017	MW-01S	5.92	21.64	15.72	--		
12/16/2017	MW-01D	7.67	21.72	14.05	--		
1/1/2018	MW-01S	5.56	21.64	16.08	--		
1/1/2018	MW-01D	7.15	21.72	14.57	--		
2/10/2018	MW-01S	5.13	21.64	16.51	--		
2/10/2018	MW-01D	7.48	21.72	14.24	--		
3/8/2018	MW-01S	5.25	21.64	16.39	--		
3/8/2018	MW-01D	6.71	21.72	15.01	--		
4/30/2017	MW-05S	11.59	29.45	17.86	16.50	Yes	
4/30/2017	MW-05D	16.60	26.50	9.90	--		
5/21/2017	MW-05S	11.55	29.45	17.90	16.50	Yes	
5/21/2017	MW-05D	12.40	26.50	14.10	--		
6/6/2017	MW-05S	12.14	29.45	17.31	16.50	Yes	
6/6/2017	MW-05D	12.18	26.50	14.32	--		
7/8/2017	MW-05S	12.88	29.45	16.57	16.50	Yes	
7/8/2017	MW-05D	13.14	26.50	13.36	--		
8/4/2017	MW-05S	13.25	29.45	16.20	16.50	No	
8/4/2017	MW-05D	14.64	26.50	11.86	--		
9/9/2017	MW-05S	13.73	29.45	15.72	16.50	No	
9/9/2017	MW-05D	13.99	26.50	12.51	--		
10/11/2017	MW-05S	13.89	29.45	15.56	16.50	No	
10/11/2017	MW-05D	11.11	26.50	15.39	--		
11/12/2017	MW-05S	12.65	29.45	16.80	16.50	Yes	
11/12/2017	MW-05D	9.61	26.50	16.89	--		
12/16/2017	MW-05S	12.44	29.45	17.01	16.50	Yes	
12/16/2017	MW-05D	11.39	26.50	15.11	--		
1/1/2018	MW-05S	11.22	29.45	18.23	16.50	Yes	
1/1/2018	MW-05D	10.85	26.50	15.65	--		
2/10/2018	MW-05S	11.61	29.45	17.84	16.50	Yes	
2/10/2018	MW-05D	11.51	26.50	14.99	--		
3/8/2018	MW-05S	11.56	29.45	17.89	16.50	Yes	
3/8/2018	MW-05D	10.10	26.50	16.40	--		

NA = Not available.
MLLW = Mean low low water.
(a) Below top of PVC well casing.
(b) Hydraulic control goal is 15.5 ft along the majority of the cutoff wall alignment and 16.5 ft adjacent to Budd Inlet.

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

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

	Cleanup Screening Levels (a)	PZ-12 17J0190-16 10/12/2017	PZ-12 18C0203-13 3/9/2018	PZ-13 17J0190-06 10/12/2017	PZ-13 18C0203-14 3/9/2018	PZ-17 17J0190-07 10/11/2017	PZ-17 18C0203-05 3/8/2018	PZ-18 17J0190-08 10/11/2017	PZ-18 18C0203-04 3/8/2018	PZ-19 17J0190-09 10/12/2017	PZ-19 18C0203-12 3/9/2018	LW-3 17J0190-10 10/11/2017	LW-3 18C0203-08 3/8/2018	LW-4R 17J0190-11 10/11/2017	LW-4R 18C0203-09 3/8/2018	MW-01S 17J0190-12 10/12/2017	MW-01S 18C0203-16 3/9/2018
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	1.0 U	1.0 U	**2.1**	1.0 U	**4.2**	1.0 U	**5,080**	**3,560**
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	**618**	**644**
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	**7.8**	1.0 U
Acenaphthene		1.0 U	1.0 U	1.0 U	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	**255**	**334**
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	**76.0**	**120**
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	**75.6**	**122**
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 U	10.0 U	10.0 U	10.0 U	**5,510** J	**1,260**
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	**69.3**	**169**
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	**14.5**	**31.8**
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	**16.7**	**51.3**
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	**7.9**	**43.4**
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	**1.33**	**12.2**
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	**1.26**	**12.0**
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	**0.44**	**4.29**
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	**0.12**	**1.08**
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	0.50 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	**1.4**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**1.2**	1.0 U	1.0 U	1.0 U	**418**	**449**
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	**1.03**	**8.89**
cPAH TEQ (b)	0.1 (c)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.70**	**6.63**
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	**0.71**	**6.65**
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	**344**	100 U	100 U	100 U	100 U	**165**	**248**	100 U	100 U	**33,900**	**25,900**
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	**209**	100 U	100 U	100 U	**10,300**	**5,610**
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	**774**	**446**
Creosote Oil	500	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U	**654**	200 U	200 U	200 U	**40,300**	**28,600**

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

	Cleanup Screening Levels (a)	MW-02S 17J0190-13 10/11/2017	MW-02S 18C0203-10 3/8/2018	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-01D 17J0190-03 10/12/2017	MW-01D 18C0203-15 3/9/2018	MW-02D 17J0190-04 10/11/2017	MW-02D 18C0203-11 3/8/2018	MW-05D 17J0190-05 10/11/2017	MW-05D 18C0203-07 3/8/2018	CW-13 17J0190-02 10/11/2017	CW-13 18C0203-06 3/8/2018
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs) (µg/L)															
EPA Method SW8270D / SW8270D-SIM															
Naphthalene	4900	**2.8**	1.0 U	**9.7**	**10.6**	1.0 U	1.0 U	1.0 U	**1.7**	**75.0**	**5.6**	**3.1**	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	**11.0**	**1.6**	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
Acenaphthene		**1.9**	1.0 U	**9.1**	**9.1**	**8.1**	**8.1**	1.0 U	1.0 U	**17.2**	**4.6**	**7.0**	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	**5.2**	**1.3**	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	**5.4**	**1.6**	**1.9**	1.0 U	1.0 U	1.0 U
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 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**4.4**	**1.4**	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
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
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
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 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 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	**12.7**	**1.8**	**1.2**	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	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	**0.36**	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	**188**	100 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 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	200 U	200 U	200 U
Creosote Oil	500	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U	**299**	100 U	200 U	200 U	200 U	200 U

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 Model Tocic Control Act (MTCA) Method B for marine surface water for cPAHs and pentachlorophenol and MTCA Method A for NWTPH-G and NWTPH-Dx
(b) Toxicity equivalency factor (TEQ) as described in Washington Administrative Code [WAC 173-340-708 (8)].
(c) cPAH cleanup screening levels based on practical quantitation limit (PQL) for individual cPAHs.

Abbreviations and Acronyms:
cPAH = carcinogenic polycyclic aromatic hydrocarbon
µg/L = micrograms per liter
ND = Not Detected.
NWTPH-Dx = total petroleum hydrocarbons diesel range
NWTPH-Gx = TPH gasoline range
RL = reporting limit
SIM = select ion monitoring

APPENDIX A

Historical Analytical Results and Groundwater Elevations

Table A-1
Historical Analytical 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	PZ-12 ZB62K 9/24/2014
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	**2.7**
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	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	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	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	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	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	10 U	10 U	10 U	10 U	10 UJ
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 UJ	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 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	NA	NA	1.0 U
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	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	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	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	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	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	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	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	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	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	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	1.0 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	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	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	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	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	0.25 U
PETROLEUM HYDROCARBONS																			
Method NWTPH-Gx (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	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	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	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	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	NA
Toluene	1,000	NA	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	NA
m, p-Xylene	1,000	NA	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	NA

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

	Cleanup Screening Levels for Groundwater	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-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
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs) (µg/L)														
EPA Method SW8270D / SW8270D-SIM														
Naphthalene	4900	1.0 U	**1.2**	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
2-Methylnaphthalene		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
Acenaphthylene		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
Acenaphthene		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
Dibenzofuran		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
Fluorene		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
Pentachlorophenol	3	10 UJ	10 UJ	10 U	10 U	10 U	10.0 U	10.0 U	NA	NA	NA	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	0.10 U	NA	0.10 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	NA	NA	NA	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	0.10 U	NA	0.10 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	0.10 U	NA	0.10 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	0.10 U	NA	0.10 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
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
Benzo(b)Fluoranthene		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
Benzo(k)Fluoranthene		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
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
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
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
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	0.10 U	NA	0.10 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	NA	NA	NA	1.0 U	1.0 U	1.0 U
Total Benzofluoranthenes		0.20 U	0.10 U	0.10 U	0.20 U	0.20 U	0.20 U	0.20 U	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
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
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	10 U	0.10 U	0.10 U	0.25 U	0.25 U	0.25 UJ
PETROLEUM HYDROCARBONS														
Method NWTPH-Gx (µg/L)														
Gasoline	1,000	250 U	250 U	100 U	100 U	100 U	100 U	100 U	50 U	50 U	**112**	250 U	250 U	250 U
Method NWTPH-Dx (µg/L)														
Diesel	500	100 U	100 U	100 U	100 UJ	100 U	100 U	100 U	100 U	100 U	100 U	250 U	250 U	250 U
Motor Oil	500	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
Creosote Oil	500	100 U	100 U	100 U	100 U	100 U	200 U	200 U	NA	NA	NA	NA	250 U	500 U
BTEX (µg/L)														
Method SW8021B/SW021B MOD														
Benzene	5	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
Ethylbenzene	700	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
o-Xylene	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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

	Cleanup Screening Levels for Groundwater	PZ-13 OH11A 1/8/2009	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	PZ-13 17C0014-06 3/1/2017
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs) (µg/L)																				
EPA Method SW8270D / SW8270D-SIM																				
Naphthalene	4900	1.0 U	**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	1.0
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	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0
Acenaphthylene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 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
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	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0
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	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0
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	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0
Pentachlorophenol	3	5.0 U	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	10
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	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0
Carbazole		1.0 U	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	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 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
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	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0
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	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0
Benzo(a)Anthracene		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	NA	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10
Chrysene		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	NA	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10
Benzo(b)Fluoranthene		0.10 U	0.10 U	1.0 U	0.10 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)Fluoranthene		0.10 U	0.10 UJ	1.0 U	0.10 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)Pyrene		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	NA	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10
Indeno(1,2,3-cd)Pyrene		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	NA	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10
Dibenz(a,h)Anthracene		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	NA	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10
Benzo(g,h,i)Perylene		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	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0
1-Methylnaphthalene		1.0 U	U	1.0 U	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
Total Benzofluoranthenes		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	NA	0.10 U	0.10 U	0.20 U	0.10 U	0.10 U	0.20 U	0.20
cPAH TEQ (a)	0.1 (b)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
cPAH TEQ (a) (Using 1/2 RL for ND)	0.1 (b)	0.076	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	0.076
PENTACHLOROPHENOL (µg/L)																				
EPA Method SW8041A/SW8270C,D																				
Pentachlorophenol	3	0.25 U	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	0.25
PETROLEUM HYDROCARBONS																				
Method NWTPH-Gx (µg/L)																				
Gasoline	1,000	250 U	**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	100
Method NWTPH-Dx (µg/L)																				
Diesel	500	250 U	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	100
Motor Oil	500	500 U	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	200
Creosote Oil	500	250 U	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	100
BTEX (µg/L)																				
Method SW8021B/SW021B MOD																				
Benzene	5	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1,000	NA	NA	**56**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	700	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
m, p-Xylene	1,000	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	1,000	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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

	Cleanup Screening Levels for Groundwater		PZ-13 17J0190-06 10/12/2017		PZ-13 18C0203-14 3/9/2018		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		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	
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs) (µg/L)																																				
EPA Method SW8270D / SW8270D-SIM																																				
Naphthalene	4900	U	1.0	U	1.0	U	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**		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
2-Methylnaphthalene		U	1.0	U	1.0	U	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	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Acenaphthylene		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	1.2	U	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		U	1.0	U	1.0	U	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	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Dibenzofuran		U	1.0	U	1.0	U	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	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Fluorene		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	1.2	U	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	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	5.0	U	5.0	U	10	U	10	U	10	U
Phenanthrene		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	1.2	U	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		U	1.0	U	1.0	U	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	1.0	U	1.0	U	1.0	U	NA		NA	
Anthracene		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	1.2	U	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		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	1.2	U	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	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	1.2	U	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		U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	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
Chrysene		U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	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
Benzo(b)Fluoranthene			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		NA		NA		NA		NA		NA	
Benzo(k)Fluoranthene			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		NA		NA		NA		NA		NA	
Benzo(a)Pyrene		U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	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
Indeno(1,2,3-cd)Pyrene		U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	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
Dibenz(a,h)Anthracene		U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	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
Benzo(g,h,i)Perylene		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	1.2	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1-Methylnaphthalene		U	1.0	U	1.0	U	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	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Total Benzofluoranthenes		U	0.20	U	0.20	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		0.10	U	0.11	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		0.076		0.076		0.076		0.076		0.076		0.076		0.076		0.076		0.076		0.076		0.071		0.078		0.071		0.071		0.076		0.076		0.076	
PENTACHLOROPHENOL (µg/L)																																				
EPA Method SW8041A/SW8270C,D																																				
Pentachlorophenol	3	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	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	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	250	U	250	U	250	U	250	U	250	U
Method NWTPH-Dx (µg/L)																																				
Diesel	500	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	110	U	100	U	100	U	100	U	100	U
Motor Oil	500	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	220	U	200	U	200	U	200	U	200	U
Creosote Oil	500	U	200	U	200	U	NA		NA		NA		NA		250	U	500	U	250	U	250	U	250	U	100	U	200	U	220	U	200	U	100	U	**150**		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 Analytical Results
Groundwater Compliance Monitoring
Cascade Pole Site
Port of Olympia, Washington

	Cleanup Screening Levels for Groundwater	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	PZ-17 18C0203-05 3/8/2018	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
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs) (µg/L)																		
EPA Method SW8270D / SW8270D-SIM																		
Naphthalene	4900	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	1.0 U	0.10 U	NA	**0.13**	1.0 U
2-Methylnaphthalene		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	1.0 U	NA	NA	NA	1.0 U
Acenaphthylene		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	1.0 U	0.10 U	NA	0.10 U	1.0 U
Acenaphthene		1.0 U	1.0 U	NA	1.0 U	**2.6**	**18**	**1.9**	**2.3**	NA	NA	1.0 U	**1.5**	1.0 U	0.10 U	NA	0.10 U	1.0 U
Dibenzofuran		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	1.0 U	NA	NA	NA	1.0 U
Fluorene		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	1.0 U	0.10 U	NA	0.10 U	1.0 U
Pentachlorophenol	3	10 U	10 UJ	NA	10 UJ	10 UJ	10 U	10 U	10 U	10 U	NA	10 U	10.0 U	10.0 U	NA	NA	NA	5.0 U
Phenanthrene		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	1.0 U	0.10 U	NA	0.10 U	1.0 U
Carbazole		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	1.0 U	NA	NA	NA	1.0 U
Anthracene		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	1.0 U	0.10 U	NA	0.10 U	1.0 U
Fluoranthene		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	1.0 U	0.10 U	NA	0.10 U	1.0 U
Pyrene	2600	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	1.0 U	0.10 U	NA	0.10 U	1.0 U
Benzo(a)Anthracene		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	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Chrysene		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	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	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	NA	NA	NA	0.10 U	0.10 U	0.10 U	0.10 U
Benzo(a)Pyrene		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	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	NA	0.10 U	0.10 U	1.0 U	0.10 U	0.10 U	NA	NA	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	0.11 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	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	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	NA	1.0 U	1.0 U	1.0 U	0.10 U	NA	0.10 U	1.0 U
1-Methylnaphthalene		1.0 U	1.0 U	NA	1.0 U	**6.7**	**27**	**2.4**	**2.8**	NA	NA	1.0 U	**1.4**	1.0 U	NA	NA	NA	1.0 U
Total Benzofluoranthenes		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	0.20 U	NA	NA	NA	NA
cPAH TEQ (a)	0.1 (b)	ND	ND	NA	ND	ND	ND	ND	ND	NA	NA	ND	ND	ND	ND	ND	ND	ND
cPAH TEQ (a) (Using 1/2 RL for ND)	0.1 (b)	0.071	0.078	NA	0.076	0.076	0.760	0.076	0.076	NA	NA	0.076	0.076	0.076	0.076	0.076	0.076	0.076
PENTACHLOROPHENOL (µg/L)																		
EPA Method SW8041A/SW8270C,D																		
Pentachlorophenol	3	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	0.25 U	10 U	0.10 U	0.10 U	0.25 U
PETROLEUM HYDROCARBONS																		
Method NWTPH-Gx (µg/L)																		
Gasoline	1,000	250 U	250 U	NA	250 U	**300**	**590**	100 U	**154**	NA	NA	100 U	100 U	**344**	50 U	50 U	50 U	250 U
Method NWTPH-Dx (µg/L)																		
Diesel	500	100 U	**110**	100 U	100 U	100 U	NA	100 U	100 UJ	NA	NA	100 U	100 U	100 U	100 UJ	100 U	100 U	250 U
Motor Oil	500	200 U	**640**	200 U	200 U	200 U	NA	200 U	200 U	NA	NA	200 U	200 U	200 U	500 UJ	500 U	500 U	500 U
Creosote Oil	500	100 U	**310**	100 U	100 U	**210**	NA	100 U	**126**	NA	NA	100 U	200 U	200 U	NA	**140**	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	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 Analytical Results
Groundwater Compliance Monitoring
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	Cleanup Screening Levels for Groundwater	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
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs) (µg/L)									
EPA Method SW8270D / SW8270D-SIM									
Naphthalene	4900	1.0 U	1.0 U	NA	1.0 U	**3.2**	1.0 U	**2.8**	1.0 U
2-Methylnaphthalene		1.0 U	1.0 U	NA	1.0 U	1.1 U	1.0 U	1.0 U	1.0 U
Acenaphthylene		1.0 U	1.0 U	NA	1.0 U	1.1 U	1.0 U	1.0 U	1.0 U
Acenaphthene		1.0 U	1.0 U	NA	1.0 U	1.1 U	1.0 U	1.0 U	1.0 U
Dibenzofuran		1.0 U	1.0 U	NA	1.0 U	1.1 U	1.0 U	1.0 U	1.0 U
Fluorene		1.0 U	1.0 U	NA	1.0 U	1.1 U	1.0 U	1.0 U	1.0 U
Pentachlorophenol	3	5.0 U	5.0 U	NA	5.0 U	5.6 U	NA	5.0 U	5.0 U
Phenanthrene		1.0 U	1.0 U	NA	1.0 U	1.1 U	1.0 U	1.0 U	1.0 U
Carbazole		1.0 U	1.0 U	NA	1.0 U	1.1 U	NA	1.0 U	1.0 UJ
Anthracene		1.0 U	1.0 U	NA	1.0 U	1.1 U	1.0 U	1.0 U	1.0 U
Fluoranthene		1.0 U	1.0 U	NA	1.0 U	1.1 U	1.0 U	1.0 U	1.0 U
Pyrene	2600	1.0 U	1.0 U	NA	1.0 U	1.1 U	1.0 U	1.0 U	1.0 U
Benzo(a)Anthracene		0.10 U	0.10 U	NA	0.10 U	0.10 U	1.0 U	0.11 U	0.10 U
Chrysene		0.10 U	0.10 U	NA	0.10 U	0.10 U	1.0 U	0.11 U	0.10 U
Benzo(b)Fluoranthene		0.10 U	0.10 U	NA	0.10 U	0.10 U	1.0 U	0.11 U	NA
Benzo(k)Fluoranthene		0.10 U	0.10 U	NA	0.10 U	0.10 U	1.0 U	0.11 U	NA
Benzo(a)Pyrene		0.10 U	0.10 U	NA	0.10 U	0.10 U	1.0 U	0.11 U	0.10 U
Indeno(1,2,3-cd)Pyrene		0.10 U	0.10 U	NA	0.10 U	0.10 U	1.0 U	0.11 U	0.10 U
Dibenz(a,h)Anthracene		0.10 U	0.10 U	NA	0.10 U	0.10 U	1.0 U	0.11 U	0.10 U
Benzo(g,h,i)Perylene		1.0 U	1.0 U	NA	1.0 U	1.1 U	1.0 U	1.0 U	1.0 U
1-Methylnaphthalene		1.0 U	1.0 U	NA	1.0 U	1.1 U	1.0 U	1.0 U	1.0 U
Total Benzofluoranthenes		NA	NA	NA	NA	NA	NA	NA	0.10 U
cPAH TEQ (a)	0.1 (b)	ND	ND	NA	ND	ND	ND	ND	ND
cPAH TEQ (a) (Using 1/2 RL for ND)	0.1 (b)	0.076	0.076	NA	0.076	0.076	0.76	0.083	0.071
PENTACHLOROPHENOL (µg/L)									
EPA Method SW8041A/SW8270C,D									
Pentachlorophenol	3	0.25 U	**1.8**	0.25 U	0.25 U	0.25 U	NA	**0.41**	**0.91**
PETROLEUM HYDROCARBONS									
Method NWTPH-Gx (µg/L)									
Gasoline	1,000	250 U	250 U	NA	250 U	250 U	NA	250 U	250 U
Method NWTPH-Dx (µg/L)									
Diesel	500	250 U	250 U	NA	250 U	250 U	NA	250 U	100 U
Motor Oil	500	500 U	500 U	NA	500 U	500 U	NA	500 U	200 U
Creosote Oil	500	250 U	500 U	NA	250 U	250 U	NA	250 U	100 U
BTEX (µg/L)									
Method SW8021B/SW021B MOD									
Benzene	5	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1,000	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	700	NA	NA	NA	NA	NA	NA	NA	NA
m, p-Xylene	1,000	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	1,000	NA	NA	NA	NA	NA	NA	NA	NA

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

	Cleanup Screening Levels for Groundwater	PZ-18 SO90F 3/24/2011	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-19 2005060439-03 6/29/2005	PZ-19 2006030294-04 3/22/2006
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs) (µg/L)																			
EPA Method SW8270D / SW8270D-SIM																			
Naphthalene	4900	1.0 U	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	**0.13**	NA
2-Methylnaphthalene		1.0 U	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	NA	NA
Acenaphthylene		1.0 U	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	0.10 U	NA
Acenaphthene		1.0 U	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	0.10 U	NA
Dibenzofuran		1.0 U	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	NA	NA
Fluorene		1.0 U	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	0.10 U	NA
Pentachlorophenol	3	5.0 U	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	NA	NA
Phenanthrene		1.0 U	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	0.10 U	NA
Carbazole		1.0 U	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	NA	NA
Anthracene		1.0 U	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	0.10 U	NA
Fluoranthene		1.0 U	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	0.10 U	NA
Pyrene	2600	1.0 U	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	0.10 U	NA
Benzo(a)Anthracene		0.10 U	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	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	0.10 U	0.10 U
Benzo(k)Fluoranthene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.10 U	0.10 U
Benzo(a)Pyrene		0.10 U	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	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	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	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	0.10 U	NA
1-Methylnaphthalene		1.0 U	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	NA	NA
Total Benzofluoranthenes		0.10 U	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	NA	NA
cPAH TEQ (a)	0.1 (b)	ND	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	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	0.25 U	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	10 U	0.10 U
PETROLEUM HYDROCARBONS																			
Method NWTPH-Gx (µg/L)																			
Gasoline	1,000	250 U	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	50 U	50 U
Method NWTPH-Dx (µg/L)																			
Diesel	500	110 U	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	**106**	100 U
Motor Oil	500	220 U	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	500 U	500 U
Creosote Oil	500	220 U	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	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	NA	NA
Toluene	1,000	NA	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	NA
m, p-Xylene	1,000	NA	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	NA

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

	Cleanup Screening Levels for Groundwater	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
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs) (µg/L)															
EPA Method SW8270D / SW8270D-SIM															
Naphthalene	4900	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**
2-Methylnaphthalene		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
Acenaphthylene		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
Acenaphthene		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
Dibenzofuran		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
Fluorene		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
Pentachlorophenol	3	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
Phenanthrene		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
Carbazole		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
Anthracene		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
Fluoranthene		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
Pyrene	2600	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
Benzo(a)Anthracene		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
Chrysene		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
Benzo(b)Fluoranthene		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
Benzo(k)Fluoranthene		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
Benzo(a)Pyrene		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
Indeno(1,2,3-cd)Pyrene		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
Dibenz(a,h)Anthracene		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
Benzo(g,h,i)Perylene		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-Methylnaphthalene		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
Total Benzofluoranthenes		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
cPAH TEQ (a)	0.1 (b)	ND	ND	ND	ND	NA	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	NA	0.076	0.076	0.076	0.071	0.071	0.078	0.071	0.076	0.076
PENTACHLOROPHENOL (µg/L)															
EPA Method SW8041A/SW8270C,D															
Pentachlorophenol	3	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
PETROLEUM HYDROCARBONS															
Method NWTPH-Gx (µg/L)															
Gasoline	1,000	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
Method NWTPH-Dx (µg/L)															
Diesel	500	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
Motor Oil	500	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
Creosote Oil	500	NA	NA	250 U	500 U	NA	250 U	500 U	250 U	100 U	230 U	200 U	200 U	200 U	**140**
BTEX (µg/L)															
Method SW8021B/SW021B MOD															
Benzene	5	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
Ethylbenzene	700	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
o-Xylene	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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

	Cleanup Screening Levels for Groundwater	PZ-19 XC81E 8/28/2013	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	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	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	**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	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	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	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	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	0.10 U	NA	0.10 U	0.10 U
Pentachlorophenol	3	10 U	10 U	10 UJ	10 UJ	10 UJ	10 U	10 U	10 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	0.10 U	NA	0.10 U	0.10 U
Carbazole		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	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	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	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	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 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 UJ	0.10 U	0.10 U
Benzo(b)Fluoranthene		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	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 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 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 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	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	NA	NA	NA	NA
Total Benzofluoranthenes		0.20 U	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	NA	NA	NA	NA
cPAH TEQ (a)	0.1 (b)	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	0.071	0.071	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076
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	0.10 U
PETROLEUM HYDROCARBONS															
Method NWTPH-Gx (µg/L)															
Gasoline	1,000	250 U	250 U	250 U	250 U	250 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 U	100 UJ	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	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	100 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
Toluene	1,000	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
m, p-Xylene	1,000	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

Table A-1
Historical Analytical 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	LW-3 ANH7J 9/24/2015	LW-3 AWD0N 2/16/2016
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	1.0 U	1.0
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	1.0 U	1.0
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	1.0 U	1.0
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	1.0 U	1.0
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	1.0 U	1.0
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	1.0 U	1.0
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	10 UJ	10
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	1.0 U	1.0
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	1.0 U	1.0
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	1.0 U	1.0
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	1.0 U	1.0
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	1.0 U	1.0
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	0.10 U	0.10
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	0.10 U	0.10
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	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	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	0.10 U	0.10
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	0.10 U	0.10
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	0.10 U	0.10
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	1.0 U	1.0
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	1.0 U	1.0
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	0.10 U	0.10
cPAH TEQ (a)	0.1 (b)	ND	ND	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	0.076	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	0.25 U	0.25
PETROLEUM HYDROCARBONS																				
Method NWTPH-Gx (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	250 U	**140**
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	**510**	100
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	200 U	200
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	**1700**	**150**
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	NA	NA
Toluene	1,000	NA	NA	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	NA	NA
m, p-Xylene	1,000	NA	NA	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	NA	NA

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

	Cleanup Screening Levels for Groundwater		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-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	U	**1.1**		1.0	U	**2.1**		1.0	U	0.10	U	NA		0.10	U	1.0	U	1.0	U	1.0	U	1.0	U	**1.9**	
2-Methylnaphthalene		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	1.0	U
Acenaphthylene		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	1.0	U
Acenaphthene		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	1.0	U
Dibenzofuran		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	1.0	U
Fluorene		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	1.0	U
Pentachlorophenol	3	U	10	U	10	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		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	1.0	U
Carbazole		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	1.0	U
Anthracene		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	1.0	U
Fluoranthene		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	1.0	U
Pyrene	2600	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	1.0	U
Benzo(a)Anthracene		U	0.10	U	0.10	U	0.10	U	0.10	U	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		U	0.10	U	0.10	U	0.10	U	0.10	U	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		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		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		U	0.10	U	0.10	U	0.10	U	0.10	U	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		U	0.10	U	0.10	U	0.10	U	0.10	U	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		U	0.10	U	0.10	U	0.10	U	0.10	U	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		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	1.0	U
1-Methylnaphthalene		U	1.0	U	**1.0**		**1.2**		1.0	U	NA		NA		NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Total Benzofluoranthenes		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	
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	
PENTACHLOROPHENOL (µg/L)																										
EPA Method SW8041A/SW8270C,D																										
Pentachlorophenol	3	U	**0.57**		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-Gx (µg/L)																										
Gasoline	1,000		**150**		**396**		**165**		**248**		50	U	50	U	50	U	250	U	250	U	250	U	250	U	250	U
Method NWTPH-Dx (µg/L)																										
Diesel	500	U	**143**	J	**216**		**209**		100	U	100	U	100	U	100	U	250	U	250	U	250	U	250	U	250	U
Motor Oil	500	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		**501**		**1,010**		**654**		200	U	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	
Toluene	1,000		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	
m, p-Xylene	1,000		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	

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

	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	MW-01S 2005070010-01 6/30/2005
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	**5,130**
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	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	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**860**
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	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	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	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	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**380**
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	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	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**23**
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	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	1.0 U	1.0 U	**17**
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	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 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**12**
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	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	10 U
Benzo(b)Fluoranthene		0.11 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10 U
Benzo(k)Fluoranthene		0.11 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10 U
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	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	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	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	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	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA
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	NA
cPAH TEQ (a)	0.1 (b)	ND	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	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	**7,470**
PETROLEUM HYDROCARBONS																			
Method NWTPH-Gx (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	**5,830** (d)
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	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	500 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	**13,000**
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	NA
Toluene	1,000	NA	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	NA
m, p-Xylene	1,000	NA	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	NA

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

	Cleanup Screening Levels for Groundwater	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	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
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs) (µg/L)																				
EPA Method SW8270D / SW8270D-SIM																				
Naphthalene	4900	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**	**7,100**	**6,800**	**6,800**	**10,000**	**8,000**
2-Methylnaphthalene		NA	NA	NA	**920**	**1,000**	**810**	**1,000**	**890**	**900**	**750**	**740**	**680**	**1100**	**710**	**1000**	**780**	**1,200**	**550**	**720**
Acenaphthylene		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**	100 U	10 U	10 U	10 U	10
Acenaphthene		NA	NA	**398**	**210**	**290**	**200**	**290**	**250**	**270**	**190**	**200**	**190**	**340**	**220**	**320**	**270**	**330**	**240**	**280**
Dibenzofuran		NA	NA	NA	**73**	**130**	**98**	**110**	**99**	**120**	100 U	**64**	**79**	**79**	**110**	**140**	**140**	**160**	**71**	**110**
Fluorene		NA	NA	**112**	**59**	**100**	**63**	**86**	**72**	100 U	100 U	**47**	**47**	**69**	**90**	**110**	**110**	**120**	**66**	**73**
Pentachlorophenol	3	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**	**4,700**	**4,000**	**6,600**	**4,900** J	**2,900**
Phenanthrene		NA	NA	**132**	**46**	**98**	**53**	**76**	**44**	100 U	100 U	**44**	**34**	**65**	**82**	**94** J	**130**	**120**	**68**	**69**
Carbazole		NA	NA	NA	**120**	**120**	**69**	**80**	**86**	100 U	100 UJ	**57**	**24**	**53**	**52**	NA	NA	NA	**100**	**53**
Anthracene		NA	NA	**96**	**14**	**26**	**14**	**17**	**40**	100 U	100 U	**12**	**10**	**18**	**21**	100 U	**39**	**27**	**17**	**16**
Fluoranthene		NA	NA	**172**	**6.3**	**30**	**11**	**13**	**14**	100 U	100 U	**7.8**	**2.0**	**19**	**18**	100 U	**56**	**44**	10 U	10
Pyrene	2600	NA	NA	**24**	**7.8**	**15**	**5.2**	**11**	**7.4**	100 U	100 U	**3.9**	**1.7**	**14**	**8.9**	100 U	**34**	**22**	10 U	10
Benzo(a)Anthracene		**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**	**1.7**	**4.1**	**2.1**	**0.83**	**1.5**
Chrysene		**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**	**1.6**	**3.4**	**2.2**	**0.82**	**1.6**
Benzo(b)Fluoranthene		**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	NA	NA	NA	NA	NA
Benzo(k)Fluoranthene		**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	NA	NA	NA	NA	NA
Benzo(a)Pyrene		**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**	1.0 U	**1.4**	**0.69**	0.3 U	**0.54**
Indeno(1,2,3-cd)Pyrene		**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**	1.0 U	**0.58**	**0.15**	0.3 U	**0.13**
Dibenz(a,h)Anthracene		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	1.0 U	**0.53**	0.10 U	0.3 U	0.10
Benzo(g,h,i)Perylene		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	100 U	10 U	10 U	10 U	10
1-Methylnaphthalene		NA	NA	NA	**470**	**640**	**570**	**610**	**520**	**520**	**400**	**380**	**390**	**770**	**560**	**580**	**580**	**580**	**450**	**420**
Total Benzofluoranthenes		NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.35**	1.0 U	**0.76**	**1.4**	**1.5**	2.0 U	**2.7**	**1.4**	**0.55**	**1.1**
cPAH TEQ (a)	0.1 (b)	**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**	**0.186**	**2.2**	**1.1**	**0.146**	**0.829**
cPAH TEQ (a) (Using 1/2 RL for ND)	0.1 (b)	**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**	**0.886**	**2.2**	**1.1**	**0.326**	**0.834**
PENTACHLOROPHENOL (µg/L)																				
EPA Method SW8041A/SW8270C,D																				
Pentachlorophenol	3	**3,440**	**3,330**	**9,120**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PETROLEUM HYDROCARBONS																				
Method NWTPH-Gx (µg/L)																				
Gasoline	1,000	**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**	**38,000**	**48,000**	**47,000**	**52,000**	**44,000**
Method NWTPH-Dx (µg/L)																				
Diesel	500	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**	**5,500**	**9,400**	**7,300**	**11,000**	**3,700**
Motor Oil	500	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	**890**	**280**	**390**	**690**	**300**
Creosote Oil	500	**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**	**40,000**	**39,000**	**34,000**	**59,000**	**16,000**
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	NA	NA
Toluene	1,000	NA	NA	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	NA	NA
m, p-Xylene	1,000	NA	NA	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	NA	NA

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

	Cleanup Screening Levels for Groundwater	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-02S 2005070010-05 7/1/2005	MW-02S 2006030294-01 3/22/2006	MW-02S 2006110251-04 11/15/2006	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
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs) (µg/L)																		
EPA Method SW8270D / SW8270D-SIM																		
Naphthalene	4900	**17,000**	**5,200**	**6,790**	**4,400**	**5,080**	**3,560**	**0.29**	NA	**44.1**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Methylnaphthalene		**1100**	**850**	**654**	**587**	**618**	**644**	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
Acenaphthylene		U 1.0 U	1.0 U	30 U	10 U	**7.8**	1.0 U	**0.10**	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
Acenaphthene		**360**	**220**	**221**	**263**	**255**	**334**	**0.92**	NA	**0.36**	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		**130**	**110**	**97.6**	**118**	**76.0**	**120**	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
Fluorene		**61**	**74**	**63.5**	**112**	**75.6**	**122**	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
Pentachlorophenol	3	J **13,000**	**1,300**	**3,950**	**1,290**	**5,510** J	**1,260**	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
Phenanthrene		**92** J	**69**	**52.6**	**114**	**69.3**	**169**	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
Carbazole		**290**	**68**	**51.1**	**43.5**	**30.3**	**27.2**	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 UJ
Anthracene		**27**	**16**	30 U	**27.6**	**14.5**	**31.8**	**1.19** E	NA	**1.65**	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		U **12**	**20**	30 U	**30.8**	**16.7**	**51.3**	**0.28**	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
Pyrene	2600	U **5.3**	**12**	30 U	**20.8**	**7.9**	**43.4**	**0.18**	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
Benzo(a)Anthracene		1.0 U	**2.3**	2.5 U	**1.54**	**1.33**	**12.2**	0.10 U	0.10 U	0.10 U	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		1.0 U	**2.3**	2.5 U	**1.42**	**1.26**	**12.0**	0.10 U	0.10 U	0.10 U	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	0.10 U	0.10 U	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
Benzo(k)Fluoranthene		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	0.10 UJ	0.10 U	NA
Benzo(a)Pyrene		1.0 U	**0.81**	2.5 U	**0.54**	**0.44**	**4.29**	0.10 U	0.10 U	0.10 U	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		1.0 U	0.30 U	2.5 U	**0.14**	**0.12**	**1.08**	0.10 U	0.10 U	0.10 U	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		U 1.0 U	0.30 U	2.5 U	0.10 U	0.10 U	0.50 U	0.10 U	0.10 U	0.10 U	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		U 1.0 U	1.0 U	30 U	10 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	1.0 U	1.0 U	1.0 U	1.0 U
1-Methylnaphthalene		**710**	**460**	**373**	**399**	**418**	**449**	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
Total Benzofluoranthenes		1.0 U	**1.6**	5.0 U	**1.1**	**1.03**	**8.89**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.10 U
cPAH TEQ (a)	0.1 (b)	ND	**1.22**	ND	**0.83**	**0.70**	**6.63**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cPAH TEQ (a) (Using 1/2 RL for ND)	0.1 (b)	0.71 U	**1.25**	1.89	**0.84**	**0.71**	**6.65**	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.071
PENTACHLOROPHENOL (µg/L)																		
EPA Method SW8041A/SW8270C,D																		
Pentachlorophenol	3	NA	NA	NA	NA	NA	NA	0.50 U	0.10 U	**0.63**	0.21 U	0.25 U	**1.0**	0.25 U	0.25 U	0.26 U	0.25 U	0.25 U
PETROLEUM HYDROCARBONS																		
Method NWTPH-Gx (µg/L)																		
Gasoline	1,000	**41,000**	**28,000**	**37,200**	**24,200**	**33,900**	**25,900**	50 U	50 U	**99**	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U
Method NWTPH-Dx (µg/L)																		
Diesel	500	**10,000**	**6,000**	**6,110** J	**4,790**	**10,300**	**5,610**	100 U	100 U	100 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	100 U
Motor Oil	500	10000 U	**690**	1000 U	**412**	**774**	**446**	500 U	500 U	500 U	500 U	500 U	500 U	500 U	500 U	250 U	500 U	200 U
Creosote Oil	500	**55,000**	**24,000**	**23,700**	**24,900**	**40,300**	**28,600**	NA	NA	NA	NA	250 U	500 U	250 U	250 U	500 U	250 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 Analytical Results
Groundwater Compliance Monitoring
Cascade Pole Site
Port of Olympia, Washington

	Cleanup Screening Levels for Groundwater	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	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-05S 2005070010-03 6/30/2005	Dup of MW-05S PZ30 2005070010-04 6/30/2005
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	**1.9**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**1.7**	**1.3**	**2.8**	1.0 U	**10.8** E	**11.8** E
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	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	1.0 U	1.0 U	1.0 U	1.0 U	**0.29**	**0.27**
Acenaphthene		1.0 U	1.0 U	1.0 U	1.0 U	**1.1**	**1.2**	**1.2**	**1.0**	1.0 U	**1.4**	1.0 U	**1.6**	1.0 U	**1.9**	1.0 U	**5.25** E	**5.13** E
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	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	1.0 U	1.0 U	1.0 U	1.0 U	**2.26** E	**2.26** E
Pentachlorophenol	3	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	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	1.0 U	1.0 U	1.0 U	1.0 U	**1.45** E	**1.76** E
Carbazole		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	NA	NA
Anthracene		1.0 U	**1.1**	1.0 U	1.0 U	**1.0**	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	**1.23** E	**1.25** E
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	**1.71** E	**1.75** E
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	**1.64** E	**1.71** E
Benzo(a)Anthracene		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	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	**0.28**	**0.33**
Chrysene		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	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	**0.20**	**0.22**
Benzo(b)Fluoranthene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.10 U	0.10 U
Benzo(k)Fluoranthene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.10 U	0.10 U
Benzo(a)Pyrene		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	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		0.12 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	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		0.12 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	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	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	1.0 U	1.0 U	1.0 U	1.0 U	NA	NA
Total Benzofluoranthenes		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	0.10 U	0.10 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	ND	**0.030**	**0.035**
cPAH TEQ (a) (Using 1/2 RL for ND)	0.1 (b)	0.085	0.071	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	**0.039**	**0.044**
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	0.28 U	0.25 U	**0.83**	0.25 U	0.25 U	0.43 U	0.25 U	**0.34**	**0.36**	0.25 U	0.10 U	0.50 U
PETROLEUM HYDROCARBONS																		
Method NWTPH-Gx (µg/L)																		
Gasoline	1,000	250 U	**480**	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	50 U	50 U
Method NWTPH-Dx (µg/L)																		
Diesel	500	120 U	**130**	100 U	100 U	100 U	130 U	100 U	100 U	120 U	100 U	100 U	100 UJ	100 U	100 U	100 U	100 U	100 U
Motor Oil	500	240 U	**990**	200 U	200 U	210 U	260 U	**240**	200 U	230 U	200 U	200 U	200 U	200 U	200 U	200 U	500 U	500 U
Creosote Oil	500	240 U	200 U	200 U	**110**	**210**	130 U	100 U	100 U	120 U	**190**	100 U	100 U	100 U	200 U	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	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 Analytical Results
Groundwater Compliance Monitoring
Cascade Pole Site
Port of Olympia, Washington

	Cleanup Screening Levels for Groundwater	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	NA	**29.1**	**92**	**48**	**43**	**46**
2-Methylnaphthalene		NA	NA	**2.5**	**2.0**	**1.8**	**2.0**
Acenaphthylene		NA	**0.14**	1.0 U	1.0 U	1.0 U	1.0 U
Acenaphthene		NA	**5.91**	**9.2**	**8.8**	**7.6**	**8.3**
Dibenzofuran		NA	NA	**3.2**	**2.9**	**2.5**	**2.6**
Fluorene		NA	**1.00**	**2.8**	**2.6**	**2.2**	**2.0**
Pentachlorophenol	3	NA	NA	5.0 U	5.0 U	5.0 U	5.0 U
Phenanthrene		NA	**1.18**	**1.9**	**1.8**	**1.6**	1.0 U
Carbazole		NA	NA	**1.9**	**1.1**	1.0 U	**1.0**
Anthracene		NA	**1.02**	1.0 U	1.0 U	1.0 U	1.0 U
Fluoranthene		NA	**0.90**	1.0 U	**1.1**	**1.0**	1.0 U
Pyrene	2600	NA	**0.41**	1.0 U	1.0 U	1.0 U	1.0 U
Benzo(a)Anthracene		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
Benzo(b)Fluoranthene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Benzo(k)Fluoranthene		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
Indeno(1,2,3-cd)Pyrene		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
Benzo(g,h,i)Perylene		NA	0.10 U	1.0 U	1.0 U	1.0 U	1.0 U
1-Methylnaphthalene		NA	NA	**5.2**	**3.9**	**3.4**	**4.0**
Total Benzofluoranthenes		NA	NA	NA	NA	NA	NA
cPAH TEQ (a)	0.1 (b)	ND	**0.018**	ND	0.010	0.010	0.011
cPAH TEQ (a) (Using 1/2 RL for ND)	0.1 (b)	0.076	**0.089**	0.076	0.081	0.081	0.082
PENTACHLOROPHENOL (µg/L)							
EPA Method SW8041A/SW8270C,D							
Pentachlorophenol	3	0.10 U	0.10 U	0.25 U	0.25 U	0.25 U	0.25 UJ
PETROLEUM HYDROCARBONS							
Method NWTPH-Gx (µg/L)							
Gasoline	1,000	50 U	50 U	**530**	**320**	250 U	**270**
Method NWTPH-Dx (µg/L)							
Diesel	500	**430**	100 U	250 U	250 U	250 U	250 U
Motor Oil	500	500 U	500 U	500 U	500 U	500 U	500 U
Creosote Oil	500	NA	NA	NA	**410**	**390**	500 U
BTEX (µg/L)							
Method SW8021B/SW021B MOD							
Benzene	5	NA	NA	NA	NA	NA	NA
Toluene	1,000	NA	NA	NA	NA	NA	NA
Ethylbenzene	700	NA	NA	NA	NA	NA	NA
m, p-Xylene	1,000	NA	NA	NA	NA	NA	NA
o-Xylene	1,000	NA	NA	NA	NA	NA	NA

Table A-1
Historical Analytical 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	MW-05S WF57E 2/27/2013	Dup of MW-05 PZ-30 WF57F 2/27/2013
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	**1.6**	**1.6**
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	1.0 U	1.0
Acenaphthylene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0
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**	**10**	**11**
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	1.0 U	1.0
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	1.0 U	1.0
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	5.0 U	10 U	10 U	10 U	10
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	1.0
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	NA	NA
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**	1.0 U	1.0
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	1.0
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	1.0
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	0.10 U	0.10
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	0.10 U	0.10
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	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	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	0.10 U	0.10
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	0.10 U	0.10
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	0.10 U	0.10
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	1.0
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	1.0 U	1.0
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	0.20 U	0.20
cPAH TEQ (a)	0.1 (b)	ND	**0.134**	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	**0.154**	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	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	0.25 U	0.25
PETROLEUM HYDROCARBONS																			
Method NWTPH-Gx (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	250 U	250
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	100 U	100
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	200 U	200
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**	**230**	**210**
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	NA
Toluene	1,000	NA	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	NA
m, p-Xylene	1,000	NA	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	NA

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

	Cleanup Screening Levels for Groundwater	S	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
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	**1.7**	**1.4**	**1.4**	**1.4**	**5.0** J	**2.8** J	1.0 U	1.0 U
2-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	1.0 U	1.0 U	1.0 U
Acenaphthylene		U	1.0 U	1.0 U	1.0 U	1.0 U	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			**8.7**	**9.4**	**9.0**	**10**	**8.6**	**9.4**	**6.5**	**7.1**	**7.9**	**7.2**	**6.2**	**6.6**
Dibenzofuran		U	1.0 U	1.0 U	1.0 U	1.0 U	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		U	1.0 U	1.0 U	1.0 U	1.0 U	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	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
Phenanthrene		U	1.0 U	1.0 U	1.0 U	1.0 U	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	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		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
Fluoranthene		U	1.0 U	1.0 U	1.0 U	1.0 U	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	U	1.0 U	1.0 U	1.0 U	1.0 U	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		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
Chrysene		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
Benzo(b)Fluoranthene			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
Benzo(a)Pyrene		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
Indeno(1,2,3-cd)Pyrene		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
Dibenz(a,h)Anthracene		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
Benzo(g,h,i)Perylene		U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1-Methylnaphthalene		U	1.0 U	1.0 U	1.0 U	1.0 U	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		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
cPAH TEQ (a)	0.1 (b)		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	0.071	0.071	0.078	0.085	0.076	0.076	0.076	0.076	0.076	0.076
PENTACHLOROPHENOL (µg/L)														
EPA Method SW8041A/SW8270C,D														
Pentachlorophenol	3	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
PETROLEUM HYDROCARBONS														
Method NWTPH-Gx (µg/L)														
Gasoline	1,000	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
Method NWTPH-Dx (µg/L)														
Diesel	500	U	100 U	100 U	100 U	100 U	100 U	100 U	100 UJ	110 U	100 U	100 U	**120**	100 U
Motor Oil	500	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
Creosote Oil	500		100 U	100 U	100 U	100 U	**100**	**130**	100 UJ	110 U	**280**	**230**	**230** J	100 UJ
BTEX (µg/L)														
Method SW8021B/SW021B MOD														
Benzene	5		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
Ethylbenzene	700		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
o-Xylene	1,000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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

	Cleanup Screening Levels for Groundwater	MW-05S 16I0325-10 9/20/2016	Dup of MW-05S PZ-30 16I0325-16 9/20/2016	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-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	MW-01D PJ99E 8/10/2009	MW-01D QF84I 1/15/2010	MW-01D RS33O 10/19/2010
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs) (µg/L)																			
EPA Method SW8270D / SW8270D-SIM																			
Naphthalene	4900	1.0 U	1.0 U	1.0 U	**1.1**	**9.7**	**10.6**	1.0 U	1.0 U	**91**	NA	**1.24**	1.0 U	1.0 U	**2.2**	**0.7** J	**1.8**	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	NA	NA	NA	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	0.2 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
Acenaphthene		**10.8**	**10.1**	**7.2**	**6.9**	**9.1**	**9.1**	**8.1**	**8.1**	**58**	NA	**0.48**	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	NA	NA	NA	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	**30**	NA	**0.31**	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	10.0 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	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	**56**	NA	**1.42**	1.0 U	1.0 U	1.0 U	**0.6** J	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	NA	NA	NA	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	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**8.7**	NA	**0.39**	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	**9.4**	NA	**0.89**	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	**7.6**	NA	**0.39**	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	**1.0**	0.10 U	0.10 U	**0.11**	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	**1.2**	0.10 U	0.10 U	**0.11**	0.10 U	0.10 U	0.10 U	0.10 U	0.11 U	0.10 U
Benzo(b)Fluoranthene		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	0.10 U	0.11 U	NA
Benzo(k)Fluoranthene		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	0.10 U	0.11 U	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	0.2 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
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	0.2 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
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	0.2 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
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	0.2 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-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	NA	NA	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	0.20 U	0.20 U	0.20 U	0.20 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.10 U
cPAH TEQ (a)	0.1 (b)	ND	ND	ND	ND	ND	ND	ND	ND	**0.172**	ND	ND	**0.0121**	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	**0.292**	0.076	0.076	**0.082**	0.076	0.076	0.076	0.076	0.083	0.071
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	**18**	0.10 U	0.10 U	**0.2** UJ	0.25 U	0.25 UJ	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	NA	50 U	50 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U
Method NWTPH-Dx (µg/L)																			
Diesel	500	100 UJ	100 UJ	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	250 U	250 U	100 U
Motor Oil	500	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	500 U	500 U	200 U
Creosote Oil	500	**121**	**153**	100 U	100 U	200 U	200 U	200 U	200 U	NA	**106**	NA	NA	250 U	500 U	250 U	250 U	250 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	NA
Toluene	1,000	NA	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	NA
m, p-Xylene	1,000	NA	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	NA

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

	Cleanup Screening Levels for Groundwater	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	MW-01D 18C0203-15 3/9/2018	MW-02D 10/7/1998	MW-02D 2006030294-02 3/22/2006	MW-02D 2006110251-05 11/15/2006
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	**1.8**	**1.1**	**1.2**	**1.9**	**2.7**	**1.2**	**2.5**	**1.3**	1.0 U	1.0 U	**1.7**	**600**	NA	**143**
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	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	1.0 U	1.0 U	1.0 U	1.0 U	**1.0**	NA	**0.95**
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	**54**	NA	**96**
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	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	1.0 U	1.0 U	1.0 U	1.0 U	**18**	NA	**40**
Pentachlorophenol	3	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	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	1.0 U	1.0 U	1.0 U	1.0 U	**7.1**	NA	**27**
Carbazole		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	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	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	**0.50**
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	**2.0**	NA	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 U	1.0 U	1.0 U	1.0 U	1.0 U	**1.7**	NA	0.10 U
Benzo(a)Anthracene		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	0.10 U	1.0 U	0.10 U	0.10 U
Chrysene		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	0.10 U	1.0 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	1.0 U	0.10 U	0.10 U
Benzo(k)Fluoranthene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.0 U	0.10 U	0.10 U
Benzo(a)Pyrene		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	0.10 U	1.0 U	0.10 U	0.10 U
Indeno(1,2,3-cd)Pyrene		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	0.10 U	1.0 U	0.10 U	0.10 U
Dibenz(a,h)Anthracene		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	0.10 U	1.0 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	NA	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	1.0 U	1.0 U	1.0 U	1.0 U	NA	NA	NA
Total Benzofluoranthenes		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	0.20 U	NA	NA	NA
cPAH TEQ (a)	0.1 (b)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**15**	ND	ND
cPAH TEQ (a) (Using 1/2 RL for ND)	0.1 (b)	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	0.076	ND	0.076	0.076
PENTACHLOROPHENOL (µg/L)																			
EPA Method SW8041A/SW8270C,D																			
Pentachlorophenol	3	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	0.25 U	5.0 U	0.10 U	10 U
PETROLEUM HYDROCARBONS																			
Method NWTPH-Gx (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	100 U	100 U	100 U	100 U	100 U	NA	**495**	**830**
Method NWTPH-Dx (µg/L)																			
Diesel	500	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	100 U	**1,800**	100 U	100 U
Motor Oil	500	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	200 U	**5,200**	500 U	500 U
Creosote Oil	500	200 U	200 U	200 U	100 U	**160**	100 U	100 U	**290**	**140**	**110**	110 U	100 U	100 U	200 U	200 U	NA	**790**	**1,710**
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	NA
Toluene	1,000	NA	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	NA
m, p-Xylene	1,000	NA	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	NA

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

	Cleanup Screening Levels for Groundwater	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	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
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs) (µg/L)																			
EPA Method SW8270D / SW8270D-SIM																			
Naphthalene	4900	**680** J	**500** J	**380**	1.1 U	**210**	**230**	**180**	1.0 U	**76**	**110**	**19**	**43**	**1.0**	1.0 U	1.0 U	1.0 U	**6**	1.0 U
2-Methylnaphthalene		**120**	**85**	**94**	1.1 U	**26**	**38**	**36**	1.0 U	**13**	**9.4**	**1.5**	**11**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Acenaphthylene		**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	**1.1**	1.0 U	1.0 U	1.0 U	**2.3**	1.0 U	**3.1**
Acenaphthene		**86** J	**67** J	**70**	1.1 U	**26**	**35**	**34**	**8.8**	**21**	**18**	**9.3**	**26**	**7.2**	**4.7**	**6.6**	**3.8**	**3.8**	**2.2**
Dibenzofuran		**35**	**26**	**30**	1.1 U	**8.1**	**12**	**14**	**3.0**	**7.9**	**6.1**	**3.2**	**11**	**2.8**	**1.0**	**2.3**	1.0 U	**1.2**	1.0 U
Fluorene		**37** J	**28** J	**30**	1.1 U	**9.3**	**12**	**15**	**11**	**8.4**	**5.8**	**3.8**	**13**	**4.7**	**3.3**	**3.2**	**1.0**	**1.9**	**1.5**
Pentachlorophenol	3	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	10 U	10 U	10 U	10 U	10 UJ	10 UJ	10 UJ
Phenanthrene		**23** J	**18** J	**22**	1.1 U	**6.0**	**7.2**	**9.1**	**5.0**	**5.1**	**3.9**	**2.3**	**8.3**	**2.2**	1.0 U	**2.0**	1.0 U	**1.4**	1.0 U
Carbazole		**23**	**16**	**21**	**1.5**	**8.0**	**9.0**	**9.1**	**8.3** J	**5.7**	**4.9**	**1.4**	**9.0**	NA	NA	NA	**4.0**	1.0 U	**1.6**
Anthracene		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	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	1.1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	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	1.1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	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	0.11 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	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
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	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	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	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	0.11 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	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
Benzo(g,h,i)Perylene		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	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1-Methylnaphthalene		**77**	**68**	**66**	1.1 U	**22**	**32**	**30**	1.0 U	**15**	**13**	**5.1**	**19**	**1.9**	1.0 U	**2.1**	1.0 U	**1.2**	1.0 U
Total Benzofluoranthenes		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	0.11 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	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	0.071	0.071	0.071	0.076	0.076	0.076	0.071	0.078	0.076	0.076
PENTACHLOROPHENOL (µg/L)																			
EPA Method SW8041A/SW8270C,D																			
Pentachlorophenol	3	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	0.25 U	0.25 U	**0.37**	0.25 U	0.25 U	0.25 U	0.25 U
PETROLEUM HYDROCARBONS																			
Method NWTPH-Gx (µg/L)																			
Gasoline	1,000	**3,100**	**2,900**	**1,700**	**980**	**760**	**790**	**600**	**420**	**620**	250 U	250 U	**510**	250 U	**620**	250 U	250 U	250 U	250 U
Method NWTPH-Dx (µg/L)																			
Diesel	500	**290**	**280**	**540**	250 U	250 U	250 U	250 U	100 U	120 U	**140**	100 U	**130**	100 U	**160**	100 U	100 U	120 U	100 U
Motor Oil	500	500 U	500 U	500 U	500 U	500 U	250 U	500 U	200 U	230 U	200 U	**210**	200 U	200 U	**470**	200 U	200 U	230 U	200 U
Creosote Oil	500	NA	NA	**4,200**	500 U	**990**	**600**	**700**	**270**	**280**	**440**	200 U	**910**	**270**	**530**	100 U	**130**	120 U	**140**
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	NA
Toluene	1,000	NA	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	NA
m, p-Xylene	1,000	NA	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	NA

Table A-1
Historical Analytical Results
Groundwater Compliance Monitoring
Cascade Pole Site
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	Cleanup Screening Levels for Groundwater	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-05D 10/7/1998	MW-05D 2006030294-06 3/22/2006	MW-05D 2006110275-02 11/16/2006	MW-05D LS21D 10/2/2007
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs) (µg/L)										
EPA Method SW8270D / SW8270D-SIM										
Naphthalene	4900	1.0 U	**1.7**	1.0 U	**75.0**	**5.6**	**4.0**	NA	**21.0**	**28**
2-Methylnaphthalene		1.0 U	1.0 U	1.0 U	**11.0**	**1.6**	NA	NA	NA	**3.0**
Acenaphthylene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**4.1**	NA	**0.10**	1.0 U
Acenaphthene		1.0 U	1.0 U	**4.7**	**17.2**	**4.6**	**15**	NA	**6.39**	**5.8**
Dibenzofuran		1.0 U	1.0 U	**1.3**	**5.2**	**1.3**	NA	NA	NA	**2.2**
Fluorene		1.0 U	1.0 U	**2.1**	**5.4**	**1.6**	**5.0**	NA	**2.60**	**1.8**
Pentachlorophenol	3	10 U	10 U	10 U	10.0 U	10.0 U	NA	NA	NA	5.0 U
Phenanthrene		1.0 U	1.0 U	**1.5**	**4.4**	**1.4**	**8.5**	NA	**0.89**	**1.1**
Carbazole		1.0 U	**1.1**	1.0 U	**5.3**	1.0 U	NA	NA	NA	**1.5**
Anthracene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	**0.25**	1.0 U
Fluoranthene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**8.5**	NA	**0.60**	1.0 U
Pyrene	2600	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**7.0**	NA	**0.27**	1.0 U
Benzo(a)Anthracene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	1.0 U	0.10 U	0.10 U	1.0 U
Chrysene		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
Benzo(b)Fluoranthene		NA	NA	NA	NA	NA	1.0 U	0.10 U	0.10 U	0.10 U
Benzo(k)Fluoranthene		NA	NA	NA	NA	NA	1.0 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	1.0 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	1.0 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	1.0 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	NA	0.10 U	1.0 U
1-Methylnaphthalene		1.0 U	1.0 U	**1.6**	**12.7**	**1.8**	NA	NA	NA	**2.8**
Total Benzofluoranthenes		0.10 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	**4.0**	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	ND	0.076	0.076	0.076
PENTACHLOROPHENOL (µg/L)										
EPA Method SW8041A/SW8270C,D										
Pentachlorophenol	3	0.31 U	0.25 U	0.25 U	0.25 U	0.25 U	5.0 U	0.10 U	0.10 U	0.22 U
PETROLEUM HYDROCARBONS										
Method NWTPH-Gx (µg/L)										
Gasoline	1,000	100 U	**140**	100 U	**188**	100 U	NA	50 U	50 U	250 U
Method NWTPH-Dx (µg/L)										
Diesel	500	100 U	100 UJ	100 U	100 U	100 U	**440**	100 U	100 U	250 U
Motor Oil	500	210 U	200 U	200 U	200 U	200 U	**520**	500 U	500 U	500 U
Creosote Oil	500	110 U	100 U	100 U	**299**	100 U	NA	NA	NA	NA
BTEX (µg/L)										
Method SW8021B/SW021B MOD										
Benzene	5	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	700	NA	NA	NA	NA	NA	NA	NA	NA	NA
m, p-Xylene	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA

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Cascade Pole Site
Port of Olympia, Washington

	Cleanup Screening Levels for Groundwater	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	MW-05D ANH7F 9/24/2015	MW-05D AWD0B 2/16/2016	MW-05D 16I0325-09 9/20/2016
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs) (µg/L)																			
EPA Method SW8270D / SW8270D-SIM																			
Naphthalene	4900	**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	1.0 U	1.0 U	1.0 U
2-Methylnaphthalene		**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	1.0 U	1.0 U	1.0 U
Acenaphthylene		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	1.0 U	1.0 U	1.0 U
Acenaphthene		**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	**3.2**	1.0 U	**3.2**
Dibenzofuran		**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	1.0 U	1.0 U	1.0 U
Fluorene		**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	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	10 U	10 U	10 U	10 U	10 UJ	10 UJ	10 UJ	10 U	10 U
Phenanthrene		**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	1.0 U	1.0 U	1.0 U
Carbazole		**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	**1.7**	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	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	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	1.0 U
Benzo(a)Anthracene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.12 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	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	0.12 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	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	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)Fluoranthene		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	NA	NA	NA
Benzo(a)Pyrene		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.12 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	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	0.12 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	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	0.12 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	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	1.0 U
1-Methylnaphthalene		**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	1.0 U	1.0 U	1.0 U
Total Benzofluoranthenes		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	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	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	0.071	0.085	0.078	0.071	0.076	0.076	0.076	0.071	0.078	0.076	0.076	0.076	0.076
PENTACHLOROPHENOL (µg/L)																			
EPA Method SW8041A/SW8270C,D																			
Pentachlorophenol	3	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	0.25 U	0.25 U	**0.79** J
PETROLEUM HYDROCARBONS																			
Method NWTPH-Gx (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	100 U	100 U
Method NWTPH-Dx (µg/L)																			
Diesel	500	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	100 U	100 U	100 UJ
Motor Oil	500	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	200 U	200 U	200 U
Creosote Oil	500	**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	**130**	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	NA
Toluene	1,000	NA	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	NA
m, p-Xylene	1,000	NA	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	NA

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

	Cleanup Screening Levels for Groundwater	MW-05D 17C0014-05 2/28/2017	MW-05D 17J0190-05 10/11/2017	MW-05D 18C0203-07 3/8/2018	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	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
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs) (µg/L)																			
EPA Method SW8270D / SW8270D-SIM																			
Naphthalene	4900	1.0 U	**3.1**	1.0 U	**1.54**	**8.7**	**11**	**30**	**4.8**	1.0 U	1.0 U	1.0 U	**5.2**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Methylnaphthalene		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	1.0 U	1.0 U	1.0 U	1.0 U
Acenaphthylene		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	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Acenaphthene		1.0 U	**7.0**	1.0 U	**50.0**	**64**	**44**	**51**	**25**	1.0 U	**5.4**	1.0 U	**4.3**	1.0 U	**5.2**	1.0 U	**1.5**	1.0 U	1.0 U
Dibenzofuran		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	1.0 U	**2.5**	1.0 U	1.0 U	1.0 U	1.0 U
Fluorene		1.0 U	**1.9**	1.0 U	**20.7**	**25**	**16**	**21**	**8.7**	1.0 U	**2.4**	1.0 U	1.0 U	1.0 U	**2.0**	1.0 U	1.0 U	1.0 U	1.0 U
Pentachlorophenol	3	10 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	5.0 U	10 U	10 U	10 U	10 U	10 UJ
Phenanthrene		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	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbazole		1.0 U	**3.0**	1.0 U	NA	**14**	**11**	**13**	**3.0**	1.0 U	1.0 UJ	1.0 U	**1.4**	1.0 U	1.0 U	NA	NA	NA	1.0 U
Anthracene		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	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	**5.47**	**5.9**	**1.8**	**3.2**	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
Pyrene	2600	1.0 U	1.0 U	1.0 U	**2.44**	**2.2**	1.0 U	**1.4**	1.0 U	1.0 U	1.0 U	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	**0.37**	**0.24**	**0.14**	**0.13**	0.10 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	0.11 U
Chrysene		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	0.10 U	0.10 U	0.10 U	0.11 U	0.10 U	0.11 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	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)Fluoranthene		NA	NA	NA	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
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	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	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	0.10 U	0.11 U
Benzo(g,h,i)Perylene		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	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1-Methylnaphthalene		1.0 U	**1.2**	1.0 U	NA	**34**	**27**	**34**	**12**	1.0 U	1.0 U	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	NA	NA	NA	NA	NA	NA	0.10 U	0.10 U	0.10 U	0.10 U	0.20 U	0.20 U	0.22 U	0.10 U	0.11 U
cPAH TEQ (a)	0.1 (b)	ND	ND	ND	**0.040**	**0.0264**	**0.015**	**0.014**	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	**0.110**	**0.096**	**0.085**	**0.084**	0.076	0.076	0.071	0.071	0.071	0.071	0.076	0.076	0.083	0.071	0.078
PENTACHLOROPHENOL (µg/L)																			
EPA Method SW8041A/SW8270C,D																			
Pentachlorophenol	3	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**	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	**83**	**750**	**630**	**1,000**	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	100 U	250 U	**290**	**270**	250 U	250 U	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	500 U	500 U	500 U	500 U	250 U	500 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U
Creosote Oil	500	100 U	200 U	200 U	**471**	NA	**1,100**	**960**	500 U	250 U	100 U	200 U	200 U	200 U	100 U	**110**	100 U	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	NA
Toluene	1,000	NA	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	NA
m, p-Xylene	1,000	NA	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	NA

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

	Cleanup Screening Levels for Groundwater	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
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
2-Methylnaphthalene		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
Acenaphthene		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
Fluorene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Pentachlorophenol	3	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
Carbazole		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
Fluoranthene		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
Benzo(a)Anthracene		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
Benzo(b)Fluoranthene		NA	NA	NA	NA	NA	NA	NA
Benzo(k)Fluoranthene		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
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
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
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-Methylnaphthalene		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	0.10 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
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
PENTACHLOROPHENOL (µg/L)								
EPA Method SW8041A/SW8270C,D								
Pentachlorophenol	3	0.25 U	0.25 U	0.25 U	**0.88** J	0.25 U	0.25 U	0.25 U
PETROLEUM HYDROCARBONS								
Method NWTPH-Gx (µg/L)								
Gasoline	1,000	250 U	250 U	100 U	100 U	100 U	100 U	100 U
Method NWTPH-Dx (µg/L)								
Diesel	500	100 U	100 U	100 U	100 UJ	100 U	100 U	100 U
Motor Oil	500	210 U	200 U	200 U	200 U	200 U	200 U	200 U
Creosote Oil	500	100 U	100 U	100 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
Toluene	1,000	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	700	NA	NA	NA	NA	NA	NA	NA
m, p-Xylene	1,000	NA	NA	NA	NA	NA	NA	NA
o-Xylene	1,000	NA	NA	NA	NA	NA	NA	NA

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 gas 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.

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

Table A-2
Cumulative Groundwater Elevations
Cascade Pole Site
Port of Olympia, Washington

Well Pair	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	11/8/2006	PZ-13	4.67	19.50	14.83	--		
	11/8/2006	PZ-12	4.02	19.00	14.98	15.50	No	
	12/31/2006	PZ-13	5.56	19.50	13.94	--		
	12/31/2006	PZ-12	3.91	19.00	15.09	15.50	No	
	3/2/2007	PZ-13	6.06	19.50	13.44	--		
	3/2/2007	PZ-12	4.04	19.00	14.96	15.50	No	
	3/31/2007	PZ-13	6.39	19.50	13.11	--		
	3/31/2007	PZ-12	4.03	19.00	14.97	15.50	No	
	4/23/2007	PZ-13	6.58	19.50	12.92	--		
	4/23/2007	PZ-12	4.42	19.00	14.58	15.50	No	
	5/28/2007	PZ-13	7.36	19.50	12.14	--		
	5/28/2007	PZ-12	4.88	19.00	14.12	15.50	No	
	6/30/2007	PZ-13	7.33	19.50	12.17	--		
	6/30/2007	PZ-12	5.11	19.00	13.89	15.50	No	
	8/1/2007	PZ-13	7.19	19.50	12.31	--		
	8/1/2007	PZ-12	5.10	19.00	13.90	15.50	No	
	9/29/2007	PZ-13	7.32	19.50	12.18	--		
	9/29/2007	PZ-12	5.63	19.00	13.37	15.50	No	
	11/22/2007	PZ-13	6.91	19.50	12.59	--		
	11/22/2007	PZ-12	5.27	19.00	13.73	15.50	No	
	1/26/2008	PZ-13	5.99	19.50	13.51	--		
	1/26/2008	PZ-12	3.93	19.00	15.07	15.50	No	
	2/28/2008	PZ-13	6.44	19.50	13.06	--		
	2/28/2008	PZ-12	3.69	19.00	15.31	15.50	No	
	3/19/2008	PZ-13	6.71	19.50	12.79	--		
	3/19/2008	PZ-12	3.84	19.00	15.16	15.50	No	
	4/28/2008	PZ-13	7.19	19.50	12.31	--		
	4/28/2008	PZ-12	4.00	19.00	15.00	15.50	No	
	5/31/2008	PZ-13	7.39	19.50	12.11	--		
	5/31/2008	PZ-12	4.43	19.00	14.57	15.50	No	
	6/30/2008	PZ-13	7.26	19.50	12.24	--		
	6/30/2008	PZ-12	4.58	19.00	14.42	15.50	No	
	7/12/2008	PZ-13	7.36	19.50	12.14	--		
	7/12/2008	PZ-12	4.72	19.00	14.28	15.50	No	
	8/28/2008	PZ-13	7.34	19.50	12.16	--		
	8/28/2008	PZ-12	5.23	19.00	13.77	15.50	No	
	9/20/2008	PZ-13	7.32	19.50	12.18	--		
	9/20/2008	PZ-12	5.39	19.00	13.61	15.50	No	
	10/12/2008	PZ-13	8.36	19.50	11.14	--		
	10/12/2008	PZ-12	5.51	19.00	13.49	15.50	No	
	11/30/2008	PZ-13	6.42	19.50	13.08	--		
	11/30/2008	PZ-12	4.83	19.00	14.17	15.50	No	
	12/31/2008	PZ-13	6.42	19.50	13.08	--		

Table A-2
Cumulative Groundwater Elevations
Cascade Pole Site
Port of Olympia, Washington

Well Pair	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
	12/31/2008	PZ-12	4.83	19.00	14.17	15.50	No	
	1/31/2009	PZ-13	6.57	19.50	12.93	--		
	1/31/2009	PZ-12	4.39	19.00	14.61	15.50	No	
	2/23/2009	PZ-13	6.95	19.50	12.55	--		
	2/23/2009	PZ-12	4.59	19.00	14.41	15.50	No	
	3/29/2009	PZ-13	6.68	19.50	12.82	--		
	3/29/2009	PZ-12	4.28	19.00	14.72	15.50	No	
	4/18/2009	PZ-13	7.61	19.50	11.89	--		
	4/18/2009	PZ-12	4.31	19.00	14.69	15.50	No	
	5/16/2009	PZ-13	6.62	19.50	12.88	--		
	5/16/2009	PZ-12	4.10	19.00	14.90	15.50	No	
	6/21/2009	PZ-13	7.03	19.50	12.47	--		
	6/21/2009	PZ-12	4.58	19.00	14.42	15.50	No	
	7/20/2009	PZ-13	7.09	19.50	12.41	--		
	7/20/2009	PZ-12	4.94	19.00	14.06	15.50	No	
	8/10/2009	PZ-13	7.31	19.50	12.19	--		
	8/10/2009	PZ-12	5.18	19.00	13.82	15.50	No	
	9/7/2009	PZ-13	7.91	19.50	11.59	--		
	9/7/2009	PZ-12	5.33	19.00	13.67	15.50	No	
	10/10/2009	PZ-13	7.45	19.50	12.05	--		
	10/10/2009	PZ-12	5.85	19.00	13.15	15.50	No	
	11/28/2009	PZ-13	5.99	19.50	13.51	--		
	11/28/2009	PZ-12	4.74	19.00	14.26	15.50	No	
	12/31/2009	PZ-13	6.06	19.50	13.44	--		
	12/31/2009	PZ-12	4.70	19.00	14.30	15.50	No	
	1/14/2010	PZ-13	5.20	19.50	14.30	--		
	1/14/2010	PZ-12	4.16	19.00	14.84	15.50	No	
	2/21/2010	PZ-13	6.04	19.50	13.46	--		
	2/21/2010	PZ-12	4.01	19.00	14.99	15.50	No	
	3/17/2010	PZ-13	6.40	19.50	13.10	--		
	3/17/2010	PZ-12	3.98	19.00	15.02	15.50	No	
	4/25/2010	PZ-13	6.65	19.50	12.85	--		
	4/25/2010	PZ-12	4.06	19.00	14.94	15.50	No	
	5/16/2010	PZ-13	6.99	19.50	12.51	--		
	5/16/2010	PZ-12	4.15	19.00	14.85	15.50	No	
	6/26/2010	PZ-13	6.83	19.50	12.67	--		
	6/26/2010	PZ-12	4.47	19.00	14.53	15.50	No	
	7/23/2010	PZ-13	7.33	19.50	12.17	--		
	7/23/2010	PZ-12	4.91	19.00	14.09	15.50	No	
	8/30/2010	PZ-13	7.49	19.50	12.01	--		
	8/30/2010	PZ-12	5.17	19.00	13.83	15.50	No	
	9/30/2010	PZ-13	6.98	19.50	12.52	--		
	9/30/2010	PZ-12	5.17	19.00	13.83	15.50	No	

Table A-2
Cumulative Groundwater Elevations
Cascade Pole Site
Port of Olympia, Washington

Well Pair	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
	10/18/2010	PZ-13	7.11	19.50	12.39	--		
	10/18/2010	PZ-12	4.91	19.00	14.09	15.50	No	
	11/29/2010	PZ-13	6.23	19.50	13.27	--		
	11/29/2010	PZ-12	4.40	19.00	14.60	15.50	No	
	12/25/2010	PZ-13	5.21	19.50	14.29	--		
	12/25/2010	PZ-12	4.08	19.00	14.92	15.50	No	
	1/29/2011	PZ-13	6.01	19.50	13.49	--		
	1/29/2011	PZ-12	4.18	19.00	14.82	15.50	No	
	2/20/2011	PZ-13	6.13	19.50	13.37	--		
	2/20/2011	PZ-12	4.28	19.00	14.72	15.50	No	
	3/24/2011	PZ-13	5.23	19.50	14.27	--		
	3/24/2011	PZ-12	3.72	19.00	15.28	15.50	No	
	4/23/2011	PZ-13	6.18	19.50	13.32	--		
	4/23/2011	PZ-12	3.84	19.00	15.16	15.50	No	
	5/30/2011	PZ-13	6.75	19.50	12.75	--		
	5/30/2011	PZ-12	4.25	19.00	14.75	15.50	No	
	6/26/2011	PZ-13	7.21	19.50	12.29	--		
	6/26/2011	PZ-12	4.78	19.00	14.22	15.50	No	
	7/30/2011	PZ-13	7.26	19.50	12.24	--		
	7/30/2011	PZ-12	5.00	19.00	14.00	15.50	No	
	8/8/2011	PZ-13	7.17	19.50	12.33	--		
	8/8/2011	PZ-12	4.96	19.00	14.04	15.50	No	
	9/24/2011	PZ-13	7.61	19.50	11.89	--		
	9/24/2011	PZ-12	5.31	19.00	13.69	15.50	No	
	10/29/2011	PZ-13	6.85	19.50	12.65	--		
	10/29/2011	PZ-12	5.45	19.00	13.55	15.50	No	
	11/26/2011	PZ-13	4.98	19.50	14.52	--		
	11/26/2011	PZ-12	4.05	19.00	14.95	15.50	No	
	12/26/2011	PZ-13	6.87	19.50	12.63	--		
	12/26/2011	PZ-12	5.27	19.00	13.73	15.50	No	
	1/28/2012	PZ-13	4.60	19.50	14.90	--		
	1/28/2012	PZ-12	3.55	19.00	15.45	15.50	No	
	2/26/2012	PZ-13	5.77	19.50	13.73	--		
	2/26/2012	PZ-12	3.95	19.00	15.05	15.50	No	
	3/7/2012	PZ-13	6.64	19.50	12.86	--		
	3/7/2012	PZ-12	4.20	19.00	14.80	15.50	No	
	4/21/2012	PZ-13	6.15	19.50	13.35	--		
	4/21/2012	PZ-12	4.09	19.00	14.91	15.50	No	
	5/19/2012	PZ-13	6.83	19.50	12.67	--		
	5/19/2012	PZ-12	4.32	19.00	14.68	15.50	No	
	6/30/2012	PZ-13	6.89	19.50	12.61	--		
	6/30/2012	PZ-12	4.12	19.00	14.88	15.50	No	

Table A-2
Cumulative Groundwater Elevations
Cascade Pole Site
Port of Olympia, Washington

Well Pair	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
	7/27/2012	PZ-13	7.15	19.50	12.35	--		
	7/27/2012	PZ-12	4.05	19.00	14.95	15.50	No	
	8/12/2012	PZ-13	7.29	19.50	12.21	--		
	8/12/2012	PZ-12	3.93	19.00	15.07	15.50	No	
	9/30/2012	PZ-13	7.22	19.50	12.28	--		
	9/30/2012	PZ-12	3.97	19.00	15.03	15.50	No	
	10/24/2012	PZ-13	6.81	19.50	12.69	--		
	10/24/2012	PZ-12	4.13	19.00	14.87	15.50	No	
	11/24/2012	PZ-13	5.04	19.50	14.46	--		
	11/24/2012	PZ-12	3.52	19.00	15.48	15.50	No	
	12/30/2012	PZ-13	5.15	19.50	14.35	--		
	12/30/2012	PZ-12	3.56	19.00	15.44	15.50	No	
	1/25/2013	PZ-13	6.57	19.50	12.93	--		
	1/25/2013	PZ-12	4.11	19.00	14.89	15.50	No	
	2/9/2013	PZ-13	6.68	19.50	12.82	--		
	2/9/2013	PZ-12	4.38	19.00	14.62	15.50	No	
	3/31/2013	PZ-13	6.85	19.50	12.65	--		
	3/31/2013	PZ-12	NA	19.00	NA	15.50	--	covered with railcar
	4/29/2013	PZ-13	6.90	19.50	12.60	--		
	4/29/2013	PZ-12	NA	19.00	NA	15.50	--	rail cars over well
	5/31/2013	PZ-13	6.96	19.50	12.54	--		
	5/31/2013	PZ-12	5.09	19.00	13.91	15.50	No	
	6/9/2013	PZ-13	7.17	19.50	12.33	--		
	6/9/2013	PZ-12	5.16	19.00	13.84	15.50	No	
	7/21/2013	PZ-13	7.07	19.50	12.43	--		
	7/21/2013	PZ-12	5.47	19.00	13.53	15.50	No	
	8/29/2013	PZ-13	7.37	19.50	12.13	--		
	8/29/2013	PZ-12	5.76	19.00	13.24	15.50	No	
	9/21/2013	PZ-13	7.00	19.50	12.50	--		
	9/21/2013	PZ-12	5.71	19.00	13.29	15.50	No	
	10/6/2013	PZ-13	5.69	19.50	13.81	--		
	10/6/2013	PZ-12	4.85	19.00	14.15	15.50	No	
	11/10/2013	PZ-13	6.67	19.50	12.83	--		
	11/10/2013	PZ-12	5.69	19.00	13.31	15.50	No	
	12/15/2013	PZ-13	7.05	19.50	12.45	--		
	12/15/2013	PZ-12	5.90	19.00	13.10	15.50	No	
	1/5/2014	PZ-13	7.03	19.50	12.47	--		
	1/5/2014	PZ-12	6.05	19.00	12.95	15.50	No	
	2/1/2014	PZ-13	6.53	19.50	12.97	--		
	2/1/2014	PZ-12	5.69	19.00	13.31	15.50	No	
	3/1/2014	PZ-13	5.59	19.50	13.91	--		
	3/1/2014	PZ-12	5.03	19.00	13.97	15.50	No	

Table A-2
Cumulative Groundwater Elevations
Cascade Pole Site
Port of Olympia, Washington

Well Pair	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
	4/6/2014	PZ-13	6.08	19.50	13.42	--		
	4/6/2014	PZ-12	4.90	19.00	14.10	15.50	No	
	5/17/2014	PZ-13	6.49	19.50	13.01	--		
	5/17/2014	PZ-12	4.88	19.00	14.12	15.50	No	
	6/22/2014	PZ-13	7.19	19.50	12.31	--		
	6/22/2014	PZ-12	5.41	19.00	13.59	15.50	No	
	7/5/2014	PZ-13	7.34	19.50	12.16	--		
	7/5/2014	PZ-12	5.57	19.00	13.43	15.50	No	
	8/12/2014	PZ-13	7.19	19.50	12.31	--		
	8/12/2014	PZ-12	5.97	19.00	13.03	15.50	No	
	9/23/2014	PZ-13	7.32	19.50	12.18	--		
	9/23/2014	PZ-12	6.20	19.00	12.80	15.50	No	
	10/11/2014	PZ-13	6.83	19.50	12.67	--		
	10/11/2014	PZ-12	6.20	19.00	12.80	15.50	No	
	11/9/2014	PZ-13	5.79	19.50	13.71	--		
	11/9/2014	PZ-12	5.71	19.00	13.29	15.50	No	
	12/7/2014	PZ-13	5.93	19.50	13.57	--		
	12/7/2014	PZ-12	5.56	19.00	13.44	15.50	No	
	1/3/2015	PZ-13	6.17	19.50	13.33	--		
	1/3/2015	PZ-12	5.34	19.00	13.66	15.50	No	
	2/14/2015	PZ-13	5.90	19.50	13.60	--		
	2/14/2015	PZ-12	5.05	19.00	13.95	15.50	No	
	3/9/2015	PZ-13	7.01	19.50	12.49	--		
	3/9/2015	PZ-12	5.46	19.00	13.54	15.50	No	
	4/5/2015	PZ-13	6.74	19.50	12.76	--		
	4/5/2015	PZ-12	5.18	19.00	13.82	15.50	No	
	5/16/2015	PZ-13	7.21	19.50	12.29	--		
	5/16/2015	PZ-12	5.71	19.00	13.29	15.50	No	
	6/7/2015	PZ-13	7.21	19.50	12.29	--		
	6/7/2015	PZ-12	5.90	19.00	13.10	15.50	No	
	7/7/2015	PZ-13	7.02	19.50	12.48	--		
	7/7/2015	PZ-12	6.16	19.00	12.84	15.50	No	
	8/1/2015	PZ-13	7.23	19.50	12.27	--		
	8/1/2015	PZ-12	6.38	19.00	12.62	15.50	No	
	9/24/2015	PZ-13	7.49	19.50	12.01	--		
	9/24/2015	PZ-12	6.76	19.00	12.24	15.50	No	
	10/16/2015	PZ-13	7.08	19.50	12.42	--		
	10/16/2015	PZ-12	6.64	19.00	12.36	15.50	No	
	11/3/2015	PZ-13	6.41	19.50	13.09	--		
	11/3/2015	PZ-12	6.22	19.00	12.78	15.50	No	
	12/4/2015	PZ-13	5.77	19.50	13.73	--		
	12/4/2015	PZ-12	5.41	19.00	13.59	15.50	No	

Table A-2
Cumulative Groundwater Elevations
Cascade Pole Site
Port of Olympia, Washington

Well Pair	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
	1/15/2016	PZ-13	5.71	19.50	13.79	--		
	1/15/2016	PZ-12	4.84	19.00	14.16	15.50	No	
	2/16/2016	PZ-13	5.30	19.50	14.20	--		
	2/16/2016	PZ-12	5.35	19.00	13.65	15.50	No	
	3/19/2016	PZ-13	5.00	19.50	14.50	--		
	3/19/2016	PZ-12	3.81	19.00	15.19	15.50	No	
	4/3/2016	PZ-13	6.31	19.50	13.19	--		
	4/3/2016	PZ-12	4.01	19.00	14.99	15.50	No	
	5/14/2016	PZ-13	7.04	19.50	12.46	--		
	5/14/2016	PZ-12	4.64	19.00	14.36	15.50	No	
	6/12/2016	PZ-13	7.07	19.50	12.43	--		
	6/12/2016	PZ-12	4.70	19.00	14.30	15.50	No	
	7/5/2016	PZ-13	7.11	19.50	12.39	--		
	7/5/2016	PZ-12	4.87	19.00	14.13	15.50	No	
	8/6/2016	PZ-13	7.30	19.50	12.20	--		
	8/6/2016	PZ-12	5.02	19.00	13.98	15.50	No	
	9/4/2016	PZ-13	7.32	19.50	12.18	--		
	9/4/2016	PZ-12	5.14	19.00	13.86	15.50	No	
	10/1/2016	PZ-13	7.27	19.50	12.23	--		
	10/1/2016	PZ-12	5.26	19.00	13.74	15.50	No	Downpour of rain from 1155-1225 halted work.
	11/6/2016	PZ-13	7.43	19.50	12.07	--		
	11/6/2016	PZ-12	4.11	19.00	14.89	15.50	No	
	12/17/2016	PZ-13	5.44	19.50	14.06	--		
	12/17/2016	PZ-12	4.02	19.00	14.98	15.50	No	
	1/21/2017	PZ-13	5.34	19.50	14.16	--		
	1/21/2017	PZ-12	3.65	19.00	15.35	15.50	No	
	2/2/2017	PZ-13	5.94	19.50	13.56	--		
	2/2/2017	PZ-12	4.06	19.00	14.94	15.50	No	
	2/28/2017	PZ-13	5.36	19.50	14.14	--		
	2/28/2017	PZ-12	3.69	19.00	15.31	15.50	No	
	3/30/2017	PZ-13	4.34	19.50	15.16	--		
	3/30/2017	PZ-12	3.14	19.00	15.86	15.50	Yes	
	4/30/2017	PZ-13	5.69	19.50	13.81	--		
	4/30/2017	PZ-12	3.50	19.00	15.50	15.50	No	
	5/21/2017	PZ-13	6.27	19.50	13.23	--		
	5/21/2017	PZ-12	3.64	19.00	15.36	15.50	No	
	6/6/2017	PZ-13	6.64	19.50	12.86	--		
	6/6/2017	PZ-12	3.87	19.00	15.13	15.50	No	
	7/8/2017	PZ-13	7.06	19.50	12.44	--		
	7/8/2017	PZ-12	4.17	19.00	14.83	15.50	No	
	8/4/2017	PZ-13	7.18	19.50	12.32	--		
	8/4/2017	PZ-12	4.43	19.00	14.57	15.50	No	
	9/9/2017	PZ-13	7.12	19.50	12.38	--		

Table A-2
Cumulative Groundwater Elevations
Cascade Pole Site
Port of Olympia, Washington

Well Pair	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
	9/9/2017	PZ-12	4.77	19.00	14.23	15.50	No	
	10/11/2017	PZ-13	7.32	19.50	12.18	--		
	10/11/2017	PZ-12	5.04	19.00	13.96	15.50	No	
	11/12/2017	PZ-13	6.01	19.50	13.49	--		
	11/12/2017	PZ-12	4.15	19.00	14.85	15.50	No	
	12/16/2017	PZ-13	6.34	19.50	13.16	--		
	12/16/2017	PZ-12	4.07	19.00	14.93	15.50	No	
	1/1/2018	PZ-13	5.12	19.50	14.38	--		
	1/1/2018	PZ-12	3.62	19.00	15.38	15.50	No	
	2/10/2018	PZ-13	5.73	19.50	13.77	--		
	2/10/2018	PZ-12	3.61	19.00	15.39	15.50	No	
	3/8/2018	PZ-13	6.19	19.50	13.31	--		
	3/8/2018	PZ-12	3.61	19.00	15.39	15.50	No	
2	11/8/2006	PZ-17	7.58	20.48	12.90	--		
	11/8/2006	LW-3	5.62	20.36	14.74	15.50	No	
	12/31/2006	PZ-17	6.98	20.48	13.50	--		
	12/31/2006	LW-3	4.97	20.36	15.39	15.50	No	
	3/2/2007	PZ-17	6.94	20.48	13.54	--		
	3/2/2007	LW-3	4.97	20.36	15.39	15.50	No	
	3/31/2007	PZ-17	6.87	20.48	13.61	--		
	3/31/2007	LW-3	4.79	20.36	15.57	15.50	Yes	
	4/23/2007	PZ-17	7.05	20.48	13.43	--		
	4/23/2007	LW-3	4.84	20.36	15.52	15.50	Yes	
	5/28/2007	PZ-17	7.31	20.48	13.17	--		
	5/28/2007	LW-3	5.43	20.36	14.93	15.50	No	
	6/30/2007	PZ-17	7.48	20.48	13.00	--		
	6/30/2007	LW-3	5.35	20.36	15.01	15.50	No	
	8/1/2007	PZ-17	7.73	20.48	12.75	--		
	8/1/2007	LW-3	5.78	20.36	14.58	15.50	No	
	9/29/2007	PZ-17	7.83	20.48	12.65	--		
	9/29/2007	LW-3	6.38	20.36	13.98	15.50	No	
	11/22/2007	PZ-17	7.89	20.48	12.59	--		
	11/22/2007	LW-3	6.18	20.36	14.18	15.50	No	
	1/26/2008	PZ-17	6.87	20.48	13.61	--		
	1/26/2008	LW-3	4.70	20.36	15.66	15.50	Yes	
	2/28/2008	PZ-17	6.69	20.48	13.79	--		
	2/28/2008	LW-3	4.47	20.36	15.89	15.50	Yes	
	3/19/2008	PZ-17	6.84	20.48	13.64	--		
	3/19/2008	LW-3	4.58	20.36	15.78	15.50	Yes	
	4/28/2008	PZ-17	7.13	20.48	13.35	--		
	4/28/2008	LW-3	4.63	20.36	15.73	15.50	Yes	
	5/31/2008	PZ-17	7.68	20.48	12.80	--		

Table A-2
Cumulative Groundwater Elevations
Cascade Pole Site
Port of Olympia, Washington

Well Pair	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
	5/31/2008	LW-3	5.34	20.36		15.02	15.50	No	
	6/30/2008	PZ-17	7.57	20.48		12.91	--		
	6/30/2008	LW-3	5.54	20.36		14.82	15.50	No	
	7/12/2008	PZ-17	7.63	20.48		12.85	--		
	7/12/2008	LW-3	5.70	20.36		14.66	15.50	No	
	8/28/2008	PZ-17	7.91	20.48		12.57	--		
	8/28/2008	LW-3	5.31	20.36		15.05	15.50	No	
	9/20/2008	PZ-17	7.99	20.48		12.49	--		
	9/20/2008	LW-3	6.37	20.36		13.99	15.50	No	
	10/12/2008	PZ-17	8.21	20.48		12.27	--		
	10/12/2008	LW-3	6.59	20.36		13.77	15.50	No	
	11/30/2008	PZ-17	8.01	20.48		12.47	--		
	11/30/2008	LW-3	5.73	20.36		14.63	15.50	No	
	12/31/2008	PZ-17	7.95	20.48		12.53	--		
	12/31/2008	LW-3	NM	20.36		--	15.50	--	
	1/31/2009	PZ-17	7.77	20.48		12.71	--		
	1/31/2009	LW-3	5.07	20.03	(c)	14.96	15.50	No	
	2/23/2009	PZ-17	7.71	20.48		12.77	--		
	2/23/2009	LW-3	5.58	20.03	(c)	14.45	15.50	No	
	3/29/2009	PZ-17	NM	20.48		--	--		
	3/29/2009	LW-3	6.62	20.03	(c)	13.41	15.50	--	
	4/18/2009	PZ-17	7.73	20.48		12.75	--		
	4/18/2009	LW-3	6.63	20.03	(c)	13.40	15.50	No	
	5/16/2009	PZ-17	7.60	20.48		12.88	--		
	5/16/2009	LW-3	5.05	20.03	(c)	14.98	15.50	No	
	6/21/2009	PZ-17	7.61	20.48		12.87	--		
	6/21/2009	LW-3	7.28	20.03	(c)	12.75	15.50	No	
	7/20/2009	PZ-17	7.79	20.48		12.69	--		
	7/20/2009	LW-3	6.07	20.03	(c)	13.96	15.50	No	
	8/10/2009	PZ-17	7.86	20.48		12.62	--		
	8/10/2009	LW-3	6.55	20.03	(c)	13.48	15.50	No	
	9/7/2009	PZ-17	8.04	20.48		12.44	--		
	9/7/2009	LW-3	6.69	20.03	(c)	13.34	15.50	No	
	10/10/2009	PZ-17	8.13	20.48		12.35	--		
	10/10/2009	LW-3	7.01	20.03	(c)	13.02	15.50	No	
	11/28/2009	PZ-17	7.77	20.48		12.71	--		
	11/28/2009	LW-3	7.26	20.03	(c)	12.77	15.50	No	
	12/31/2009	PZ-17	7.61	20.48		12.87	--		
	12/31/2009	LW-3	7.06	20.03	(c)	12.97	15.50	No	
	1/14/2010	PZ-17	7.46	20.48		13.02	--		
	1/14/2010	LW-3	6.81	20.03	(c)	13.22	15.50	No	
	2/21/2010	PZ-17	7.17	20.48		13.31	--		
	2/21/2010	LW-3	6.94	20.03	(c)	13.09	15.50	No	

Table A-2
Cumulative Groundwater Elevations
Cascade Pole Site
Port of Olympia, Washington

Well Pair	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
	3/17/2010	PZ-17	7.22	20.48		13.26	--		
	3/17/2010	LW-3	6.37	20.03	(c)	13.66	15.50	--	
	4/25/2010	PZ-17	7.04	20.48		13.44	--		
	4/25/2010	LW-3	6.18	20.03	(c)	13.85	15.50	No	
	5/16/2010	PZ-17	7.14	20.48		13.34	--		
	5/16/2010	LW-3	6.22	20.03	(c)	13.81	15.50	No	
	6/26/2010	PZ-17	7.21	20.48		13.27	--		
	6/26/2010	LW-3	6.87	20.03	(c)	13.16	15.50	No	
	7/23/2010	PZ-17	7.35	20.48		13.13	--		
	7/23/2010	LW-3	6.26	20.03	(c)	13.77	15.50	No	
	8/30/2010	PZ-17	7.61	20.48		12.87	--		
	8/30/2010	LW-3	NA	19.83	(c)	NA	15.50	--	
	9/30/2010	PZ-17	7.64	20.48		12.84	--		
	9/30/2010	LW-3	6.63	19.83	(c)	13.20	15.50	No	
	10/18/2010	PZ-17	7.76	20.48		12.72	--		
	10/18/2010	LW-3	5.90	19.83	(c)	13.93	15.50	No	
	11/29/2010	PZ-17	7.50	20.48		12.98	--		
	11/29/2010	LW-3	NA	19.83	(c)	NA	15.50	--	
	12/25/2010	PZ-17	7.00	20.48		13.48	--		
	12/25/2010	LW-3	6.63	19.83	(c)	13.20	15.50	No	
	1/29/2011	PZ-17	7.00	20.48		13.48	--		
	1/29/2011	LW-3	6.13	19.83	(c)	13.70	15.50	No	
	2/20/2011	PZ-17	7.02	20.48		13.46	--		
	2/20/2011	LW-3	5.96	19.83	(c)	13.87	15.50	No	
	3/24/2011	PZ-17	6.55	20.48		13.93	--		
	3/24/2011	LW-3	5.72	19.83	(c)	14.11	15.50	No	
	4/23/2011	PZ-17	6.54	20.48		13.94	--		
	4/23/2011	LW-3	6.04	19.83	(c)	13.79	15.50	No	
	5/30/2011	PZ-17	6.70	20.48		13.78	--		
	5/30/2011	LW-3	5.79	19.83	(c)	14.04	15.50	No	
	6/26/2011	PZ-17	6.95	20.48		13.53	--		
	6/26/2011	LW-3	6.16	19.83	(c)	13.67	15.50	No	
	7/30/2011	PZ-17	7.16	20.48		13.32	--		
	7/30/2011	LW-3	5.30	19.83	(c)	14.53	15.50	No	
	8/8/2011	PZ-17	7.24	20.48		13.24	--		
	8/8/2011	LW-3	5.51	19.83	(c)	14.32	15.50	No	
	9/24/2011	PZ-17	7.45	20.48		13.03	--		
	9/24/2011	LW-3	5.85	19.83	(c)	13.98	15.50	No	
	10/29/2011	PZ-17	7.63	20.48		12.85	--		
	10/29/2011	LW-3	5.98	19.83	(c)	13.85	15.50	No	
	11/26/2011	PZ-17	7.04	20.48		13.44	--		
	11/26/2011	LW-3	6.83	19.83	(c)	13.00	15.50	No	

Table A-2
Cumulative Groundwater Elevations
Cascade Pole Site
Port of Olympia, Washington

Well Pair	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
	12/26/2011	PZ-17	7.63	20.48		12.85	--		
	12/26/2011	LW-3	6.10	19.83	(c)	13.73	15.50	No	Lid stuck.
	1/28/2012	PZ-17	7.14	20.48		13.34	--		
	1/28/2012	LW-3	5.18	19.83	(c)	14.65	15.50	No	Well covered.
	2/26/2012	PZ-17	7.09	20.48		13.39	--		
	2/26/2012	LW-3	4.70	19.83	(c)	15.13	15.50	No	
	3/7/2012	PZ-17	7.22	20.48		13.26	--		
	3/7/2012	LW-3	5.17	19.83	(c)	14.66	15.50	No	
	4/21/2012	PZ-17	6.72	20.48		13.76	--		
	4/21/2012	LW-3	5.63	19.83	(c)	14.20	15.50	No	
	5/19/2012	PZ-17	6.88	20.48		13.60	--		
	5/19/2012	LW-3	5.12	19.83	(c)	14.71	15.50	No	
	6/30/2012	PZ-17	7.08	20.48		13.40	--		
	6/30/2012	LW-3	NA	19.83	(c)	NA	15.50	--	
	7/27/2012	PZ-17	7.20	20.48		13.28	--		
	7/27/2012	LW-3	NA	19.83	(c)	NA	15.50	--	
	8/12/2012	PZ-17	7.21	20.48		13.27	--		
	8/12/2012	LW-3	5.22	19.83	(c)	14.61	15.50	No	
	9/30/2012	PZ-17	7.57	20.48		12.91	--		
	9/30/2012	LW-3	NA	19.83	(c)	NA	15.50	--	
	10/24/2012	PZ-17	7.62	20.48		12.86	--		
	10/24/2012	LW-3	4.06	19.83	(c)	15.77	15.50	Yes	
	11/24/2012	PZ-17	7.21	20.48		13.27	--		
	11/24/2012	LW-3	5.88	19.83	(c)	13.95	15.50	No	
	12/30/2012	PZ-17	6.64	20.48		13.84	--		
	12/30/2012	LW-3	5.51	19.83	(c)	14.32	15.50	No	
	1/25/2013	PZ-17	6.79	20.48		13.69	--		
	1/25/2013	LW-3	5.61	19.83	(c)	14.22	15.50	No	
	2/9/2013	PZ-17	7.02	20.48		13.46	--		
	2/9/2013	LW-3	5.80	19.83	(c)	14.03	15.50	No	
	3/31/2013	PZ-17	7.07	20.48		13.41	--		
	3/31/2013	LW-3	5.81	19.83	(c)	14.02	15.50	No	
	4/29/2013	PZ-17	7.13	20.48		13.35	--		
	4/29/2013	LW-3	6.01	19.83		13.82	15.50	No	
	5/31/2013	PZ-17	NA	20.48		NA	--		
	5/31/2013	LW-3	6.24	19.83		13.59	15.50	--	
	6/9/2013	PZ-17	7.23	20.48		13.25	--		
	6/9/2013	LW-3	6.18	19.83		13.65	15.50	No	
	7/21/2013	PZ-17	7.31	20.48		13.17	--		
	7/21/2013	LW-3	6.26	19.83		13.57	15.50	No	
	8/29/2013	PZ-17	7.52	20.48		12.96	--		
	8/29/2013	LW-3	6.35	19.83		13.48	15.50	No	

Table A-2
Cumulative Groundwater Elevations
Cascade Pole Site
Port of Olympia, Washington

Well Pair	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
	9/21/2013	PZ-17	7.52	20.48	12.96	--		
	9/21/2013	LW-3	6.44	19.83	13.39	15.50	No	
	10/6/2013	PZ-17	7.17	20.48	13.31	--		
	10/6/2013	LW-3	6.37	19.83	13.46	15.50	No	
	11/10/2013	PZ-17	7.49	20.48	12.99	--		
	11/10/2013	LW-3	6.30	19.83	13.53	15.50	No	
	12/15/2013	PZ-17	7.71	20.48	12.77	--		Covered with log bunks
	12/15/2013	LW-3	6.54	19.83	13.29	15.50	No	
	1/5/2014	PZ-17	7.76	20.48	12.72	--		
	1/5/2014	LW-3	6.54	19.83	13.29	15.50	No	
	2/1/2014	PZ-17	7.62	20.48	12.86	--		
	2/1/2014	LW-3	6.42	19.83	13.41	15.50	No	
	3/1/2014	PZ-17	7.20	20.48	13.28	--		
	3/1/2014	LW-3	6.18	19.83	13.65	15.50	No	
	4/6/2014	PZ-17	6.88	20.48	13.60	--		
	4/6/2014	LW-3	5.95	19.83	13.88	15.50	No	
	5/17/2014	PZ-17	6.55	20.48	13.93	--		
	5/17/2014	LW-3	4.98	19.83	14.85	15.50	No	
	6/22/2014	PZ-17	NA	20.48	NA	--		
	6/22/2014	LW-3	6.12	19.83	13.71	15.50	--	
	7/5/2014	PZ-17	7.96	20.48	12.52	--		
	7/5/2014	LW-3	6.14	19.83	13.69	15.50	No	
	8/12/2014	PZ-17	9.11	20.48	11.37	--		
	8/12/2014	LW-3	6.53	19.83	13.30	15.50	No	
	9/23/2014	PZ-17	9.38	20.48	11.10	--		
	9/23/2014	LW-3	6.71	19.83	13.12	15.50	No	
	10/11/2014	PZ-17	8.77	20.48	11.71	--		
	10/11/2014	LW-3	7.03	19.83	12.80	15.50	No	
	11/9/2014	PZ-17	7.87	20.48	12.61	--		
	11/10/2014	LW-3	6.73	19.83	13.10	15.50	No	
	12/7/2014	PZ-17	7.77	20.48	12.71	--		
	12/7/2014	LW-3	6.46	19.83	13.37	15.50	No	
	1/3/2015	PZ-17	7.96	20.48	12.52	--		
	1/3/2015	LW-3	6.36	19.83	13.47	15.50	No	
	2/14/2015	PZ-17	8.04	20.48	12.44	--		
	2/14/2015	LW-3	6.07	19.83	13.76	15.50	No	
	3/9/2015	PZ-17	8.51	20.48	11.97	--		
	3/9/2015	LW-3	6.07	19.83	13.76	15.50	No	
	4/5/2015	PZ-17	NA	20.48	NA	--		
	4/5/2015	LW-3	6.02	19.83	13.81	15.50	No	
	5/16/2015	PZ-17	9.04	20.48	11.44	--		
	5/16/2015	LW-3	6.35	19.83	13.48	15.50	No	

Table A-2
Cumulative Groundwater Elevations
Cascade Pole Site
Port of Olympia, Washington

Well Pair	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
	6/7/2015	PZ-17	9.05	20.48	11.43	--		
	6/7/2015	LW-3	6.52	19.83	13.31	15.50	No	
	7/7/2015	PZ-17	9.08	20.48	11.40	--		
	7/7/2015	LW-3	6.73	19.83	13.10	15.50	No	
	8/1/2015	PZ-17	9.17	20.48	11.31	--		
	8/1/2015	LW-3	6.61	19.83	13.22	15.50	No	
	9/24/2015	PZ-17	8.60	20.48	11.88	--		
	9/24/2015	LW-3	7.10	19.83	12.73	15.50	No	
	10/16/2015	PZ-17	8.14	20.48	12.34	--		
	10/16/2015	LW-3	7.32	19.83	12.51	15.50	No	
	11/3/2015	PZ-17	7.92	20.48	12.56	--		
	11/3/2015	LW-3	7.29	19.83	12.54	15.50	No	
	12/4/2015	PZ-17	7.44	20.48	13.04	--		
	12/4/2015	LW-3	6.81	19.83	13.02	15.50	No	
	1/15/2016	PZ-17	6.86	20.48	13.62	--		
	1/15/2016	LW-3	5.97	19.83	13.86	15.50	No	
	2/16/2016	PZ-17	6.32	20.48	14.16	--		
	2/16/2016	LW-3	5.40	19.83	14.43	15.50	No	
	3/19/2016	PZ-17	6.19	20.48	14.29	--		
	3/19/2016	LW-3	4.74	19.83	15.09	15.50	No	
	4/3/2016	PZ-17	6.32	20.48	14.16	--		
	4/3/2016	LW-3	4.58	19.83	15.25	15.50	No	
	5/14/2016	PZ-17	6.84	20.48	13.64	--		
	5/14/2016	LW-3	5.27	19.83	14.56	15.50	No	
	6/12/2016	PZ-17	7.04	20.48	13.44	--		
	6/12/2016	LW-3	5.47	19.83	14.36	15.50	No	
	7/5/2016	PZ-17	7.21	20.48	13.27	--		
	7/5/2016	LW-3	5.61	19.83	14.22	15.50	No	
	8/6/2016	PZ-17	7.39	20.48	13.09	--		
	8/6/2016	LW-3	5.70	19.83	14.13	15.50	No	
	9/4/2016	PZ-17	7.37	20.48	13.11	--		
	9/4/2016	LW-3	5.88	19.83	13.95	15.50	No	
	10/1/2016	PZ-17	7.34	20.48	13.14	--		
	10/1/2016	LW-3	5.97	19.83	13.86	15.50	No	
	11/6/2016	PZ-17	6.87	20.48	13.61	--		
	11/6/2016	LW-3	5.36	19.83	14.47	15.50	No	
	12/17/2016	PZ-17	6.65	20.48	13.83	--		
	12/17/2016	LW-3	4.81	19.83	15.02	15.50	No	
	1/21/2017	PZ-17	6.46	20.48	14.02	--		
	1/21/2017	LW-3	4.78	19.83	15.05	15.50	No	
	2/2/2017	PZ-17	6.43	20.48	14.05	--		
	2/2/2017	LW-3	4.73	19.83	15.10	15.50	No	
	2/28/2017	PZ-17	6.18	20.48	14.30	--		

Table A-2
Cumulative Groundwater Elevations
Cascade Pole Site
Port of Olympia, Washington

Well Pair	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
	2/28/2017	LW-3	4.60	19.83	15.23	15.50	No	
	3/30/2017	PZ-17	5.67	20.48	14.81	--		
	3/30/2017	LW-3	4.32	19.83	15.51	15.50	Yes	
	4/30/2017	PZ-17	5.62	20.48	14.86	--		
	4/30/2017	LW-3	3.73	19.83	16.10	15.50	Yes	
	5/21/2017	PZ-17	5.73	20.48	14.75	--		
	5/21/2017	LW-3	3.78	19.83	16.05	15.50	Yes	
	6/6/2017	PZ-17	5.80	20.48	14.68	--		
	6/6/2017	LW-3	3.85	19.83	15.98	15.50	Yes	
	7/8/2017	PZ-17	6.09	20.48	14.39	--		
	7/8/2017	LW-3	4.77	19.83	15.06	15.50	No	
	8/4/2017	PZ-17	6.42	20.48	14.06	--		
	8/4/2017	LW-3	4.92	19.83	14.91	15.50	No	
	9/9/2017	PZ-17	6.81	20.48	13.67	--		
	9/9/2017	LW-3	5.47	19.83	14.36	15.50	No	
	10/11/2017	PZ-17	7.04	20.48	13.44	--		
	10/11/2017	LW-3	5.55	19.83	14.28	15.50	No	
	11/12/2017	PZ-17	6.34	20.48	14.14	--		
	11/12/2017	LW-3	5.31	19.83	14.52	15.50	No	
	12/16/2017	PZ-17	6.04	20.48	14.44	--		
	12/16/2017	LW-3	5.07	19.83	14.76	15.50	No	
	1/1/2018	PZ-17	5.98	20.48	14.50	--		
	1/1/2018	LW-3	4.71	19.83	15.12	15.50	No	
	2/10/2018	PZ-17	5.60	20.48	14.88	--		
	2/10/2018	LW-3	4.50	19.83	15.33	15.50	No	
	3/8/2018	PZ-17	8.19	20.48	12.29	--		
	3/8/2018	LW-3	3.99	19.83	15.84	15.50	Yes	
3	11/8/2006	PZ-18	6.31	21.20	14.89	--		
	11/8/2006	LW-4R	7.73	22.02	14.29	15.50	No	
	12/31/2006	PZ-18	7.95	21.20	13.25	--		
	12/31/2006	LW-4R	6.77	22.02	15.25	15.50	No	
	3/2/2007	PZ-18	7.28	21.20	13.92	--		
	3/2/2007	LW-4R	4.91	22.02	17.11	15.50	Yes	
	3/31/2007	PZ-18	9.47	21.20	11.73	--		
	3/31/2007	LW-4R	6.07	22.02	15.95	15.50	Yes	
	4/23/2007	PZ-18	4.31	21.20	16.89	--		
	4/23/2007	LW-4R	5.32	22.02	16.70	15.50	Yes	
	5/28/2007	PZ-18	9.82	21.20	11.38	--		
	5/28/2007	LW-4R	8.12	22.02	13.90	15.50	No	
	6/30/2007	PZ-18	8.85	21.20	12.35	--		
	6/30/2007	LW-4R	6.07	22.02	15.95	15.50	Yes	
	8/1/2007	PZ-18	5.16	21.20	16.04	--		

Table A-2
Cumulative Groundwater Elevations
Cascade Pole Site
Port of Olympia, Washington

Well Pair	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
	8/1/2007	LW-4R	5.21	22.02	16.81	15.50	Yes	
	9/29/2007	PZ-18	4.84	21.20	16.36	--		
	9/29/2007	LW-4R	5.66	22.02	16.36	15.50	Yes	
	11/22/2007	PZ-18	5.87	21.20	15.33	--		
	11/22/2007	LW-4R	6.25	22.02	15.77	15.50	Yes	
	1/26/2008	PZ-18	6.42	21.20	14.78	--		
	1/26/2008	LW-4R	4.74	22.02	17.28	15.50	Yes	
	2/28/2008	PZ-18	6.86	21.20	14.34	--		
	2/28/2008	LW-4R	4.92	22.02	17.10	15.50	Yes	
	3/19/2008	PZ-18	7.58	21.20	13.62	--		
	3/19/2008	LW-4R	7.70	22.02	14.32	15.50	No	
	4/28/2008	PZ-18	6.72	21.20	14.48	--		
	4/28/2008	LW-4R	4.85	22.02	17.17	15.50	Yes	
	5/31/2008	PZ-18	7.46	21.20	13.74	--		
	5/31/2008	LW-4R	5.26	22.02	16.76	15.50	Yes	
	6/30/2008	PZ-18	7.44	21.20	16.36	--		
	6/30/2008	LW-4R	5.24	22.02	16.36	15.50	Yes	
	7/12/2008	PZ-18	6.52	21.20	14.68	--		
	7/12/2008	LW-4R	5.33	22.02	16.69	15.50	Yes	
	8/28/2008	PZ-18	6.55	21.20	14.65	--		
	8/28/2008	LW-4R	5.67	22.02	16.35	15.50	Yes	
	9/20/2008	PZ-18	6.53	21.20	14.67	--		
	9/20/2008	LW-4R	5.63	22.02	16.39	15.50	Yes	
	10/12/2008	PZ-18	7.83	21.20	13.37	--		
	10/12/2008	LW-4R	6.11	22.02	15.91	15.50	Yes	
	11/30/2008	PZ-18	6.52	21.20	14.68	--		
	11/30/2008	LW-4R	6.18	22.02	15.84	15.50	Yes	
	12/31/2008	PZ-18	7.01	21.20	14.19	--		
	12/31/2008	LW-4R	6.44	22.02	15.58	15.50	Yes	
	1/31/2009	PZ-18	6.46	21.20	14.74	--		
	1/31/2009	LW-4R	6.17	22.02	15.85	15.50	Yes	
	2/23/2009	PZ-18	6.26	21.20	14.94	--		
	2/23/2009	LW-4R	6.35	22.02	15.67	15.50	Yes	
	3/29/2009	PZ-18	6.29	21.20	14.91	--		
	3/29/2009	LW-4R	6.42	22.02	15.60	15.50	Yes	
	4/18/2009	PZ-18	6.28	21.20	14.92	--		
	4/18/2009	LW-4R	6.35	22.02	15.67	15.50	Yes	
	5/16/2009	PZ-18	6.21	21.20	14.99	--		
	5/16/2009	LW-4R	6.18	22.02	15.84	15.50	Yes	
	6/21/2009	PZ-18	6.66	21.20	14.54	--		
	6/21/2009	LW-4R	6.23	22.02	15.79	15.50	Yes	
	7/20/2009	PZ-18	9.93	21.20	11.27	--		
	7/20/2009	LW-4R	5.81	22.02	16.21	15.50	Yes	

Table A-2
Cumulative Groundwater Elevations
Cascade Pole Site
Port of Olympia, Washington

Well Pair	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
	8/10/2009	PZ-18	6.55	21.20	14.65	--		
	8/10/2009	LW-4R	7.47	22.02	14.55	15.50	No	
	9/7/2009	PZ-18	8.77	21.20	12.43	--		
	9/7/2009	LW-4R	6.10	22.02	15.92	15.50	Yes	
	10/10/2009	PZ-18	6.88	21.20	14.32	--		
	10/10/2009	LW-4R	6.09	22.02	15.93	15.50	Yes	
	11/28/2009	PZ-18	9.25	21.20	11.95	--		
	11/28/2009	LW-4R	7.31	22.02	14.71	15.50	No	
	12/31/2009	PZ-18	7.61	21.20	13.59	--		
	12/31/2009	LW-4R	NM	22.02	--	15.50	--	
	1/14/2010	PZ-18	9.21	21.20	11.99	--		
	1/14/2010	LW-4R	7.46	22.02	14.56	15.50	No	
	2/21/2010	PZ-18	6.50	21.20	14.70	--		
	2/21/2010	LW-4R	6.66	22.02	15.36	15.50	No	
	3/17/2010	PZ-18	6.40	21.20	14.80	--		
	3/17/2010	LW-4R	7.07	22.02	14.95	15.50	No	
	4/25/2010	PZ-18	9.57	21.20	11.63	--		
	4/25/2010	LW-4R	NA	22.02	NA	15.50	--	
	5/16/2010	PZ-18	NA	21.20	NA	--		
	5/16/2010	LW-4R	6.30	22.02	15.72	15.50	--	
	6/26/2010	PZ-18	9.35	21.20	11.85	--		
	6/26/2010	LW-4R	6.68	22.02	15.34	15.50	No	
	7/23/2010	PZ-18	9.62	21.20	11.58	--		
	7/23/2010	LW-4R	6.73	22.02	15.29	15.50	No	
	8/30/2010	PZ-18	9.43	21.20	11.77	--		
	8/30/2010	LW-4R	6.57	22.02	15.45	15.50	No	
	9/30/2010	PZ-18	8.62	21.20	12.58	--		
	9/30/2010	LW-4R	6.24	22.02	15.78	15.50	Yes	
	10/18/2010	PZ-18	7.37	21.20	13.83	--		
	10/18/2010	LW-4R	6.36	22.02	15.66	15.50	Yes	
	11/29/2010	PZ-18	9.77	21.20	11.43	--		
	11/29/2010	LW-4R	7.06	22.02	14.96	15.50	No	
	12/25/2010	PZ-18	NA	21.20	NA	--		
	12/25/2010	LW-4R	7.11	22.02	14.91	15.50	--	
	1/29/2011	PZ-18	10.14	21.20	11.06	--		
	1/29/2011	LW-4R	NA	22.02	NA	15.50	--	
	2/20/2011	PZ-18	9.44	21.20	11.76	--		
	2/20/2011	LW-4R	NA	22.02	NA	15.50	--	
	3/24/2011	PZ-18	10.24	21.20	10.96	--		
	3/24/2011	LW-4R	6.45	22.02	15.57	15.50	Yes	
	4/23/2011	PZ-18	9.44	21.20	11.76	--		
	4/23/2011	LW-4R	6.62	22.02	15.40	15.50	No	

Table A-2
Cumulative Groundwater Elevations
Cascade Pole Site
Port of Olympia, Washington

Well Pair	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
	5/30/2011	PZ-18	6.86	21.20	14.34	--		
	5/30/2011	LW-4R	6.37	22.02	15.65	15.50	Yes	
	6/26/2011	PZ-18	6.01	21.20	15.19	--		
	6/26/2011	LW-4R	NA	22.02	NA	15.50	--	
								Covered in bark pile.
	7/30/2011	PZ-18	6.43	21.20	14.77	--		
	7/30/2011	LW-4R	6.91	22.02	15.11	15.50	No	Well covered.
								Pressure on opening. Left open for +5 minutes before s
	8/8/2011	PZ-18	6.11	21.20	15.09	--		
	8/8/2011	LW-4R	6.56	22.02	15.46	15.50	No	Pressure on opening. Left open for +5 minutes before s
	9/24/2011	PZ-18	NA	21.20	NA	--		
	9/24/2011	LW-4R	6.75	22.02	15.27	15.50	--	
	10/29/2011	PZ-18	NA	21.20	NA	--		
	10/29/2011	LW-4R	NA	22.02	NA	15.50	--	
	11/26/2011	PZ-18	NA	21.20	NA	--		
	11/26/2011	LW-4R	NA	22.02	NA	15.50	--	Lid stuck
								Bark pile
	12/26/2011	PZ-18	7.21	21.20	13.99	--		
	12/26/2011	LW-4R	NA	22.02	NA	15.50	--	
								Bark pile
	1/28/2012	PZ-18	5.91	21.20	15.29	--		
	1/28/2012	LW-4R	8.35	22.02	13.67	15.50	No	
	2/26/2012	PZ-18	NA	21.20	NA	--		
	2/26/2012	LW-4R	NA	22.02	NA	15.50	--	
	3/7/2012	PZ-18	6.34	21.20	14.86	--		
	3/7/2012	LW-4R	8.40	22.02	13.62	15.50	No	
								logs over well
	4/21/2012	PZ-18	NA	21.20	NA	--		
	4/21/2012	LW-4R	8.16	22.02	13.86	15.50	--	
								logs over well
	5/19/2012	PZ-18	NA	21.20	NA	--		
	5/19/2012	LW-4R	8.02	22.02	14.00	15.50	--	logs over well
	6/30/2012	PZ-18	9.62	21.20	11.58	--		
	6/30/2012	LW-4R	NA	22.02	NA	15.50	--	
	7/27/2012	PZ-18	9.62	21.20	11.58	--		
	7/27/2012	LW-4R	6.95	22.02	15.07	15.50	No	log deck
								bark pile
	8/12/2012	PZ-18	9.78	21.20	11.42	--		
	8/12/2012	LW-4R	NA	22.02	NA	15.50	--	
								bark muck
	9/30/2012	PZ-18	NA	21.20	NA	--		
	9/30/2012	LW-4R	NA	22.02	NA	15.50	--	
	10/24/2012	PZ-18	6.90	21.20	14.30	--		
	10/24/2012	LW-4R	6.99	22.02	15.03	15.50	No	
								bark pile
	11/24/2012	PZ-18	NA	21.20	NA	--		
	11/24/2012	LW-4R	NA	22.02	NA	15.50	--	
	12/30/2012	PZ-18	8.03	21.20	13.17	--		
	12/30/2012	LW-4R	NA	22.02	NA	15.50	--	
	1/25/2013	PZ-18	7.25	21.20	13.95	--		
	1/25/2013	LW-4R	7.82	22.02	14.20	15.50	No	

Table A-2
Cumulative Groundwater Elevations
Cascade Pole Site
Port of Olympia, Washington

Well Pair	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
	2/9/2013	PZ-18	8.34	21.20	12.86	--		
	2/9/2013	LW-4R	8.26	22.02	13.76	15.50	No	obstructed
	3/31/2013	PZ-18	NA	21.20	NA	--		
	3/31/2013	LW-4R	8.26	22.02	13.76	15.50	--	
	4/29/2013	PZ-18	NA	21.20	NA	--		
	4/29/2013	LW-4R	8.37	22.02	13.65	15.50	--	
	5/31/2013	PZ-18	NA	21.20	NA	--		
	5/31/2013	LW-4R	8.53	22.02	13.49	15.50	--	Covered with log bunks
	6/9/2013	PZ-18	10.11	21.20	11.09	--		
	6/9/2013	LW-4R	NA	22.02	NA	15.50	--	
	7/21/2013	PZ-18	NA	21.20	NA	--		
	7/21/2013	LW-4R	NA	22.02	NA	15.50	--	
	8/29/2013	PZ-18	8.91	21.20	12.29	--		
	8/29/2013	LW-4R	6.57	22.02	15.45	15.50	No	
	9/21/2013	PZ-18	9.30	21.20	11.90	--		
	9/21/2013	LW-4R	6.97	22.02	15.05	15.50	No	
	10/6/2013	PZ-18	8.04	21.20	13.16	--		
	10/6/2013	LW-4R	NA	22.02	NA	15.50	--	
	11/10/2013	PZ-18	8.40	21.20	12.80	--		
	11/10/2013	LW-4R	7.28	22.02	14.74	15.50	No	
	12/15/2013	PZ-18	8.26	21.20	12.94	--		
	12/15/2013	LW-4R	7.72	22.02	14.30	15.50	No	
	1/5/2014	PZ-18	10.28	21.20	10.92	--		
	1/5/2014	LW-4R	7.87	22.02	14.15	15.50	No	
	2/1/2014	PZ-18	NA	21.20	NA	--		
	2/1/2014	LW-4R	7.81	22.02	14.21	15.50	No	
	3/1/2014	PZ-18	10.11	21.20	11.09	--		
	3/1/2014	LW-4R	7.39	22.02	14.63	15.50	No	
	4/6/2014	PZ-18	10.11	21.20	11.09	--		
	4/6/2014	LW-4R	7.39	22.02	14.63	15.50	No	
	5/17/2014	PZ-18	7.53	21.20	NA	--		
	5/17/2014	LW-4R	6.61	22.02	15.41	15.50	--	
	6/22/2014	PZ-18	NA	21.20	NA	--		
	6/22/2014	LW-4R	7.35	22.02	14.67	15.50	--	
	7/5/2014	PZ-18	10.29	21.20	10.91	--		
	7/5/2014	LW-4R	6.92	22.02	15.10	15.50	No	
	8/12/2014	PZ-18	6.25	21.20	14.95	--		
	8/12/2014	LW-4R	6.56	22.02	15.46	15.50	No	
	9/23/2014	PZ-18	7.23	21.20	13.97	--		
	9/23/2014	LW-4R	6.65	22.02	15.37	15.50	No	
	10/11/2014	PZ-18	9.74	21.20	11.46	--		
	10/11/2014	LW-4R	6.68	22.02	15.34	15.50	No	

Table A-2
Cumulative Groundwater Elevations
Cascade Pole Site
Port of Olympia, Washington

Well Pair	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
	11/9/2014	PZ-18	7.86	21.20	13.34	--		
	11/9/2014	LW-4R	6.9	22.02	15.12	15.50	No	
	12/7/2014	PZ-18	7.84	21.20	13.36	--		
	12/7/2014	LW-4R	NA	22.02	NA	15.50	--	
	1/3/2015	PZ-18	7.75	21.20	13.45	--		
	1/3/2015	LW-4R	7.16	22.02	14.86	15.50	No	
	2/14/2015	PZ-18	7.81	21.20	13.39	--		
	2/14/2015	LW-4R	7.4	22.02	14.62	15.50	No	
	3/9/2015	PZ-18	7.73	21.20	13.47	--		
	3/9/2015	LW-4R	6.89	22.02	15.13	15.50	No	
	4/5/2015	PZ-18	8.61	21.20	12.59	--		
	4/5/2015	LW-4R	6.85	22.02	15.17	15.50	No	
	5/16/2015	PZ-18	6.59	21.20	14.61	--		
	5/16/2015	LW-4R	6.74	22.02	15.28	15.50	No	
	6/7/2015	PZ-18	6.25	21.20	14.95	--		
	6/7/2015	LW-4R	6.34	22.02	15.68	15.50	Yes	
	7/7/2015	PZ-18	6.24	21.20	14.96	--		
	7/7/2015	LW-4R	6.47	22.02	15.55	15.50	Yes	
	8/1/2015	PZ-18	6.28	21.20	14.92	--		
	8/1/2015	LW-4R	6.31	22.02	15.71	15.50	Yes	
	9/24/2015	PZ-18	6.55	21.20	14.65	--		
	9/24/2015	LW-4R	6.70	22.02	15.32	15.50	No	
	10/16/2015	PZ-18	6.27	21.20	14.93	--		
	10/16/2015	LW-4R	6.94	22.02	15.08	15.50	No	
	11/3/2015	PZ-18	7.08	21.20	14.12	--		
	11/3/2015	LW-4R	7.81	22.02	14.21	15.50	No	
	12/4/2015	PZ-18	7.38	21.20	13.82	--		
	12/4/2015	LW-4R	7.61	22.02	14.41	15.50	No	
	1/15/2016	PZ-18	7.57	21.20	13.63	--		
	1/15/2016	LW-4R	7.54	22.02	14.48	15.50	No	
	2/16/2016	PZ-18	8.31	21.20	12.89	--		
	2/16/2016	LW-4R	7.35	22.02	14.67	15.50	No	
	3/19/2016	PZ-18	6.47	21.20	14.73	--		
	3/19/2016	LW-4R	7.18	22.02	14.84	15.50	No	
	4/3/2016	PZ-18	6.54	21.20	14.66	--		
	4/3/2016	LW-4R	6.40	22.02	15.62	15.50	Yes	
	5/14/2016	PZ-18	6.99	21.20	14.21	--		
	5/14/2016	LW-4R	6.74	22.02	15.28	15.50	No	
	6/12/2016	PZ-18	6.26	21.20	14.94	--		
	6/12/2016	LW-4R	7.33	22.02	14.69	15.50	No	
	7/5/2016	PZ-18	6.16	21.20	15.04	--		
	7/5/2016	LW-4R	6.11	22.02	15.91	15.50	Yes	
	8/6/2016	PZ-18	6.18	21.20	15.02	--		

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Cumulative Groundwater Elevations
Cascade Pole Site
Port of Olympia, Washington

Well Pair	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
	8/6/2016	LW-4R	6.02	22.02	16.00	15.50	Yes	
	9/4/2016	PZ-18	6.28	21.20	14.92	--		
	9/4/2016	LW-4R	6.23	22.02	15.79	15.50	Yes	
	10/1/2016	PZ-18	6.41	21.20	14.79	--		
	10/1/2016	LW-4R	6.17	22.02	15.85	15.50	Yes	
	11/6/2016	PZ-18	6.48	21.20	14.72	--		
	11/6/2016	LW-4R	7.12	22.02	14.90	15.50	No	
	12/17/2016	PZ-18	6.70	21.20	14.50	--		
	12/17/2016	LW-4R	7.03	22.02	14.99	15.50	No	
	1/21/2017	PZ-18	9.96	21.20	11.24	--		
	1/21/2017	LW-4R	6.67	22.02	15.35	15.50	No	
	2/2/2017	PZ-18	6.53	21.20	14.67	--		
	2/2/2017	LW-4R	6.41	22.02	15.61	15.50	Yes	
	2/28/2017	PZ-18	6.83	21.20	14.37	--		
	2/28/2017	LW-4R	7.55	22.02	14.47	15.50	No	
	3/30/2017	PZ-18	6.18	21.20	15.02	--		
	3/30/2017	LW-4R	6.22	22.02	15.80	15.50	Yes	
	4/30/2017	PZ-18	6.33	21.20	14.87	--		
	4/30/2017	LW-4R	6.14	22.02	15.88	15.50	Yes	
	5/21/2017	PZ-18	6.26	21.20	14.94	--		
	5/21/2017	LW-4R	5.68	22.02	16.34	15.50	Yes	
	6/6/2017	PZ-18	5.84	21.20	15.36	--		
	6/6/2017	LW-4R	5.71	22.02	16.31	15.50	Yes	
	7/8/2017	PZ-18	6.68	21.20	14.52	--		
	7/8/2017	LW-4R	5.24	22.02	16.78	15.50	Yes	
	8/4/2017	PZ-18	6.09	21.20	15.11	--		
	8/4/2017	LW-4R	5.27	22.02	16.75	15.50	Yes	
	9/9/2017	PZ-18	6.41	21.20	14.79	--		
	9/9/2017	LW-4R	5.77	22.02	16.25	15.50	Yes	
	10/11/2017	PZ-18	6.89	21.20	14.31	--		
	10/11/2017	LW-4R	6.06	22.02	15.96	15.50	Yes	
	11/12/2017	PZ-18	6.66	21.20	14.54	--		
	11/12/2017	LW-4R	NA	22.02	NA	15.50	--	
	12/16/2017	PZ-18	7.37	21.20	13.83	--		
	12/16/2017	LW-4R	6.36	22.02	15.66	15.50	Yes	
	1/1/2018	PZ-18	NA	21.20	NA	--		
	1/1/2018	LW-4R	6.38	22.02	15.64	15.50	Yes	
	2/10/2018	PZ-18	NA	21.20	NA	--		
	2/10/2018	LW-4R	6.86	22.02	15.16	15.50	No	
	3/8/2018	PZ-18	5.75	21.20	15.45	--		
	3/8/2018	LW-4R	6.46	22.02	15.56	15.50	Yes	
4	11/8/2006	PZ-19	12.64	23.67	11.03	--		

Table A-2
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Cascade Pole Site
Port of Olympia, Washington

Well Pair	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
	11/8/2006	MW-02S	12.71	30.47	17.76	15.50	Yes	
	12/31/2006	PZ-19	11.22	23.67	12.45	--		
	12/31/2006	MW-02S	11.96	30.47	18.51	15.50	Yes	
	3/2/2007	PZ-19	13.81	23.67	9.86	--		
	3/2/2007	MW-02S	13.04	30.47	17.43	15.50	Yes	
	3/31/2007	PZ-19	14.79	23.67	8.88	--		
	3/31/2007	MW-02S	12.93	30.47	17.54	15.50	Yes	
	4/23/2007	PZ-19	12.72	23.67	10.95	--		
	4/23/2007	MW-02S	14.42	30.47	16.05	15.50	Yes	
	5/28/2007	PZ-19	16.43	23.67	7.24	--		
	5/28/2007	MW-02S	15.51	30.47	14.96	15.50	No	
	6/30/2007	PZ-19	16.80	23.67	6.87	--		
	6/30/2007	MW-02S	15.92	30.47	14.55	15.50	No	
	8/1/2007	PZ-19	14.85	23.67	8.82	--		
	8/1/2007	MW-02S	16.02	30.47	14.45	15.50	No	
	9/29/2007	PZ-19	14.17	23.67	9.50	--		
	9/29/2007	MW-02S	16.89	30.47	13.58	15.50	No	
	11/22/2007	PZ-19	13.95	23.67	9.72	--		
	11/22/2007	MW-02S	15.13	30.47	15.34	15.50	No	
	1/26/2008	PZ-19	12.86	23.67	10.81	--		
	1/26/2008	MW-02S	13.68	30.47	16.79	15.50	Yes	
	2/28/2008	PZ-19	14.95	23.67	8.72	--		
	2/28/2008	MW-02S	13.56	30.47	16.91	15.50	Yes	
	3/19/2008	PZ-19	13.33	23.67	10.34	--		
	3/19/2008	MW-02S	13.92	30.47	16.55	15.50	Yes	
	4/28/2008	PZ-19	14.03	23.67	9.64	--		
	4/28/2008	MW-02S	14.54	30.47	15.93	15.50	Yes	
	5/31/2008	PZ-19	14.13	23.67	9.54	--		
	5/31/2008	MW-02S	15.12	30.47	15.35	15.50	No	
	6/30/2008	PZ-19	13.22	23.67	9.50	--		
	6/30/2008	MW-02S	15.60	30.47	13.58	15.50	No	
	7/12/2008	PZ-19	16.34	23.67	7.33	--		
	7/12/2008	MW-02S	15.73	30.47	14.74	15.50	No	
	8/28/2008	PZ-19	15.77	23.67	7.90	--		
	8/28/2008	MW-02S	16.43	30.47	14.04	15.50	No	
	9/20/2008	PZ-19	13.78	23.67	9.89	--		
	9/20/2008	MW-02S	NM	30.47	--	15.50	--	
	10/12/2008	PZ-19	14.42	23.67	9.25	--		
	10/12/2008	MW-02S	NM	30.47	--	15.50	--	
	11/30/2008	PZ-19	13.42	23.67	10.25	--		
	11/30/2008	MW-02S	NM	30.47	--	15.50	--	
	12/31/2008	PZ-19	12.70	23.67	10.97	--		
	12/31/2008	MW-02S	NM	30.47	--	15.50	--	

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Cascade Pole Site
Port of Olympia, Washington

Well Pair	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
	1/31/2009	PZ-19	15.00	23.67	8.67	--		
	1/31/2009	MW-02S	16.81	32.46	15.65	15.50	Yes	
	2/23/2009	PZ-19	13.63	23.67	10.04	--		
	2/23/2009	MW-02S	17.22	32.46	15.24	15.50	No	
	3/29/2009	PZ-19	16.13	23.67	7.54	--		
	3/29/2009	MW-02S	17.20	32.46	15.26	15.50	No	
	4/18/2009	PZ-19	14.78	23.67	8.89	--		
	4/18/2009	MW-02S	17.13	32.46	15.33	15.50	No	
	5/16/2009	PZ-19	14.16	23.67	9.51	--		
	5/16/2009	MW-02S	16.79	32.46	15.67	15.50	Yes	
	6/21/2009	PZ-19	14.53	23.67	9.14	--		
	6/21/2009	MW-02S	17.65	32.46	14.81	15.50	No	
	7/20/2009	PZ-19	12.42	23.67	11.25	--		
	7/20/2009	MW-02S	18.00	32.46	14.46	15.50	No	
	8/10/2009	PZ-19	13.47	23.67	10.20	--		
	8/10/2009	MW-02S	18.37	32.46	14.09	15.50	No	
	9/7/2009	PZ-19	13.74	23.67	9.93	--		
	9/7/2009	MW-02S	18.85	32.46	13.61	15.50	No	
	10/10/2009	PZ-19	13.67	23.67	10.00	--		
	10/10/2009	MW-02S	19.26	32.46	13.20	15.50	No	
	11/28/2009	PZ-19	14.26	23.67	9.41	--		
	11/28/2009	MW-02S	18.17	32.46	14.29	15.50	No	
	12/31/2009	PZ-19	11.39	23.67	12.28	--		
	12/31/2009	MW-02S	18.02	32.46	14.44	15.50	No	
	1/14/2010	PZ-19	11.61	23.67	12.06	--		
	1/14/2010	MW-02S	17.27	32.46	15.19	15.50	No	
	2/21/2010	PZ-19	11.51	23.67	12.16	--		
	2/21/2010	MW-02S	16.79	32.46	15.67	15.50	Yes	
	3/17/2010	PZ-19	14.65	23.67	9.02	--		
	3/17/2010	MW-02S	16.39	32.46	16.07	15.50	Yes	
	4/25/2010	PZ-19	13.67	23.67	10.00	--		
	4/25/2010	MW-02S	17.23	32.46	15.23	15.50	No	
	5/16/2010	PZ-19	16.69	23.67	6.98	--		
	5/16/2010	MW-02S	17.59	32.46	14.87	15.50	No	
	6/26/2010	PZ-19	13.67	23.67	10.00	--		
	6/26/2010	MW-02S	18.16	32.46	14.30	15.50	No	
	7/23/2010	PZ-19	16.86	23.67	6.81	--		
	7/23/2010	MW-02S	18.51	32.46	13.95	15.50	No	
	8/30/2010	PZ-19	14.23	23.67	9.44	--		
	8/30/2010	MW-02S	18.04	32.46	14.42	15.50	No	
	9/30/2010	PZ-19	13.67	23.67	10.00	--		
	9/30/2010	MW-02S	17.27	32.46	15.19	15.50	No	

Table A-2
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Cascade Pole Site
Port of Olympia, Washington

Well Pair	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
	10/18/2010	PZ-19	15.84	23.67		7.83	--		
	10/18/2010	MW-02S	17.72	32.46		14.74	15.50	No	
	11/29/2010	PZ-19	12.89	23.67		10.78	--		
	11/29/2010	MW-02S	17.13	32.46		15.33	15.50	No	
	12/25/2010	PZ-19	10.81	23.67		12.86	--		
	12/25/2010	MW-02S	15.90	32.46		16.56	15.50	Yes	
	1/29/2011	PZ-19	11.97	23.67		11.70	--		
	1/29/2011	MW-02S	16.18	32.46		16.28	15.50	Yes	
	2/20/2011	PZ-19	15.01	23.67		8.66	--		
	2/20/2011	MW-02S	16.99	32.46		15.47	15.50	No	
	3/24/2011	PZ-19	10.93	23.67		12.74	--		
	3/24/2011	MW-02S	15.15	32.46		17.31	15.50	Yes	
	4/23/2011	PZ-19	15.81	23.67		7.86	--		
	4/23/2011	MW-02S	15.62	32.46		16.84	15.50	Yes	
	5/30/2011	PZ-19	15.07	23.67		8.60	--		
	5/30/2011	MW-02S	16.23	32.46		16.23	15.50	Yes	
	6/26/2011	PZ-19	13.87	23.67		9.80	--		
	6/26/2011	MW-02S	16.88	32.46		15.58	15.50	Yes	
	7/30/2011	PZ-19	15.93	23.67		7.74	--		
	7/30/2011	MW-02S	17.08	32.46		15.38	15.50	No	
	8/8/2011	PZ-19	16.19	23.67		7.48	--		
	8/8/2011	MW-02S	17.26	32.46		15.20	15.50	No	
	9/24/2011	PZ-19	15.34	23.67		8.33	--		
	9/24/2011	MW-02S	17.52	31.96	(e)	14.44	15.50	No	
	10/29/2011	PZ-19	13.66	23.67		10.01	--		
	10/29/2011	MW-02S	17.77	31.96	(e)	14.19	15.50	No	
	11/26/2011	PZ-19	11.91	23.67		11.76	--		
	11/26/2011	MW-02S	16.08	31.96	(e)	15.88	15.50	Yes	
	12/26/2011	PZ-19	13.50	23.67		10.17	--		
	12/26/2011	MW-02S	17.45	31.96	(e)	14.51	15.50	No	
	1/28/2012	PZ-19	12.50	23.67		11.17	--		
	1/28/2012	MW-02S	15.33	31.96	(e)	16.63	15.50	Yes	
	2/26/2012	PZ-19	15.09	23.67		8.58	--		
	2/26/2012	MW-02S	15.75	31.96	(e)	16.21	15.50	Yes	
	3/7/2012	PZ-19	14.88	23.67		8.79	--		
	3/7/2012	MW-02S	16.28	31.96	(e)	15.68	15.50	Yes	
	4/21/2012	PZ-19	15.35	23.67		8.32	--		
	4/21/2012	MW-02S	15.85	31.96	(e)	16.11	15.50	Yes	
	5/19/2012	PZ-19	13.37	23.67		10.30	--		
	5/19/2012	MW-02S	16.37	31.96	(e)	15.59	15.50	Yes	
	6/30/2012	PZ-19	14.11	23.67		9.56	--		
	6/30/2012	MW-02S	16.13	31.96	(e)	15.83	15.50	Yes	

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Well Pair	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
	7/27/2012	PZ-19	14.18	23.67		9.49	--		
	7/27/2012	MW-02S	16.02	31.96	(e)	15.94	15.50	Yes	
	8/12/2012	PZ-19	14.71	23.67		8.96	--		
	8/12/2012	MW-02S	15.80	31.96	(e)	16.16	15.50	Yes	
	9/30/2012	PZ-19	14.64	23.67		9.03	--		
	9/30/2012	MW-02S	16.09	31.96	(e)	15.87	15.50	Yes	
	10/24/2012	PZ-19	15.59	23.67		8.08	--		
	10/24/2012	MW-02S	16.50	31.96	(e)	15.46	15.50	No	
	11/24/2012	PZ-19	12.3	23.67		11.37	--		
	11/24/2012	MW-02S	14.72	31.96	(e)	17.24	15.50	Yes	
	12/30/2012	PZ-19	13.21	23.67		10.46	--		
	12/30/2012	MW-02S	15.19	31.96	(e)	16.77	15.50	Yes	
	1/25/2013	PZ-19	12.46	23.67		11.21	--		
	1/25/2013	MW-02S	16.61	31.96	(e)	15.35	15.50	No	
	2/9/2013	PZ-19	12.81	23.67		10.86	--		
	2/9/2013	MW-02S	16.57	31.96	(e)	15.39	15.50	No	
	3/31/2013	PZ-19	15.91	23.67		7.76	--		
	3/31/2013	MW-02S	16.57	31.96	(e)	15.39	15.50	No	
	4/29/2013	PZ-19	16.38	23.67		7.29	--		
	4/29/2013	MW-02S	16.71	31.96		15.25	15.50	No	
	5/31/2013	PZ-19	16.38	23.67		7.29	--		
	5/31/2013	MW-02S	17.48	31.96		14.48	15.50	No	
	6/9/2013	PZ-19	16.24	23.67		7.43	--		
	6/9/2013	MW-02S	17.48	31.96		14.48	15.50	No	
	7/21/2013	PZ-19	15.27	23.67		8.40	--		
	7/21/2013	MW-02S	18.11	31.96		13.85	15.50	No	
	8/29/2013	PZ-19	15.83	23.67		7.84	--		
	8/29/2013	MW-02S	17.89	31.96		14.07	15.50	No	
	9/21/2013	PZ-19	14.94	23.67		8.73	--		
	9/21/2013	MW-02S	17.63	31.96		14.33	15.50	No	
	10/6/2013	PZ-19	14.58	23.67		9.09	--		
	10/6/2013	MW-02S	16.03	31.96		15.93	15.50	Yes	
	11/10/2013	PZ-19	12.74	23.67		10.93	--		
	11/10/2013	MW-02S	17.11	31.96		14.85	15.50	No	
	12/15/2013	PZ-19	13.08	23.67		10.59	--		
	12/15/2013	MW-02S	17.50	31.96		14.46	15.50	No	
	1/5/2014	PZ-19	14.24	23.67		9.43	--		
	1/5/2014	MW-02S	17.67	31.96		14.29	15.50	No	
	2/1/2014	PZ-19	14.13	23.67		9.54	--		
	2/1/2014	MW-02S	17.21	31.96		14.75	15.50	No	
	3/1/2014	PZ-19	13.53	23.67		10.14	--		
	3/1/2014	MW-02S	15.96	31.96		16.00	15.50	Yes	

Table A-2
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Port of Olympia, Washington

Well Pair	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
	4/6/2014	PZ-19	13.46	23.67	10.21	--		
	4/6/2014	MW-02S	16.15	31.96	15.81	15.50	Yes	
	5/17/2014	PZ-19	15.88	23.67	7.79	--		
	5/17/2014	MW-02S	16.14	31.96	15.82	15.50	Yes	
	6/22/2014	PZ-19	14.82	23.67	8.85	--		
	6/22/2014	MW-02S	16.94	31.96	15.02	15.50	No	
	7/5/2014	PZ-19	14.13	23.67	9.54	--		
	7/5/2014	MW-02S	17.16	31.96	14.80	15.50	No	
	8/12/2014	PZ-19	15.96	23.67	7.71	--		
	8/12/2014	MW-02S	17.39	31.96	14.57	15.50	No	
	9/23/2014	PZ-19	13.34	23.67	10.33	--		
	9/23/2014	MW-02S	17.69	31.96	14.27	15.50	No	
	10/11/2014	PZ-19	13.57	23.67	10.10	--	--	
	10/11/2014	MW-02S	17.84	31.96	14.12	15.50	No	
	11/9/2014	PZ-19	13.31	23.67	10.36	--		
	11/9/2014	MW-02S	16.84	31.96	15.12	15.50	No	
	12/7/2014	PZ-19	12.72	23.67	10.95	--		
	12/7/2014	MW-02S	16.71	31.96	15.25	15.50	No	
	1/3/2015	PZ-19	11.98	23.67	11.69	--		
	1/3/2015	MW-02S	16.46	31.96	15.50	15.50	No	
	2/14/2015	PZ-19	12.33	23.67	11.34	--		
	2/14/2015	MW-02S	16.02	31.96	15.94	15.50	Yes	
	3/9/2015	PZ-19	12.81	23.67	10.86	--		
	3/9/2015	MW-02S	16.71	31.96	15.25	15.50	No	
	4/5/2015	PZ-19	14.61	23.67	9.06	--		
	4/5/2015	MW-02S	17.03	31.96	14.93	15.50	No	
	5/16/2015	PZ-19	15.88	23.67	7.79	--		
	5/16/2015	MW-02S	17.28	31.96	14.68	15.50	No	
	6/7/2015	PZ-19	16.00	23.67	7.67	--		
	6/7/2015	MW-02S	17.44	31.96	14.52	15.50	No	
	7/7/2015	PZ-19	12.56	23.67	11.11	--		
	7/7/2015	MW-02S	17.73	31.96	14.23	15.50	No	
	8/1/2015	PZ-19	15.09	23.67	8.58	--		
	8/1/2015	MW-02S	17.88	31.96	14.08	15.50	No	
	9/24/2015	PZ-19	15.40	23.67	8.27	--		
	9/24/2015	MW-02S	18.22	31.96	13.74	15.50	No	
	10/16/2015	PZ-19	14.03	23.67	9.64	--		
	10/16/2015	MW-02S	18.34	31.96	13.62	15.50	No	
	11/3/2015	PZ-19	13.20	23.67	10.47	--		
	11/3/2015	MW-02S	17.88	31.96	14.08	15.50	No	
	12/4/2015	PZ-19	10.90	23.67	12.77	--		
	12/4/2015	MW-02S	16.99	31.96	14.97	15.50	No	
	1/15/2016	PZ-19	12.09	23.67	11.58	--		

Table A-2
Cumulative Groundwater Elevations
Cascade Pole Site
Port of Olympia, Washington

Well Pair	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
	1/15/2016	MW-02S	16.09	31.96	15.87	15.50	Yes	
	2/16/2016	PZ-19	13.04	23.67	10.63	--		
	2/16/2016	MW-02S	14.93	31.96	17.03	15.50	Yes	
	3/19/2016	PZ-19	13.48	23.67	10.19	--		
	3/19/2016	MW-02S	14.44	31.96	17.52	15.50	Yes	
	4/3/2016	PZ-19	13.28	23.67	10.39	--		
	4/3/2016	MW-02S	14.98	31.96	16.98	15.50	Yes	
	5/14/2016	PZ-19	14.65	23.67	9.02	--		
	5/14/2016	MW-02S	16.12	31.96	15.84	15.50	Yes	
	6/12/2016	PZ-19	15.00	23.67	8.67	--		
	6/12/2016	MW-02S	16.51	31.96	15.45	15.50	No	
	7/5/2016	PZ-19	13.33	23.67	10.34	--		
	7/5/2016	MW-02S	16.68	31.96	15.28	15.50	No	
	8/6/2016	PZ-19	15.79	23.67	7.88	--		
	8/6/2016	MW-02S	16.83	31.96	15.13	15.50	No	
	9/4/2016	PZ-19	15.37	23.67	8.30	--		
	9/4/2016	MW-02S	17.09	31.96	14.87	15.50	No	
	10/1/2016	PZ-19	13.64	23.67	10.03	--		
	10/1/2016	MW-02S	17.16	31.96	14.80	15.50	No	
	11/6/2016	PZ-19	11.94	23.67	11.73	--		
	11/6/2016	MW-02S	15.33	31.96	16.63	15.50	Yes	
	12/17/2016	PZ-19	13.19	23.67	10.48	--		
	12/17/2016	MW-02S	15.18	31.96	16.78	15.50	Yes	
	1/21/2017	PZ-19	9.80	23.67	13.87	--		
	1/21/2017	MW-02S	14.44	31.96	17.52	15.50	Yes	
	2/2/2017	PZ-19	13.94	23.67	9.73	--		
	2/2/2017	MW-02S	15.28	31.96	16.68	15.50	Yes	
	2/28/2017	PZ-19	12.04	23.67	11.63	--		
	2/28/2017	MW-02S	14.26	31.96	17.70	15.50	Yes	
	3/30/2017	PZ-19	14.85	23.67	8.82	--		
	3/30/2017	MW-02S	13.02	31.96	18.94	15.50	Yes	
	4/30/2017	PZ-19	15.80	23.67	7.87	--		
	4/30/2017	MW-02S	14.18	31.96	17.78	15.50	Yes	
	5/21/2017	PZ-19	13.84	23.67	9.83	--		
	5/21/2017	MW-02S	14.27	31.96	17.69	15.50	Yes	
	6/6/2017	PZ-19	15.33	23.67	8.34	--		
	6/6/2017	MW-02S	14.77	31.96	17.19	15.50	Yes	
	7/8/2017	PZ-19	16.06	23.67	7.61	--		
	7/8/2017	MW-02S	15.54	31.96	16.42	15.50	Yes	
	8/4/2017	PZ-19	16.10	23.67	7.57	--		
	8/4/2017	MW-02S	15.94	31.96	16.02	15.50	Yes	
	9/9/2017	PZ-19	13.48	23.67	10.19	--		
	9/9/2017	MW-02S	16.43	31.96	15.53	15.50	Yes	

Table A-2
Cumulative Groundwater Elevations
Cascade Pole Site
Port of Olympia, Washington

Well Pair	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
	10/11/2017	PZ-19	14.91	23.67	8.76	--		
	10/11/2017	MW-02S	16.64	31.96	15.32	15.50	No	
	11/12/2017	PZ-19	13.48	23.67	10.19	--		
	11/12/2017	MW-02S	15.59	31.96	16.37	15.50	Yes	
	12/16/2017	PZ-19	13.45	23.67	10.22	--		
	12/16/2017	MW-02S	15.20	31.96	16.76	15.50	Yes	
	1/1/2018	PZ-19	12.79	23.67	10.88	--		
	1/1/2018	MW-02S	14.12	31.96	17.84	15.50	Yes	
	2/10/2018	PZ-19	12.54	23.67	11.13	--		
	2/10/2018	MW-02S	14.25	31.96	17.71	15.50	Yes	
	3/8/2018	PZ-19	12.16	23.67	11.51	--		
	3/8/2018	MW-02S	14.24	31.96	17.72	15.50	Yes	
5	11/8/2006	MW-02S	12.74	30.47	17.76	--		
	11/8/2006	MW-02D	18.24	31.79	13.55	--		
	12/31/2006	MW-02S	11.96	30.47	18.51	--		
	12/31/2006	MW-02D	16.29	31.79	15.50	--		
	3/2/2007	MW-02S	13.04	30.47	17.43	--		
	3/2/2007	MW-02D	19.51	31.79	12.28	--		
	3/31/2007	MW-02S	12.93	30.47	17.54	--		
	3/31/2007	MW-02D	20.11	31.79	11.68	--		
	4/23/2007	MW-02S	14.42	30.47	16.05	--		
	4/23/2007	MW-02D	17.72	31.79	14.07	--		
	5/28/2007	MW-02S	15.51	30.47	14.96	--		
	5/28/2007	MW-02D	20.60	31.79	11.19	--		
	6/30/2007	MW-02S	15.92	30.47	14.55	--		
	6/30/2007	MW-02D	22.15	31.79	9.64	--		
	8/1/2007	MW-02S	16.02	30.47	14.45	--		
	8/1/2007	MW-02D	21.70	31.79	10.09	--		
	9/29/2007	MW-02S	16.89	30.47	13.58	--		
	9/29/2007	MW-02D	19.82	31.79	11.97	--		
						--		
	11/22/2007	MW-02S	15.13	30.47	15.34	--		
	11/22/2007	MW-02D	17.61	31.79	14.18	--		
	1/26/2008	MW-02S	13.68	30.47	16.79	--		
	1/26/2008	MW-02D	18.57	31.79	13.22	--		
	2/28/2008	MW-02S	13.56	30.47	16.91	--		
	2/28/2008	MW-02D	21.25	31.79	10.54	--		
	3/19/2008	MW-02S	13.92	30.47	16.55	--		
	3/19/2008	MW-02D	17.87	31.79	13.92	--		
	4/28/2008	MW-02S	14.54	30.47	15.93	--		
	4/28/2008	MW-02D	19.45	31.79	12.34	--		
	5/31/2008	MW-02S	15.12	30.47	15.35	--		
	5/31/2008	MW-02D	19.16	31.79	12.63	--		

Table A-2
Cumulative Groundwater Elevations
Cascade Pole Site
Port of Olympia, Washington

Well Pair	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
	6/30/2008	MW-02S	15.60	30.47		13.58	--		
	6/30/2008	MW-02D	17.79	31.79		11.97	--		
							--		
	7/12/2008	MW-02S	15.73	30.47		14.74	--		
	7/12/2008	MW-02D	20.75	31.79		11.04	--		
	8/28/2008	MW-02S	16.43	30.47		14.04	--		
	8/28/2008	MW-02D	22.24	31.79		9.55	--		
	9/20/2008	MW-02S	NM	30.47		--	--		
	9/20/2008	MW-02D	NM	31.79		--	--		
	10/12/2008	MW-02S	NM	30.47		--	--		
	10/12/2008	MW-02D	NM	31.79		--	--		
	11/30/2008	MW-02S	NM	30.47		--	--		
	11/30/2008	MW-02D	NM	31.79		--	--		
	12/31/2008	MW-02S	NM	30.47		--	--		
	12/31/2008	MW-02D	NM	31.79		--	--		
	1/31/2009	MW-02S	16.81	32.46	(d)	15.65	--		
	1/31/2009	MW-02D	21.38	31.90	(d)	10.52	--		
	2/23/2009	MW-02S	17.22	32.46		15.24	--		
	2/23/2009	MW-02D	18.30	31.90		13.60	--		
	3/29/2009	MW-02S	17.20	32.46		15.26	--		
	3/29/2009	MW-02D	20.02	31.90		11.88	--		
	4/18/2009	MW-02S	17.13	32.46		15.33	--		
	4/18/2009	MW-02D	19.96	31.90		11.94	--		
	5/16/2009	MW-02S	16.79	32.46		15.67	--		
	5/16/2009	MW-02D	19.43	31.90		12.47	--		
	6/21/2009	MW-02S	17.65	32.46		14.81	--		
	6/21/2009	MW-02D	17.62	31.90		14.28	--		
	7/20/2009	MW-02S	18.00	32.46		14.46	--		
	7/20/2009	MW-02D	18.25	31.90		13.65	--		
	8/10/2009	MW-02S	18.37	32.46		14.09	--		
	8/10/2009	MW-02D	17.91	31.90		13.99	--		
	9/7/2009	MW-02S	18.85	32.46		13.61	--		
	9/7/2009	MW-02D	19.53	31.90		12.37	--		
	10/10/2009	MW-02S	19.26	32.46		13.20	--		
	10/10/2009	MW-02D	18.87	31.90		13.03	--		
	11/28/2009	MW-02S	18.17	32.46		14.29	--		
	11/28/2009	MW-02D	18.98	31.90		12.92	--		
	12/31/2009	MW-02S	18.02	32.46		14.44	--		
	12/31/2009	MW-02D	15.98	31.90		15.92	--		
	1/14/2010	MW-02S	17.27	32.46		15.19	--		
	1/14/2010	MW-02D	17.30	31.90		14.60	--		
	2/21/2010	MW-02S	16.79	32.46		15.67	--		
	2/21/2010	MW-02D	16.63	31.90		15.27	--		

Table A-2
Cumulative Groundwater Elevations
Cascade Pole Site
Port of Olympia, Washington

Well Pair	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
	3/17/2010	MW-02S	16.39	32.46		16.07	--		
	3/17/2010	MW-02D	18.12	31.90		13.78	--		
	4/25/2010	MW-02S	17.23	32.46		15.23	--		
	4/25/2010	MW-02D	18.31	31.90		13.59	--		
	5/16/2010	MW-02S	17.59	32.46		14.87	--		
	5/16/2010	MW-02D	20.96	31.90		10.94	--		
	6/26/2010	MW-02S	18.16	32.46		14.30	--		
	6/26/2010	MW-02D	20.48	31.90		11.42	--		
	7/23/2010	MW-02S	18.51	32.46		13.95	--		
	7/23/2010	MW-02D	21.13	31.90		10.77	--		
	8/30/2010	MW-02S	18.04	32.46		14.42	--		
	8/30/2010	MW-02D	18.14	31.90		13.76	--		
	9/30/2010	MW-02S	17.27	32.46		15.19	--		
	9/30/2010	MW-02D	18.48	31.90		13.42	--		
	10/18/2010	MW-02S	17.72	32.46		14.74	--		
	10/18/2010	MW-02D	21.20	31.90		10.70	--		
	11/29/2010	MW-02S	17.13	32.46		15.33	--		
	11/29/2010	MW-02D	16.71	31.90		15.19	--		
	12/25/2010	MW-02S	15.90	32.46		16.56	--		
	12/25/2010	MW-02D	15.44	31.90		16.46	--		
	1/29/2011	MW-02S	16.18	32.46		16.28	--		
	1/29/2011	MW-02D	17.61	31.90		14.29	--		
	2/20/2011	MW-02S	16.99	32.46		15.47	--		
	2/20/2011	MW-02D	19.95	31.90		11.95	--		
	3/24/2011	MW-02S	15.15	32.46		17.31	--		
	3/24/2011	MW-02D	15.34	31.90		16.56	--		
	4/23/2011	MW-02S	15.62	32.46		16.84	--		
	4/23/2011	MW-02D	21.73	31.90		10.17	--		
	5/30/2011	MW-02S	16.23	32.46		16.23	--		
	5/30/2011	MW-02D	21.58	31.90		10.32	--		
	6/26/2011	MW-02S	16.88	32.46		15.58	--		
	6/26/2011	MW-02D	18.31	31.90		13.59	--		
	7/30/2011	MW-02S	17.08	32.46		15.38	--		
	7/30/2011	MW-02D	22.39	31.90		9.51	--		
	8/8/2011	MW-02S	17.26	32.46		15.20	--		
	8/8/2011	MW-02D	21.40	31.90		10.50	--		
	9/24/2011	MW-02S	17.52	31.96	(e)	14.44	--		
	9/24/2011	MW-02D	21.44	31.81	(e)	10.37	--		
	10/29/2011	MW-02S	17.77	31.96	(e)	14.19	--		
	10/29/2011	MW-02D	17.73	31.81	(e)	14.08	--		
	11/26/2011	MW-02S	16.08	31.96	(e)	15.88	--		
	11/26/2011	MW-02D	16.43	31.81	(e)	15.38	--		

Table A-2
Cumulative Groundwater Elevations
Cascade Pole Site
Port of Olympia, Washington

Well Pair	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
	12/26/2011	MW-02S	17.45	31.96	(e)	14.51	--		
	12/26/2011	MW-02D	19.26	31.81	(e)	12.55	--		
	1/28/2012	MW-02S	15.33	31.96	(e)	16.63	--		
	1/28/2012	MW-02D	16.61	31.81	(e)	15.20	--		
	2/26/2012	MW-02S	15.75	31.96	(e)	16.21	--		DTWs for these two most likely switched on water level form. Data entered to be consistent with historical data.
	2/26/2012	MW-02D	21.30	31.81	(e)	10.51	--		
	3/7/2012	MW-02S	16.28	31.96	(e)	15.68	--		
	3/7/2012	MW-02D	20.75	31.81	(e)	11.06	--		
	4/21/2012	MW-02S	15.85	31.96	(e)	16.11	--		
	4/21/2012	MW-02D	19.86	31.81	(e)	11.95	--		
	5/19/2012	MW-02S	16.37	31.96	(e)	15.59	--		
	5/19/2012	MW-02D	20.17	31.81	(e)	11.64	--		
	6/30/2012	MW-02S	16.13	31.96	(e)	15.83	--		
	6/30/2012	MW-02D	17.29	31.81	(e)	14.52	--		
	7/27/2012	MW-02S	16.02	31.96	(e)	15.94	--		
	7/27/2012	MW-02D	18.81	31.81	(e)	13.00	--		
	8/12/2012	MW-02S	15.80	31.96	(e)	16.16	--		
	8/12/2012	MW-02D	17.99	31.81	(e)	13.82	--		
	9/30/2012	MW-02S	16.09	31.96	(e)	15.87	--		
	9/30/2012	MW-02D	17.80	31.81	(e)	14.01	--		
	10/24/2012	MW-02S	16.50	31.96	(e)	15.46	--		
	10/24/2012	MW-02D	20.12	31.81	(e)	11.69	--		
	11/24/2012	MW-02S	14.72	31.96	(e)	17.24	--		
	11/24/2012	MW-02D	16.49	31.81	(e)	15.32	--		
	12/30/2012	MW-02S	15.19	31.96	(e)	16.77	--		
	12/30/2012	MW-02D	17.87	31.81	(e)	13.94	--		
	1/25/2013	MW-02S	16.61	31.96	(e)	15.35	--		
	1/25/2013	MW-02D	16.00	31.81	(e)	15.81	--		
	2/9/2013	MW-02S	16.57	31.96	(e)	15.39	--		
	2/9/2013	MW-02D	16.54	31.81	(e)	15.27	--		
	3/31/2013	MW-02S	16.57	31.96	(e)	15.39	--		
	3/31/2013	MW-02D	21.87	31.81	(e)	9.94	--		
	4/29/2013	MW-02S	16.71	31.96		15.25	--		
	4/29/2013	MW-02D	20.14	31.81		11.67	--		
	5/31/2013	MW-02S	17.48	31.96		14.48	--		
	5/31/2013	MW-02D	20.56	31.81		11.25	--		
	6/9/2013	MW-02S	17.48	31.96		14.48	--		
	6/9/2013	MW-02D	21.93	31.81		9.88	--		
	7/21/2013	MW-02S	18.11	31.96		13.85	--		
	7/21/2013	MW-02D	17.62	31.81		14.19	--		
	8/29/2013	MW-02S	17.89	31.96		14.07	--		

Table A-2
Cumulative Groundwater Elevations
Cascade Pole Site
Port of Olympia, Washington

Well Pair	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
	8/29/2013	MW-02D	20.27	31.81	11.54	--		
	9/21/2013	MW-02S	17.63	31.96	14.33	--		
	9/21/2013	MW-02D	19.31	31.81	12.50	--		
	10/6/2013	MW-02S	16.03	31.96	15.93	--		
	10/6/2013	MW-02D	18.53	31.81	13.28	--		
	11/10/2013	MW-02S	17.11	31.96	14.85	--		
	11/10/2013	MW-02D	17.69	31.81	14.12	--		
	12/15/2013	MW-02S	17.50	31.96	14.46	--		
	12/15/2013	MW-02D	17.11	31.81	14.70	--		
	1/5/2014	MW-02S	17.67	31.96	14.29	--		
	1/5/2014	MW-02D	20.33	31.81	11.48	--		
	2/1/2014	MW-02S	17.21	31.96	14.75	--		
	2/1/2014	MW-02D	18.08	31.81	13.73	--		
	3/1/2014	MW-02S	15.96	31.96	16.00	--		
	3/1/2014	MW-02D	17.19	31.81	14.62	--		
	4/6/2014	MW-02S	16.15	31.96	15.81	--		
	4/6/2014	MW-02D	19.32	31.81	12.49	--		
	5/17/2014	MW-02S	16.14	31.96	15.82	--		
	5/17/2014	MW-02D	19.21	31.81	12.60	--		
	6/22/2014	MW-02S	16.94	31.96	15.02	--		
	6/22/2014	MW-02D	18.15	31.81	13.66	--		
	7/5/2014	MW-02S	17.16	31.96	14.80	--		
	7/5/2014	MW-02D	18.99	31.81	12.82	--		
	8/12/2014	MW-02S	17.39	31.96	14.57	--		
	8/12/2014	MW-02D	21.06	31.81	10.75	--		
	9/23/2014	MW-02S	17.69	31.96	14.27	--		
	9/23/2014	MW-02D	19.11	31.81	12.70	--		
	10/11/2014	MW-02S	17.84	31.96	14.12	--		
	10/11/2014	MW-02D	19.21	31.81	12.60	--		
	11/9/2014	MW-02S	16.84	31.96	15.12	--		
	11/9/2014	MW-02D	18.71	31.81	13.10	--		
	12/7/2014	MW-02S	16.71	31.96	15.25	--		
	12/7/2014	MW-02D	17.29	31.81	14.52	--		
	1/3/2015	MW-02S	16.46	31.96	15.50	--		
	1/3/2015	MW-02D	16.3	31.81	15.51	--		
	2/14/2015	MW-02S	16.02	31.96	15.94	--		
	2/14/2015	MW-02D	18.19	31.81	13.62	--		
	3/9/2015	MW-02S	16.71	31.96	15.25	--		
	3/9/2015	MW-02D	17.39	31.81	14.42	--		
	4/5/2015	MW-02S	17.03	31.96	14.93	--		
	4/5/2015	MW-02D	17.64	31.81	14.17	--		
	5/16/2015	MW-02S	17.28	31.96	14.68	--		
	5/16/2015	MW-02D	21.17	31.81	10.64	--		

Table A-2
Cumulative Groundwater Elevations
Cascade Pole Site
Port of Olympia, Washington

Well Pair	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
	6/7/2015	MW-02S	17.44	31.96	14.52	--		Brown mush like substance on probe
	6/7/2015	MW-02D	21.99	31.81	9.82	--		
	7/7/2015	MW-02S	17.73	31.96	14.23	--		
	7/7/2015	MW-02D	16.73	31.81	15.08	--		
	8/1/2015	MW-02S	17.88	31.96	14.08	--		
	8/1/2015	MW-02D	22.18	31.81	9.63	--		
	9/24/2015	MW-02S	18.22	31.96	13.74	--		
	9/24/2015	MW-02D	21.41	31.81	10.40	--		
	10/16/2015	MW-02S	18.34	31.96	13.62	--		
	10/16/2015	MW-02D	18.62	31.81	13.19	--		
	11/3/2015	MW-02S	17.88	31.96	14.08	--		
	11/3/2015	MW-02D	16.83	31.81	14.98	--		
	12/4/2015	MW-02S	16.99	31.96	14.97	--		
	12/4/2015	MW-02D	16.04	31.81	15.77	--		
	1/15/2016	MW-02S	16.09	31.96	15.87	--		
	1/15/2016	MW-02D	18.23	31.81	13.58	--		
	2/16/2016	MW-02S	14.93	31.96	17.03	--		
	2/16/2016	MW-02D	17.47	31.81	14.34	--		
	3/19/2016	MW-02S	14.44	31.96	17.52	--		
	3/19/2016	MW-02D	17.47	31.81	14.34	--		
	4/3/2016	MW-02S	14.98	31.96	16.98	15.50	Yes	
	4/3/2016	MW-02D	18.61	31.81	13.20	--		
	5/14/2016	MW-02S	16.12	31.96	15.84	15.50	Yes	
	5/14/2016	MW-02D	20.17	31.81	11.64	--		
	6/12/2016	MW-02S	16.51	31.96	15.45	15.50	No	
	6/12/2016	MW-02D	20.23	31.81	11.58	--		
	7/5/2016	MW-02S	16.68	31.96	15.28	15.50	No	
	7/5/2016	MW-02D	19.87	31.81	11.94	--		
	8/6/2016	MW-02S	16.83	31.96	15.13	15.50	No	
	8/6/2016	MW-02D	18.98	31.81	12.83	--		
	9/4/2016	MW-02S	17.09	31.96	14.87	15.50	No	
	9/4/2016	MW-02D	20.48	31.81	11.33	--		
	10/1/2016	MW-02S	17.16	31.96	14.80	15.50	No	
	10/1/2016	MW-02D	19.24	31.81	12.57	--		
	11/6/2016	MW-02S	15.33	31.96	16.63	15.50	Yes	
	11/6/2016	MW-02D	17.32	31.81	14.49	--		
	12/17/2016	MW-02S	15.18	31.96	16.78	15.50	Yes	
	12/17/2016	MW-02D	19.08	31.81	12.73	--		
	1/21/2017	MW-02S	14.44	31.96	17.52	15.50	Yes	
	1/21/2017	MW-02D	14.98	31.81	16.83	--		
	2/2/2017	MW-02S	15.28	31.96	16.68	15.50	Yes	
	2/2/2017	MW-02D	19.99	31.81	11.82	--		

Table A-2
Cumulative Groundwater Elevations
Cascade Pole Site
Port of Olympia, Washington

Well Pair	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
	2/28/2017	MW-02S	14.26	31.96	17.70	15.50	Yes	
	2/28/2017	MW-02D	17.32	31.81	14.49	--		
	3/30/2017	MW-02S	13.02	31.96	18.94	15.50	Yes	
	3/30/2017	MW-02D	19.55	31.81	12.26	--		
	4/30/2017	MW-02S	14.18	31.96	17.78	15.50	Yes	
	4/30/2017	MW-02D	21.81	31.81	10.00	--		
	5/21/2017	MW-02S	14.27	31.96	17.69	15.50	Yes	
	5/21/2017	MW-02D	18.42	31.81	13.39	--		
	6/6/2017	MW-02S	14.77	31.96	17.19	15.50	Yes	
	6/6/2017	MW-02D	18.30	31.81	13.51	--		
	7/8/2017	MW-02S	15.54	31.96	16.42	15.50	Yes	
	7/8/2017	MW-02D	19.16	31.81	12.65	--		
	8/4/2017	MW-02S	15.94	31.96	16.02	15.50	Yes	
	8/4/2017	MW-02D	20.29	31.81	11.52	--		
	9/9/2017	MW-02S	16.43	31.96	15.53	15.50	Yes	
	9/9/2017	MW-02D	19.48	31.81	12.33	--		
	10/11/2017	MW-02S	16.64	31.96	15.32	15.50	No	
	10/11/2017	MW-02D	17.53	31.81	14.28	--		
	11/12/2017	MW-02S	15.59	31.96	16.37	15.50	Yes	
	11/12/2017	MW-02D	16.13	31.81	15.68	--		
	12/16/2017	MW-02S	15.20	31.96	16.76	15.50	Yes	
	12/16/2017	MW-02D	17.38	31.81	14.43	--		
	1/1/2018	MW-02S	14.12	31.96	17.84	15.50	Yes	
	1/1/2018	MW-02D	16.93	31.81	14.88	--		
	2/10/2018	MW-02S	14.25	31.96	17.71	15.50	Yes	
	2/10/2018	MW-02D	17.61	31.81	14.20	--		
	3/8/2018	MW-02S	14.24	31.96	17.72	15.50	Yes	
	3/8/2018	MW-02D	16.19	31.81	15.62	--		
6	11/8/2006	MW-01S	7.51	21.64	14.13	--		
	11/8/2006	MW-01D	7.94	21.87	13.93	--		
	12/31/2006	MW-01S	5.59	21.64	16.05	--		
	12/31/2006	MW-01D	6.78	21.87	15.09	--		
	3/2/2007	MW-01S	5.81	21.64	15.83	--		
	3/2/2007	MW-01D	8.92	21.87	12.95	--		
	3/31/2007	MW-01S	5.71	21.64	15.93	--		
	3/31/2007	MW-01D	9.51	21.87	12.36	--		
	4/23/2007	MW-01S	6.17	21.64	15.47	--		
	4/23/2007	MW-01D	7.89	21.87	13.98	--		
	5/28/2007	MW-01S	6.78	21.64	14.86	--		
	5/28/2007	MW-01D	11.02	21.87	10.85	--		
	6/30/2007	MW-01S	7.12	21.64	14.52	--		
	6/30/2007	MW-01D	11.74	21.87	10.13	--		

Table A-2
Cumulative Groundwater Elevations
Cascade Pole Site
Port of Olympia, Washington

Well Pair	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
	8/1/2007	MW-01S	7.29	21.64	14.35	--		
	8/1/2007	MW-01D	9.57	21.87	12.30	--		
	9/29/2007	MW-01S	8.03	21.64	13.61	--		
	9/29/2007	MW-01D	8.83	21.87	13.04	--		
	11/22/2007	MW-01S	7.79	21.64	13.85	--		
	11/22/2007	MW-01D	8.89	21.87	12.98	--		
	1/26/2008	MW-01S	7.69	21.64	13.95	--		
	1/26/2008	MW-01D	5.63	21.87	16.24	--		
	2/28/2008	MW-01S	5.41	21.64	16.23	--		
	2/28/2008	MW-01D	9.87	21.87	12.00	--		
	3/19/2008	MW-01S	5.76	21.64	15.88	--		
	3/19/2008	MW-01D	9.62	21.87	12.25	--		
	4/28/2008	MW-01S	6.06	21.64	15.58	--		
	4/28/2008	MW-01D	8.65	21.87	13.22	--		
	5/31/2008	MW-01S	6.53	21.64	15.11	--		
	5/31/2008	MW-01D	8.72	21.87	13.15	--		
	6/30/2008	MW-01S	6.74	21.64	13.61	--		
	6/30/2008	MW-01D	7.94	21.87	13.04	--		
	7/12/2008	MW-01S	6.92	21.64	14.72	--		
	7/12/2008	MW-01D	10.94	21.87	10.93	--		
	8/28/2008	MW-01S	7.62	21.64	14.02	--		
	8/28/2008	MW-01D	11.03	21.87	10.84	--		
	9/20/2008	MW-01S	7.75	21.64	13.89	--		
	9/20/2008	MW-01D	8.58	21.87	13.29	--		
	10/12/2008	MW-01S	7.76	21.64	13.88	--		
	10/12/2008	MW-01D	8.59	21.87	13.28	--		
	11/30/2008	MW-01S	6.93	21.64	14.71	--		
	11/30/2008	MW-01D	8.44	21.87	13.43	--		
	12/31/2008	MW-01S	6.86	21.64	14.78	--		
	12/31/2008	MW-01D	7.81	21.87	14.06	--		
	1/31/2009	MW-01S	6.54	21.64	15.10	--		
	1/31/2009	MW-01D	9.94	21.87	11.93	--		
	2/23/2009	MW-01S	6.73	21.64	14.91	--		
	2/23/2009	MW-01D	9.27	21.87	12.60	--		
	3/29/2009	MW-01S	6.67	21.64	14.97	--		
	3/29/2009	MW-01D	11.20	21.87	10.67	--		
	4/18/2009	MW-01S	6.61	21.64	15.03	--		
	4/18/2009	MW-01D	10.30	21.87	11.57	--		
	5/16/2009	MW-01S	6.34	21.64	15.30	--		
	5/16/2009	MW-01D	9.21	21.87	12.66	--		
	6/21/2009	MW-01S	6.81	21.64	14.83	--		
	6/21/2009	MW-01D	8.52	21.87	13.35	--		
	7/20/2009	MW-01S	7.21	21.64	14.43	--		

Table A-2
Cumulative Groundwater Elevations
Cascade Pole Site
Port of Olympia, Washington

Well Pair	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
	7/20/2009	MW-01D	7.12	21.87	14.75	--		
	8/10/2009	MW-01S	7.40	21.64	14.24	--		
	8/10/2009	MW-01D	8.36	21.87	13.51	--		
	9/7/2009	MW-01S	7.79	21.64	13.85	--		
	9/7/2009	MW-01D	9.28	21.87	12.59	--		
	10/10/2009	MW-01S	8.19	21.64	13.45	--		
	10/10/2009	MW-01D	8.67	21.87	13.20	--		
	11/28/2009	MW-01S	7.48	21.64	14.16	--		
	11/28/2009	MW-01D	8.76	21.87	13.11	--		
	12/31/2009	MW-01S	7.22	21.64	14.42	--		
	12/31/2009	MW-01D	6.35	21.87	15.52	--		
	1/14/2010	MW-01S	6.96	21.64	14.68	--		
	1/14/2010	MW-01D	6.94	21.87	14.93	--		
	2/21/2010	MW-01S	6.41	21.64	15.23	--		
	2/21/2010	MW-01D	7.15	21.87	14.72	--		
	3/17/2010	MW-01S	6.28	21.64	15.36	--		
	3/17/2010	MW-01D	8.24	21.87	13.63	--		
	4/25/2010	MW-01S	6.31	21.64	15.33	--		
	4/25/2010	MW-01D	8.61	21.87	13.26	--		
	5/16/2010	MW-01S	6.52	21.64	15.12	--		
	5/16/2010	MW-01D	10.69	21.87	11.18	--		
	6/26/2010	MW-01S	6.84	21.64	14.80	--		
	6/26/2010	MW-01D	10.04	21.87	11.83	--		
	7/23/2010	MW-01S	7.03	21.64	14.61	--		
	7/23/2010	MW-01D	10.75	21.87	11.12	--		
	8/30/2010	MW-01S	7.48	21.64	14.16	--		
	8/30/2010	MW-01D	8.82	21.87	13.05	--		
	9/30/2010	MW-01S	7.26	21.64	14.38	--		
	9/30/2010	MW-01D	8.00	21.87	13.87	--		
	10/18/2010	MW-01S	7.24	21.64	14.40	--		
	10/18/2010	MW-01D	12.53	21.87	9.34	--		
	11/29/2010	MW-01S	6.84	21.64	14.80	--		
	11/29/2010	MW-01D	9.66	21.87	12.21	--		
	12/25/2010	MW-01S	6.54	21.64	15.10	--		
	12/25/2010	MW-01D	6.41	21.87	15.46	--		
	1/29/2011	MW-01S	6.49	21.64	15.15	--		
	1/29/2011	MW-01D	7.72	21.87	14.15	--		
	2/20/2011	MW-01S	6.48	21.64	15.16	--		
	2/20/2011	MW-01D	9.40	21.87	12.47	--		
	3/24/2011	MW-01S	5.86	21.64	15.78	--		
	3/24/2011	MW-01D	5.93	21.87	15.94	--		
	4/23/2011	MW-01S	5.98	21.64	15.66	--		

Table A-2
Cumulative Groundwater Elevations
Cascade Pole Site
Port of Olympia, Washington

Well Pair	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
	4/23/2011	MW-01D	10.67	21.87		11.20	--		
	5/30/2011	MW-01S	6.53	21.64		15.11	--		
	5/30/2011	MW-01D	10.63	21.87		11.24	--		
	6/26/2011	MW-01S	7.01	21.64		14.63	--		
	6/26/2011	MW-01D	8.44	21.87		13.43	--		
	7/30/2011	MW-01S	7.13	21.64		14.51	--		
	7/30/2011	MW-01D	10.85	21.87		11.02	--		
	8/8/2011	MW-01S	7.20	21.64		14.44	--		
	8/8/2011	MW-01D	10.94	21.87		10.93	--		minor amount of product on probe. No signal.
	9/24/2011	MW-01S	7.51	21.64		14.13	--		
	9/24/2011	MW-01D	10.65	21.87		11.22	--		
	10/29/2011	MW-01S	7.74	21.64		13.90	--		
	10/29/2011	MW-01D	7.90	21.87		13.97	--		
	11/26/2011	MW-01S	7.30	21.64		14.34	--		
	11/26/2011	MW-01D	6.53	21.87		15.34	--		
	12/26/2011	MW-01S	7.62	21.64		14.02	--		
	12/26/2011	MW-01D	8.70	21.72	(f)	13.02	--		
	1/28/2012	MW-01S	6.41	21.64		15.23	--		
	1/28/2012	MW-01D	7.24	21.72	(f)	14.48	--		
	2/26/2012	MW-01S	6.41	21.64		15.23	--		
	2/26/2012	MW-01D	10.20	21.72	(f)	11.52	--		
	3/7/2012	MW-01S	6.66	21.64		14.98	--		
	3/7/2012	MW-01D	9.18	21.72	(f)	12.54	--		
	4/21/2012	MW-01S	6.67	21.64		14.97	--		
	4/21/2012	MW-01D	8.87	21.72	(f)	12.85	--		
	5/19/2012	MW-01S	6.63	21.64		15.01	--		
	5/19/2012	MW-01D	9.50	21.72	(f)	12.22	--		
	6/30/2012	MW-01S	6.33	21.64		15.31	--		
	6/30/2012	MW-01D	7.94	21.72	(f)	13.78	--		
	7/27/2012	MW-01S	6.20	21.64		15.44	--		
	7/27/2012	MW-01D	8.26	21.72	(f)	13.46	--		
	8/12/2012	MW-01S	6.04	21.64		15.60	--		
	8/12/2012	MW-01D	8.32	21.72	(f)	13.40	--		
	9/30/2012	MW-01S	6.11	21.64		15.53	--		
	9/30/2012	MW-01D	8.21	21.72	(f)	13.51	--		
	10/24/2012	MW-01S	6.49	21.64		15.15	--		
	10/24/2012	MW-01D	9.30	21.72	(f)	12.42	--		
	11/24/2012	MW-01S	5.81	21.64		15.83	--		
	11/24/2012	MW-01D	7.09	21.72	(f)	14.63	--		
	12/30/2012	MW-01S	5.85	21.64		15.79	--		
	12/30/2012	MW-01D	7.58	21.72	(f)	14.14	--		
	1/25/2013	MW-01S	6.37	21.64		15.27	--		

Table A-2
Cumulative Groundwater Elevations
Cascade Pole Site
Port of Olympia, Washington

Well Pair	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
	1/25/2013	MW-01D	7.00	21.72	(f)	14.72	--		
	2/9/2013	MW-01S	6.71	21.64		14.93	--		
	2/9/2013	MW-01D	7.17	21.72	(f)	14.55	--		
	3/31/2013	MW-01S	6.96	21.64		14.68	--		
	3/31/2013	MW-01D	10.61	21.72	(f)	11.11	--		
	4/29/2013	MW-01S	7.15	21.64		14.49	--		
	4/29/2013	MW-01D	10.88	21.72		10.84	--		
	5/31/2013	MW-01S	7.42	21.64		14.22	--		
	5/31/2013	MW-01D	10.17	21.72		11.55	--		
	6/9/2013	MW-01S	7.47	21.64		14.17	--		
	6/9/2013	MW-01D	10.86	21.72		10.86	--		
	7/21/2013	MW-01S	7.68	21.64		13.96	--		
	7/21/2013	MW-01D	8.57	21.72		13.15	--		
	8/29/2013	MW-01S	7.99	21.64		13.65	--		
	8/29/2013	MW-01D	10.11	21.72		11.61	--		
	9/21/2013	MW-01S	7.89	21.64		13.75	--		
	9/21/2013	MW-01D	7.99	21.72		13.73	--		
	10/6/2013	MW-01S	7.42	21.64		14.22	--		
	10/6/2013	MW-01D	8.36	21.72		13.36	--		
	11/10/2013	MW-01S	7.77	21.64		13.87	--		
	11/10/2013	MW-01D	7.70	21.72		14.02	--		
	12/15/2013	MW-01S	7.93	21.64		13.71	--		
	12/15/2013	MW-01D	7.38	21.72		14.34	--		
	1/5/2014	MW-01S	9.42	21.64		12.22	--		
	1/5/2014	MW-01D	8.13	21.72		13.59	--		
	2/1/2014	MW-01S	7.93	21.64		13.71	--		
	2/1/2014	MW-01D	7.79	21.72		13.93	--		
	3/1/2014	MW-01S	7.37	21.64		14.27	--		
	3/1/2014	MW-01D	7.36	21.72		14.36	--		
	4/6/2014	MW-01S	7.05	21.64		14.59	--		
	4/6/2014	MW-01D	8.86	21.72		12.86	--		
	5/17/2014	MW-01S	6.95	21.64		14.69	--		
	5/17/2014	MW-01D	8.97	21.72		12.75	--		
	6/22/2014	MW-01S	7.42	21.64		14.22	--		
	6/22/2014	MW-01D	8.54	21.72		13.18	--		
	7/5/2014	MW-01S	7.62	21.64		14.02	--		
	7/5/2014	MW-01D	8.80	21.72		12.92	--		
	8/12/2014	MW-01S	7.97	21.64		13.67	--		
	8/12/2014	MW-01D	10.29	21.72		11.43	--		
	9/23/2014	MW-01S	8.25	21.64		13.39	--		
	9/23/2014	MW-01D	7.88	21.72		13.84	--		
	10/11/2014	MW-01S	8.46	21.64		13.18	--		
	10/11/2014	MW-01D	8.63	21.72		13.09	--		

Table A-2
Cumulative Groundwater Elevations
Cascade Pole Site
Port of Olympia, Washington

Well Pair	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
	11/9/2014	MW-01S	7.86	21.64	13.78	--		
	11/9/2014	MW-01D	7.67	21.72	14.05	--		
	12/7/2014	MW-01S	7.74	21.64	13.90	--		
	12/7/2014	MW-01D	7.36	21.72	14.36	--		
	1/3/2015	MW-01S	7.49	21.64	14.15	--		
	1/3/2015	MW-01D	6.87	21.72	14.85	--		
	2/14/2015	MW-01S	7.2	21.64	14.44	--		
	2/14/2015	MW-01D	7.79	21.72	13.93	--		
	3/9/2015	MW-01S	7.48	21.64	14.16	--		
	3/9/2015	MW-01D	7.02	21.72	14.70	--		
	4/5/2015	MW-01S	7.18	21.64	14.46	--		
	4/5/2015	MW-01D	8.12	21.72	13.60	--		
	5/16/2015	MW-01S	7.76	21.64	13.88	--		
	5/16/2015	MW-01D	10.39	21.72	11.33	--		
	6/7/2015	MW-01S	7.96	21.64	13.68	--		Product signal at 7.93 ft BTC
	6/7/2015	MW-01D	10.71	21.72	11.01	--		
	7/7/2015	MW-01S	8.25	21.64	13.39	--		
	7/7/2015	MW-01D	7.27	21.72	14.45	--		
	8/1/2015	MW-01S	8.44	21.64	13.20	--		
	8/1/2015	MW-01D	10.65	21.72	11.07	--		
	9/24/2015	MW-01S	8.79	21.64	12.85	--		Product at 8.66 ft; H2O at 8.79
	9/24/2015	MW-01D	10.10	21.72	11.62	--		
	10/16/2015	MW-01S	8.78	21.64	12.86	--		Product signal at 8.72 ft BTC
	10/16/2015	MW-01D	8.17	21.72	13.55	--		
	11/3/2015	MW-01S	8.67	21.64	12.97	--		
	11/3/2015	MW-01D	7.48	21.72	14.24	--		
	12/4/2015	MW-01S	7.88	21.64	13.76	--		
	12/4/2015	MW-01D	6.37	21.72	15.35	--		
	1/15/2016	MW-01S	7.01	21.64	14.63	--		
	1/15/2016	MW-01D	7.67	21.72	14.05	--		
	2/16/2016	MW-01S	6.17	21.64	15.47	--		
	2/16/2016	MW-01D	7.55	21.72	14.17	--		
	3/19/2016	MW-01S	5.61	21.64	16.03	--		
	3/19/2016	MW-01D	7.52	21.72	14.20	--		
	4/3/2016	MW-01S	5.72	21.64	15.92	--		
	4/3/2016	MW-01D	8.10	21.72	13.62	--		
	5/14/2016	MW-01S	6.34	21.64	15.30	--		
	5/14/2016	MW-01D	9.32	21.72	12.40	--		
	6/12/2016	MW-01S	6.65	21.64	14.99	--		
	6/12/2016	MW-01D	9.48	21.72	12.24	--		
	7/5/2016	MW-01S	6.85	21.64	14.79	--		
	7/5/2016	MW-01D	8.87	21.72	12.85	--		

Table A-2
Cumulative Groundwater Elevations
Cascade Pole Site
Port of Olympia, Washington

Well Pair	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
	8/6/2016	MW-01S	7.02	21.64	14.62	--		
	8/6/2016	MW-01D	9.21	21.72	12.51	--		
	9/4/2016	MW-01S	7.20	21.64	14.44	--		
	9/4/2016	MW-01D	9.68	21.72	12.04	--		
	10/1/2016	MW-01S	7.31	21.64	14.33	--		
	10/1/2016	MW-01D	8.92	21.72	12.80	--		
	11/6/2016	MW-01S	6.33	21.64	15.31	--		
	11/6/2016	MW-01D	7.07	21.72	14.65	--		
	12/17/2016	MW-01S	5.88	21.64	15.76	--		
	12/17/2016	MW-01D	8.43	21.72	13.29	--		
	1/21/2017	MW-01S	5.51	21.64	16.13	--		
	1/21/2017	MW-01D	5.42	21.72	16.30	--		
	2/2/2017	MW-01S	5.81	21.64	15.83	--		
	2/2/2017	MW-01D	8.93	21.72	12.79	--		
	2/28/2017	MW-01S	5.29	21.64	16.35	--		
	2/28/2017	MW-01D	7.13	21.72	14.59	--		
	3/30/2017	MW-01S	4.62	21.64	17.02	--		
	3/30/2017	MW-01D	9.25	21.72	12.47	--		
	4/30/2017	MW-01S	5.12	21.64	16.52	--		
	4/30/2017	MW-01D	10.72	21.72	11.00	--		
	5/21/2017	MW-01S	5.17	21.64	16.47	--		
	5/21/2017	MW-01D	8.33	21.72	13.39	--		
	6/6/2017	MW-01S	5.43	21.64	16.21	--		
	6/6/2017	MW-01D	8.20	21.72	13.52	--		
	7/8/2017	MW-01S	5.92	21.64	15.72	--		
	7/8/2017	MW-01D	9.39	21.72	12.33	--		
	8/4/2017	MW-01S	6.31	21.64	15.33	--		
	8/4/2017	MW-01D	10.01	21.72	11.71	--		
	9/9/2017	MW-01S	6.72	21.64	14.92	--		
	9/9/2017	MW-01D	8.69	21.72	13.03	--		
	10/11/2017	MW-01S	6.93	21.64	14.71	--		
	10/11/2017	MW-01D	8.11	21.72	13.61	--		
	11/12/2017	MW-01S	6.41	21.64	15.23	--		
	11/12/2017	MW-01D	6.92	21.72	14.80	--		
	12/16/2017	MW-01S	5.92	21.64	15.72	--		
	12/16/2017	MW-01D	7.67	21.72	14.05	--		
	1/1/2018	MW-01S	5.56	21.64	16.08	--		
	1/1/2018	MW-01D	7.15	21.72	14.57	--		
	2/10/2018	MW-01S	5.13	21.64	16.51	--		
	2/10/2018	MW-01D	7.48	21.72	14.24	--		
	3/8/2018	MW-01S	5.25	21.64	16.39	--		
	3/8/2018	MW-01D	6.71	21.72	15.01	--		

Table A-2
Cumulative Groundwater Elevations
Cascade Pole Site
Port of Olympia, Washington

Well Pair	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
7	11/8/2006	MW-05S	12.29	29.25	16.96	16.50	Yes	
	11/8/2006	MW-05D	14.36	28.10	13.74	--		
	12/31/2006	MW-05S	11.07	29.25	18.18	16.50	Yes	
	12/31/2006	MW-05D	11.96	28.10	16.14	--		
	3/2/2007	MW-05S	12.53	29.25	16.72	16.50	Yes	
	3/2/2007	MW-05D	16.18	28.10	11.92	--		
	3/31/2007	MW-05S	12.19	29.25	17.06	16.50	Yes	
	3/31/2007	MW-05D	16.22	28.10	11.88	--		
	4/23/2007	MW-05S	13.63	29.25	15.62	16.50	No	
	4/23/2007	MW-05D	13.93	28.10	14.17	--		
	5/28/2007	MW-05S	15.03	29.25	14.22	16.50	No	
	5/28/2007	MW-05D	16.01	28.10	12.09	--		
	6/30/2007	MW-05S	15.12	29.25	14.13	16.50	No	
	6/30/2007	MW-05D	17.80	28.10	10.30	--		
	8/1/2007	MW-05S	15.15	29.25	14.10	16.50	No	
	8/1/2007	MW-05D	18.67	28.10	9.43	--		
	9/29/2007	MW-05S	16.55	29.25	12.70	16.50	No	
	9/29/2007	MW-05D	16.50	28.10	11.60	--		
	11/22/2007	MW-05S	15.04	29.25	14.21	16.50	No	
	11/22/2007	MW-05D	12.63	28.10	15.47	--		
	1/26/2008	MW-05S	13.25	29.25	16.00	16.50	No	
	1/26/2008	MW-05D	15.45	28.10	12.65	--		
	2/28/2008	MW-05S	12.56	29.25	16.69	16.50	Yes	
	2/28/2008	MW-05D	17.81	28.10	10.29	--		
	3/19/2008	MW-05S	13.44	29.25	15.81	16.50	No	
	3/19/2008	MW-05D	17.97	28.10	10.13	--		
	4/28/2008	MW-05S	13.79	29.25	15.46	16.50	No	
	4/28/2008	MW-05D	16.16	28.10	11.94	--		
	5/31/2008	MW-05S	14.08	29.25	15.17	16.50	No	
	5/31/2008	MW-05D	15.63	28.10	12.47	--		
	6/30/2008	MW-05S	15.02	29.25	12.70	16.50	No	
	6/30/2008	MW-05D	14.00	28.10	11.60	--		
	7/12/2008	MW-05S	15.22	29.25	14.03	16.50	No	
	7/12/2008	MW-05D	16.33	28.10	11.77	--		
	8/28/2008	MW-05S	16.03	29.25	13.22	16.50	No	
	8/28/2008	MW-05D	18.98	28.10	9.12	--		
	9/20/2008	MW-05S	NM	29.25	--	16.50	--	
	9/20/2008	MW-05D	NM	28.10	--	--		
	10/12/2008	MW-05S	NM	29.25	--	16.50	--	
	10/12/2008	MW-05D	NM	28.10	--	--		
	11/30/2008	MW-05S	NM	29.25	--	16.50	--	
	11/30/2008	MW-05D	NM	28.10	--	--		
	12/31/2008	MW-05S	NM	29.25	--	16.50	--	

Table A-2
Cumulative Groundwater Elevations
Cascade Pole Site
Port of Olympia, Washington

Well Pair	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
	12/31/2008	MW-05D	NM	28.10		--	--		
	1/31/2009	MW-05S	15.38	29.45	(d)	14.07	16.50	No	
	1/31/2009	MW-05D	16.77	26.50	(d)	9.73	--		
	2/23/2009	MW-05S	15.85	29.45	(d)	13.60	16.50	No	
	2/23/2009	MW-05D	12.01	26.50	(d)	14.49	--		
	3/29/2009	MW-05S	15.17	29.45	(d)	14.28	16.50	No	
	3/29/2009	MW-05D	13.86	26.50	(d)	12.64	--		
	4/18/2009	MW-05S	15.63	29.45	(d)	13.82	16.50	No	
	4/18/2009	MW-05D	14.41	26.50	(d)	12.09	--		
	5/16/2009	MW-05S	15.09	29.45	(d)	14.36	16.50	No	
	5/16/2009	MW-05D	13.88	26.50	(d)	12.62	--		
	6/21/2009	MW-05S	16.38	29.45	(d)	13.07	16.50	No	
	6/21/2009	MW-05D	11.01	26.50	(d)	15.49	--		
	7/20/2009	MW-05S	16.95	29.45	(d)	12.50	16.50	No	
	7/20/2009	MW-05D	12.71	26.50	(d)	13.79	--		
	8/10/2009	MW-05S	16.82	29.45	(d)	12.63	16.50	No	
	8/10/2009	MW-05D	12.10	26.50	(d)	14.40	--		
	9/7/2009	MW-05S	18.33	29.45	(d)	11.12	16.50	No	
	9/7/2009	MW-05D	14.02	26.50	(d)	12.48	--		
	10/10/2009	MW-05S	19.16	29.45	(d)	10.29	16.50	No	
	10/10/2009	MW-05D	13.31	26.50	(d)	13.19	--		
	11/28/2009	MW-05S	17.31	29.45	(d)	12.14	16.50	No	
	11/28/2009	MW-05D	13.14	26.50	(d)	13.36	--		
	12/31/2009	MW-05S	16.66	29.45	(d)	12.79	16.50	No	
	12/31/2009	MW-05D	9.69	26.50	(d)	16.81	--		
	1/14/2010	MW-05S	14.89	29.45	(d)	14.56	16.50	No	
	1/14/2010	MW-05D	11.81	26.50	(d)	14.69	--		
	2/21/2010	MW-05S	14.71	29.45	(d)	14.74	16.50	No	
	2/21/2010	MW-05D	10.63	26.50	(d)	15.87	--		
	3/17/2010	MW-05S	13.53	29.45	(d)	15.92	16.50	No	
	3/17/2010	MW-05D	11.63	26.50	(d)	14.87	--		
	4/25/2010	MW-05S	16.11	29.45	(d)	13.34	16.50	No	
	4/25/2010	MW-05D	12.26	26.50	(d)	14.24	--		
	5/16/2010	MW-05S	16.14	29.45	(d)	13.31	16.50	No	
	5/16/2010	MW-05D	14.97	26.50	(d)	11.53	--		
	6/26/2010	MW-05S	17.07	29.45	(d)	12.38	16.50	No	
	6/26/2010	MW-05D	15.20	26.50	(d)	11.30	--		
	7/23/2010	MW-05S	17.73	29.45	(d)	11.72	16.50	No	
	7/23/2010	MW-05D	15.31	26.50	(d)	11.19	--		
	8/30/2010	MW-05S	15.58	29.45	(d)	13.87	16.50	No	
	8/30/2010	MW-05D	12.01	26.50	(d)	14.49	--		
	9/30/2010	MW-05S	14.32	29.45	(d)	15.13	16.50	No	

Table A-2
Cumulative Groundwater Elevations
Cascade Pole Site
Port of Olympia, Washington

Well Pair	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
	9/30/2010	MW-05D	12.83	26.50	(d)	13.67	--		
	10/18/2010	MW-05S	15.52	29.45	(d)	13.93	16.50	No	
	10/18/2010	MW-05D	15.58	26.50	(d)	10.92	--		
	11/29/2010	MW-05S	15.14	29.45	(d)	14.31	16.50	No	
	11/29/2010	MW-05D	10.32	26.50	(d)	16.18	--		
	12/25/2010	MW-05S	13.03	29.45	(d)	16.42	16.50	No	
	12/25/2010	MW-05D	9.02	26.50	(d)	17.48	--		
	1/29/2011	MW-05S	13.29	29.45	(d)	16.16	16.50	No	
	1/29/2011	MW-05D	11.80	26.50	(d)	14.70	--		
	2/20/2011	MW-05S	13.22	29.45	(d)	16.23	16.50	No	
	2/20/2011	MW-05D	14.33	26.50	(d)	12.17	--		
	3/24/2011	MW-05S	13.15	29.45	(d)	16.30	16.50	No	
	3/24/2011	MW-05D	9.11	26.50	(d)	17.39	--		
	4/23/2011	MW-05S	12.78	29.45	(d)	16.67	16.50	Yes	
	4/23/2011	MW-05D	16.44	26.50	(d)	10.06	--		
	5/30/2011	MW-05S	13.40	29.45	(d)	16.05	16.50	No	
	5/30/2011	MW-05D	16.18	26.50	(d)	10.32	--		
	6/26/2011	MW-05S	13.94	29.45	(d)	15.51	16.50	No	
	6/26/2011	MW-05D	12.31	26.50	(d)	14.19	--		
	7/30/2011	MW-05S	14.08	29.45	(d)	15.37	16.50	No	
	7/30/2011	MW-05D	17.13	26.50	(d)	9.37	--		
	8/8/2011	MW-05S	14.27	29.45	(d)	15.18	16.50	No	
	8/8/2011	MW-05D	15.50	26.50	(d)	11.00	--		
	9/24/2011	MW-05S	14.42	29.45	(d)	15.03	16.50	No	
	9/24/2011	MW-05D	16.02	26.50	(d)	10.48	--		
	10/29/2011	MW-05S	14.62	29.45	(d)	14.83	16.50	No	
	10/29/2011	MW-05D	11.59	26.50	(d)	14.91	--		
	11/26/2011	MW-05S	12.74	29.45	(d)	16.71	16.50	Yes	
	11/26/2011	MW-05D	10.19	26.50	(d)	16.31	--		
	12/26/2011	MW-05S	14.43	29.45	(d)	15.02	16.50	No	
	12/26/2011	MW-05D	13.68	26.50	(d)	12.82	--		
	1/28/2012	MW-05S	13.28	29.45	(d)	16.17	16.50	No	
	1/28/2012	MW-05D	10.15	26.50	(d)	16.35	--		
	2/26/2012	MW-05S	12.81	29.45	(d)	16.64	16.50	Yes	
	2/26/2012	MW-05D	15.87	26.50	(d)	10.63	--		
	3/7/2012	MW-05S	13.30	29.45	(d)	16.15	16.50	No	
	3/7/2012	MW-05D	15.35	26.50	(d)	11.15	--		
	4/21/2012	MW-05S	12.79	29.45	(d)	16.66	16.50	Yes	
	4/21/2012	MW-05D	12.84	26.50	(d)	13.66	--		
	5/19/2012	MW-05S	13.54	29.45	(d)	15.91	16.50	No	
	5/19/2012	MW-05D	14.39	26.50	(d)	12.11	--		
	6/30/2012	MW-05S	13.20	29.45	(d)	16.25	16.50	No	

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Cascade Pole Site
Port of Olympia, Washington

Well Pair	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
	6/30/2012	MW-05D	10.74	26.50	(d)	15.76	--		
	7/27/2012	MW-05S	13.26	29.45	(d)	16.19	16.50	No	
	7/27/2012	MW-05D	13.21	26.50	(d)	13.29	--		
	8/12/2012	MW-05S	11.66	29.45	(d)	17.79	16.50	Yes	
	8/12/2012	MW-05D	12.99	26.50	(d)	13.51	--		
	9/30/2012	MW-05S	13.23	29.45	(d)	16.22	16.50	No	
	9/30/2012	MW-05D	11.39	26.50	(d)	15.11	--		
	10/24/2012	MW-05S	13.45	29.45	(d)	16.00	16.50	No	
	10/24/2012	MW-05D	14.10	26.50	(d)	12.40	--		
	11/24/2012	MW-05S	11.57	29.45	(d)	17.88	16.50	Yes	
	11/24/2012	MW-05D	10.2	26.50	(d)	16.3	--		
	12/30/2012	MW-05S	12.23	29.45	(d)	17.22	16.50	Yes	
	12/30/2012	MW-05D	12.05	26.50	(d)	14.45	--		
	1/25/2013	MW-05S	10.55	29.45	(d)	18.90	16.50	Yes	
	1/25/2013	MW-05D	13.13	26.50	(d)	13.37	--		
	2/9/2013	MW-05S	10.16	29.45	(d)	19.29	16.50	Yes	
	2/9/2013	MW-05D	13.60	26.50	(d)	12.90	--		
	3/31/2013	MW-05S	13.61	29.45	(d)	15.84	16.50	No	
	3/31/2013	MW-05D	16.55	26.50	(d)	9.95	--		
	4/29/2013	MW-05S	13.84	29.45		15.61	16.50	No	
	4/29/2013	MW-05D	14.19	26.50		12.31	--		
	5/31/2013	MW-05S	14.42	29.45		15.03	16.50	No	
	5/31/2013	MW-05D	14.81	26.50		11.69	--		
	6/9/2013	MW-05S	14.43	29.45		15.02	16.50	No	
	6/9/2013	MW-05D	16.60	26.50		9.90	--		
	7/21/2013	MW-05S	14.63	29.45		14.82	16.50	No	
	7/21/2013	MW-05D	11.63	26.50		14.87	--		
	8/29/2013	MW-05S	14.92	29.45		14.53	16.50	No	
	8/29/2013	MW-05D	14.51	26.50		11.99	--		
	9/21/2013	MW-05S	14.56	29.45		14.89	16.50	No	
	9/21/2013	MW-05D	13.68	26.50		12.82	--		
	10/6/2013	MW-05S	13.06	29.45		16.39	16.50	No	
	10/6/2013	MW-05D	12.61	26.50		13.89	--		
	11/10/2013	MW-05S	14.15	29.45		15.30	16.50	No	
	11/10/2013	MW-05D	11.59	26.50		14.91	--		
	12/15/2013	MW-05S	14.61	29.45		14.84	16.50	No	
	12/15/2013	MW-05D	10.91	26.50		15.59	--		
	1/5/2014	MW-05S	14.91	29.45		14.54	16.50	No	
	1/5/2014	MW-05D	14.88	26.50		11.62	--		
	2/1/2014	MW-05S	14.37	29.45		15.08	16.50	No	
	2/1/2014	MW-05D	12.02	26.50		14.48	--		
	3/1/2014	MW-05S	13.03	29.45		16.42	16.50	No	
	3/1/2014	MW-05D	10.92	26.50		15.58	--		

Table A-2
Cumulative Groundwater Elevations
Cascade Pole Site
Port of Olympia, Washington

Well Pair	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
	4/6/2014	MW-05S	13.39	29.45	16.06	16.50	No	
	4/6/2014	MW-05D	13.64	26.50	12.86	--		
	5/17/2014	MW-05S	13.34	29.45	16.11	16.50	No	
	5/17/2014	MW-05D	12.97	26.50	13.53	--		
	6/22/2014	MW-05S	14.12	29.45	15.33	16.50	No	
	6/22/2014	MW-05D	11.81	26.50	14.69	--		
	7/5/2014	MW-05S	14.35	29.45	15.10	16.50	No	
	7/5/2014	MW-05D	13.17	26.50	13.33	--		
	8/12/2014	MW-05S	14.52	29.45	14.93	16.50	No	
	8/12/2014	MW-05D	15.60	26.50	10.90	--		
	9/23/2014	MW-05S	14.79	29.45	14.66	16.50	No	
	9/23/2014	MW-05D	13.18	26.50	13.32	--		
	10/11/2014	MW-05S	14.98	29.45	14.47	16.50	No	
	10/11/2014	MW-05D	13.23	26.50	13.27	--		
	11/9/2014	MW-05S	13.53	29.45	15.92	16.50	No	
	11/9/2014	MW-05D	13.27	26.50	13.23	--		
	12/7/2014	MW-05S	13.87	29.45	15.58	16.50	No	
	12/7/2014	MW-05D	11.53	26.50	14.97	--		
	1/3/2015	MW-05S	13.58	29.45	15.87	16.50	No	
	1/3/2015	MW-05D	10.05	26.50	16.45	--		
	2/14/2015	MW-05S	13.16	29.45	16.29	16.50	No	
	2/14/2015	MW-05D	11.99	26.50	14.51	--		
	3/9/2015	MW-05S	13.94	29.45	15.51	16.50	No	
	3/9/2015	MW-05D	10.95	26.50	15.55	--		
	4/5/2015	MW-05S	13.27	29.45	16.18	16.50	No	
	4/5/2015	MW-05D	11.33	26.50	15.17	--		
	5/16/2015	MW-05S	14.51	29.45	14.94	16.50	No	
	5/16/2015	MW-05D	15.81	26.50	10.69	--		
	6/7/2015	MW-05S	14.57	29.45	14.88	16.50	No	
	6/7/2015	MW-05D	16.58	26.50	9.92	--		
	7/7/2015	MW-05S	14.93	29.45	14.52	16.50	No	
	7/7/2015	MW-05D	10.44	26.50	16.06	--		
	8/1/2015	MW-05S	15.03	29.45	14.42	16.50	No	
	8/1/2015	MW-05D	16.34	26.50	10.16	--		
	9/24/2015	MW-05S	15.48	29.45	13.97	16.50	No	
	9/24/2015	MW-05D	15.74	26.50	10.76	--		
	10/16/2015	MW-05S	15.53	29.45	13.92	16.50	No	
	10/16/2015	MW-05D	13.21	26.50	13.29	--		
	11/3/2015	MW-05S	14.73	29.45	14.72	16.50	No	
	11/3/2015	MW-05D	10.53	26.50	15.97	--		
	12/4/2015	MW-05S	13.88	29.45	15.57	16.50	No	
	12/4/2015	MW-05D	9.68	26.50	16.82	--		

Table A-2
Cumulative Groundwater Elevations
Cascade Pole Site
Port of Olympia, Washington

Well Pair	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
	1/15/2016	MW-05S	13.15	29.45	16.30	16.50	No	
	1/15/2016	MW-05D	12.31	26.50	14.19	--		
	2/16/2016	MW-05S	11.81	29.45	17.64	16.50	Yes	
	2/16/2016	MW-05D	11.52	26.50	14.98	--		
	3/19/2016	MW-05S	11.63	29.45	17.82	16.50	Yes	
	3/19/2016	MW-05D	11.54	26.50	14.96	--		
	4/3/2016	MW-05S	12.27	29.45	17.18	16.50	Yes	
	4/3/2016	MW-05D	12.63	26.50	13.87	--		
	5/14/2016	MW-05S	13.33	29.45	16.12	16.50	No	
	5/14/2016	MW-05D	14.48	26.50	12.02	--		
	6/12/2016	MW-05S	13.74	29.45	15.71	16.50	No	
	6/12/2016	MW-05D	14.56	26.50	11.94	--		
	7/5/2016	MW-05S	13.84	29.45	15.61	16.50	No	
	7/5/2016	MW-05D	14.05	26.50	12.45	--		
	8/6/2016	MW-05S	13.96	29.45	15.49	16.50	No	
	8/6/2016	MW-05D	12.88	26.50	13.62	--		
	9/4/2016	MW-05S	14.23	29.45	15.22	16.50	No	
	9/4/2016	MW-05D	15.18	26.50	11.32	--		
	10/1/2016	MW-05S	14.26	29.45	15.19	16.50	No	
	10/1/2016	MW-05D	13.13	26.50	13.37	--		
	11/6/2016	MW-05S	12.15	29.45	17.30	16.50	Yes	
	11/6/2016	MW-05D	11.35	26.50	15.15	--		
	12/17/2016	MW-05S	12.34	29.45	17.11	16.50	Yes	
	12/17/2016	MW-05D	13.47	26.50	13.03	--		
	1/21/2017	MW-05S	11.43	29.45	18.02	16.50	Yes	
	1/21/2017	MW-05D	8.84	26.50	17.66	--		
	2/2/2017	MW-05S	12.48	29.45	16.97	16.50	Yes	
	2/2/2017	MW-05D	14.57	26.50	11.93	--		
	2/28/2017	MW-05S	11.65	29.45	17.80	16.50	Yes	
	2/28/2017	MW-05D	11.18	26.50	15.32	--		
	3/30/2017	MW-05S	10.32	29.45	19.13	16.50	Yes	
	3/30/2017	MW-05D	13.86	26.50	12.64	--		
	4/30/2017	MW-05S	11.59	29.45	17.86	16.50	Yes	
	4/30/2017	MW-05D	16.60	26.50	9.90	--		
	5/21/2017	MW-05S	11.55	29.45	17.90	16.50	Yes	
	5/21/2017	MW-05D	12.40	26.50	14.10	--		
	6/6/2017	MW-05S	12.14	29.45	17.31	16.50	Yes	
	6/6/2017	MW-05D	12.18	26.50	14.32	--		
	7/8/2017	MW-05S	12.88	29.45	16.57	16.50	Yes	
	7/8/2017	MW-05D	13.14	26.50	13.36	--		
	8/4/2017	MW-05S	13.25	29.45	16.20	16.50	No	
	8/4/2017	MW-05D	14.64	26.50	11.86	--		
	9/9/2017	MW-05S	13.73	29.45	15.72	16.50	No	

Table A-2
Cumulative Groundwater Elevations
Cascade Pole Site
Port of Olympia, Washington

Well Pair	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
	9/9/2017	MW-05D	13.99	26.50	12.51	--		
	10/11/2017	MW-05S	13.89	29.45	15.56	16.50	No	
	10/11/2017	MW-05D	11.11	26.50	15.39	--		
	11/12/2017	MW-05S	12.65	29.45	16.80	16.50	Yes	
	11/12/2017	MW-05D	9.61	26.50	16.89	--		
	12/16/2017	MW-05S	12.44	29.45	17.01	16.50	Yes	
	12/16/2017	MW-05D	11.39	26.50	15.11	--		
	1/1/2018	MW-05S	11.22	29.45	18.23	16.50	Yes	
	1/1/2018	MW-05D	10.85	26.50	15.65	--		
	2/10/2018	MW-05S	11.61	29.45	17.84	16.50	Yes	
	2/10/2018	MW-05D	11.51	26.50	14.99	--		
	3/8/2018	MW-05S	11.56	29.45	17.89	16.50	Yes	
	3/8/2018	MW-05D	10.10	26.50	16.40	--		

NM = Not measured.
NA = Not available.
MLLW = Mean low low water.

(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.
(c) Well LW-3 casing modified and re-surveyed January 2009. On 7/28/10 the well casing at LW-3 cut down 0.2 ft to make room for new well monument lid. Elevation was adjusted from 20.03 to 19.83.
(d) Wells MW-02s, MW-02d, MW-05s, and MW-05d were modified during construction activities and re-surveyed February 2009.
(e) MW-02D and MW-02S inner north rim elevations modified in September 2011.
(f) On 12/8/11 the inner well casing was cut down at MW-01D by 0.15'. Outer casing cut down corresponding amount. New MW-01D measuring point elevation is 21.72' MLLW.

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

APPENDIX B

Laboratory Analytical Results

Analytical Resources, Incorporated
Analytical Chemists and Consultants

30 October 2017

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)
17J0190	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 reqirements 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

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

Chain-of-Custody Record

Date 10/12/2017
Page 1 of 1

Project Name Port of Olympia Project No. 0021041.010.011
Project Location/Event Cascade Pole, Dry Season
Sampler's Name K. Ganglitz; J. Sloan
Project Contact Chris Kimmel
Send Results To Chris Kimmel, Don Bache, Dani Irgensen

Testing Parameters

Turnaround Time
☒ Standard
☐ Accelerated
☐ _____

Sample I.D.	Date	Time	Matrix	No. of Containers	NWTPH-Gx	NWTPH-Dx +creosote	PAHs	cPAHs SIM	PCP (8270)	PCP (604.1)	Observations/Comments
TripBlank-20171011	—	—	H2O	2	X						
CW-13-20171011	10/11/17	1330		10	X	X	X	X	X		
MW-01D-20171012	10/12/17	1145			X	X	X	X	X		
MW-02D-20171011	10/11/17	1545			X	X	X	X	X		
MW-05D-20171011	10/11/17	1445			X	X	X	X	X		
PZ-13-20171012	10/12/17	940			X	X	X	X	X		
PZ-17-20171011	10/11/17	17:10			X	X	X	X	X		
PZ-18-20171011	10/11/17	18:00			X	X	X	X	X		
PZ-19-20171012	10/12/17	10:40			X	X	X	X	X		
LW-3-20171011	10/11/17	1720			X	X	X	X	X		
LW-4R-20171011	10/11/17	1815			X	X	X	X	X		
MW-01S-20171012	10/12/17	1148			X	X	X	X	X		
MW-02S-20171011	10/11/17	1505			X	X	X	X	X		
MW-05S-20171011	10/11/17	1315			X	X	X	X	X		
PZ-30-20171011	10/11/17	1320			X	X	X	X	X		
PZ-12-20171012	10/12/17	925			X	X	X	X	X		

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 8 coolers w/ ice; VOAs are not preserved

Method of Shipment drop-off

Relinquished by	Received by	Relinquished by	Received by
Signature Katie Ganglitz	Signature Stephanie Fisher	Signature	Signature
Printed Name Katie Ganglitz	Printed Name Stephanie Fisher	Printed Name	Printed Name
Company LAI	Company ARI	Company	Company
Date 10/12/2017 Time 13:45	Date 10/12/17 Time 1345	Date Time	Date Time

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

12/2014

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Landau

Project Name: Port of Olympia

COC No(s): _____ NA

Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____

Assigned ARI Job No: 17J0190

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) 1.2

Time: 1345

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

Temp Gun ID#: D002565

Cooler Accepted by: SF Date: 10/12/17 Time: 1345

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		

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

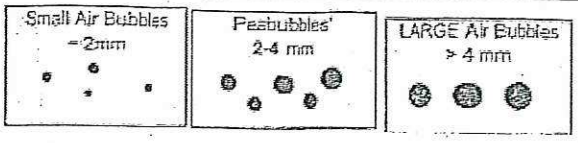
Samples Logged by: SF Date: 10/12/17 Time: 1726

*** 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:



Small → "sm" (< 2 mm)

Peabubbles → "pb" (2 to < 4 mm)

Large → "lg" (4 to < 6 mm)

Headspace → "hs" (> 6 mm)

Analytical Report

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: 0021041.010.011	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	30-Oct-2017 14:42

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Trip Blank-20171011	17J0190-01	Water	11-Oct-2017 00:00	12-Oct-2017 13:45
CW-13-20171011	17J0190-02	Water	11-Oct-2017 13:30	12-Oct-2017 13:45
MW-01D-20171012	17J0190-03	Water	12-Oct-2017 11:45	12-Oct-2017 13:45
MW-02D-20171011	17J0190-04	Water	11-Oct-2017 15:45	12-Oct-2017 13:45
MW-05D-20171011	17J0190-05	Water	11-Oct-2017 14:45	12-Oct-2017 13:45
PZ-13-20171012	17J0190-06	Water	12-Oct-2017 09:40	12-Oct-2017 13:45
PZ-17-20171011	17J0190-07	Water	11-Oct-2017 17:10	12-Oct-2017 13:45
PZ-18-20171011	17J0190-08	Water	11-Oct-2017 18:00	12-Oct-2017 13:45
PZ-19-20171012	17J0190-09	Water	12-Oct-2017 10:40	12-Oct-2017 13:45
LW-3-20171011	17J0190-10	Water	11-Oct-2017 17:20	12-Oct-2017 13:45
LW-4R-20171011	17J0190-11	Water	11-Oct-2017 18:15	12-Oct-2017 13:45
MW-01S-20171012	17J0190-12	Water	12-Oct-2017 11:48	12-Oct-2017 13:45
MW-02S-20171011	17J0190-13	Water	11-Oct-2017 15:05	12-Oct-2017 13:45
MW-05S-20171011	17J0190-14	Water	11-Oct-2017 13:15	12-Oct-2017 13:45
PZ-30-20171011	17J0190-15	Water	11-Oct-2017 13:20	12-Oct-2017 13:45
PZ-12-20171012	17J0190-16	Water	12-Oct-2017 09:25	12-Oct-2017 13:45

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: 0021041.010.011	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	30-Oct-2017 14:42

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.

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

The LCS/ LCSD and RPD recoveries were within control limits.

Per the COC instructions, samples were allowed to settle and sample volumes were collected from the clear portion.

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 Pentachlorophenol which was out of control high in the associated CCAL. All associated samples which contain analyte have been flagged with a "Q" qualifier for the 10/20/17 analysis.

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 and RPD recoveries were within control limits.

Per the COC instructions, samples were allowed to settle and sample volumes were collected from the clear portion.

Polynuclear Aromatic Hydrocarbons (cPAH only) - 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.

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: 0021041.010.011	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	30-Oct-2017 14:42

The surrogate percent recoveries were within control limits.

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

The LCS/ LCSD and RPD recoveries were within control limits.

Per the COC instructions, samples were allowed to settle and sample volumes were collected from the clear portion.

Gasoline Range Organics - WA-Ecology Method NW-TPHG

The sample(s) were run 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 and RPD 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 and RPD recoveries were within control limits.

Per the COC instructions, samples were allowed to settle and sample volumes were collected from the clear portion.

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: 0021041.010.011	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	30-Oct-2017 14:42

Trip Blank-20171011

17J0190-01 (Water)

Volatile Organic Compounds

Method: NWTPHg
Instrument: NT2

Sampled: 10/11/2017 00:00
Analyzed: 13-Oct-2017 11:44

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BFJ0361 Sample Size: 10 mL
Prepared: 13-Oct-2017 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 %*	*97.5*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*95.8*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: 0021041.010.011	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	30-Oct-2017 14:42

CW-13-20171011

17J0190-02 (Water)

Volatile Organic Compounds

Method: NWTPHg
Instrument: NT2

Sampled: 10/11/2017 13:30
Analyzed: 13-Oct-2017 12:04

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BFJ0361 Sample Size: 10 mL
Prepared: 13-Oct-2017 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 %*	*98.4*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*95.8*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: 0021041.010.011	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	30-Oct-2017 14:42

CW-13-20171011

17J0190-02 (Water)

Semivolatile Organic Compounds

Method: EPA 8270D
Instrument: NT6

Sampled: 10/11/2017 13:30
Analyzed: 20-Oct-2017 02:30

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BFJ0364
Prepared: 14-Oct-2017

Sample Size: 500 mL
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 %*	*81.6*	*%*	
Surrogate: 2,4,6-Tribromophenol			*49.3-128 %*	*96.3*	*%*	
Surrogate: p-Terphenyl-d14			*60-120 %*	*91.4*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: 0021041.010.011	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	30-Oct-2017 14:42

CW-13-20171011

17J0190-02 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270D-SIM
Instrument: NT8

Sampled: 10/11/2017 13:30
Analyzed: 19-Oct-2017 19:19

Sample Preparation:
Preparation Method: EPA 3520C (Liq Liq)
Preparation Batch: BFJ0365
Prepared: 16-Oct-2017
Sample Size: 500 mL
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 %*	*60.4*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14			*10-125 %*	*98.9*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: 0021041.010.011	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	30-Oct-2017 14:42

CW-13-20171011

17J0190-02 (Water)

Petroleum Hydrocarbons

Method: NWTPH-Dx
Instrument: FID4

Sampled: 10/11/2017 13:30
Analyzed: 20-Oct-2017 23:28

Sample Preparation:	Preparation Method: EPA 3510C SepF	
	Preparation Batch: BFJ0359	Sample Size: 500 mL
	Prepared: 13-Oct-2017	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Silica Gel	
	Cleanup Batch: CFJ0129	Initial Volume: 1 mL
	Cleaned: 20-Oct-2017	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Sulfuric Acid	
	Cleanup Batch: CFJ0128	Initial Volume: 1 mL
	Cleaned: 20-Oct-2017	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 %*	*103*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: 0021041.010.011	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	30-Oct-2017 14:42

CW-13-20171011

17J0190-02 (Water)

Phenols

Method: EPA 8041A
Instrument: ECD8

Sampled: 10/11/2017 13:30
Analyzed: 24-Oct-2017 17:29

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BFJ0362
Prepared: 17-Oct-2017
Sample Size: 500 mL
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 %*	*45.5*	*%*	
Surrogate: 2,4,6-Tribromophenol [2C]			*26-120 %*	*51.1*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: 0021041.010.011	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	30-Oct-2017 14:42

MW-01D-20171012

17J0190-03 (Water)

Volatile Organic Compounds

Method: NWTPHg
Instrument: NT2

Sampled: 10/12/2017 11:45
Analyzed: 13-Oct-2017 12:25

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BFJ0361 Sample Size: 10 mL
Prepared: 13-Oct-2017 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 %*	*96.6*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*95.4*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: 0021041.010.011	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	30-Oct-2017 14:42

MW-01D-20171012

17J0190-03 (Water)

Semivolatile Organic Compounds

Method: EPA 8270D
Instrument: NT6

Sampled: 10/12/2017 11:45
Analyzed: 19-Oct-2017 18:47

Sample Preparation:
Preparation Method: EPA 3510C SepF
Preparation Batch: BFJ0364
Prepared: 14-Oct-2017
Sample Size: 500 mL
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 %*	*71.1*	*%*	
Surrogate: 2,4,6-Tribromophenol			*49.3-128 %*	*81.6*	*%*	
Surrogate: p-Terphenyl-d14			*60-120 %*	*83.1*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: 0021041.010.011	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	30-Oct-2017 14:42

MW-01D-20171012

17J0190-03 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270D-SIM
Instrument: NT8

Sampled: 10/12/2017 11:45
Analyzed: 19-Oct-2017 19:46

Sample Preparation:
Preparation Method: EPA 3520C (Liq Liq)
Preparation Batch: BFJ0365
Prepared: 16-Oct-2017
Sample Size: 500 mL
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 %*	*54.5*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14			*10-125 %*	*74.7*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: 0021041.010.011	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	30-Oct-2017 14:42

MW-01D-20171012

17J0190-03 (Water)

Petroleum Hydrocarbons

Method: NWTPH-Dx
Instrument: FID4

Sampled: 10/12/2017 11:45
Analyzed: 20-Oct-2017 23:49

Sample Preparation:	Preparation Method: EPA 3510C SepF	
	Preparation Batch: BFJ0359	Sample Size: 500 mL
	Prepared: 13-Oct-2017	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Silica Gel	
	Cleanup Batch: CFJ0129	Initial Volume: 1 mL
	Cleaned: 20-Oct-2017	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Sulfuric Acid	
	Cleanup Batch: CFJ0128	Initial Volume: 1 mL
	Cleaned: 20-Oct-2017	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 %*	*110*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: 0021041.010.011	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	30-Oct-2017 14:42

MW-01D-20171012

17J0190-03 (Water)

Phenols

Method: EPA 8041A
Instrument: ECD8

Sampled: 10/12/2017 11:45
Analyzed: 24-Oct-2017 17:47

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BFJ0362
Prepared: 17-Oct-2017
Sample Size: 500 mL
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 %*	*45.3*	*%*	
Surrogate: 2,4,6-Tribromophenol [2C]			*26-120 %*	*51.6*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: 0021041.010.011	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	30-Oct-2017 14:42

MW-02D-20171011

17J0190-04 (Water)

Volatile Organic Compounds

Method: NWTPHg
Instrument: NT2

Sampled: 10/11/2017 15:45
Analyzed: 13-Oct-2017 12:45

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BFJ0361 Sample Size: 10 mL
Prepared: 13-Oct-2017 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)		1	100	**188**	ug/L	
HC ID: GRO						
Surrogate: Toluene-d8			*80-120 %*	*95.6*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*92.0*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: 0021041.010.011	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	30-Oct-2017 14:42

MW-02D-20171011

17J0190-04 (Water)

Semivolatile Organic Compounds

Method: EPA 8270D
Instrument: NT6

Sampled: 10/11/2017 15:45
Analyzed: 19-Oct-2017 19:20

Sample Preparation:
Preparation Method: EPA 3510C SepF
Preparation Batch: BFJ0364
Prepared: 14-Oct-2017
Sample Size: 500 mL
Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	1.0	**75.0**	ug/L	
Acenaphthylene	208-96-8	1	1.0	ND	ug/L	U
Acenaphthene	83-32-9	1	1.0	**17.2**	ug/L	
2-Methylnaphthalene	91-57-6	1	1.0	**11.0**	ug/L	
Dibenzofuran	132-64-9	1	1.0	**5.2**	ug/L	
Fluorene	86-73-7	1	1.0	**5.4**	ug/L	
Pentachlorophenol	87-86-5	1	10.0	ND	ug/L	U
Phenanthrene	85-01-8	1	1.0	**4.4**	ug/L	
Anthracene	120-12-7	1	1.0	ND	ug/L	U
Carbazole	86-74-8	1	1.0	**5.3**	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	**12.7**	ug/L	
Surrogate: 2-Fluorobiphenyl			*54.4-120 %*	*79.0*	*%*	
Surrogate: 2,4,6-Tribromophenol			*49.3-128 %*	*91.7*	*%*	
Surrogate: p-Terphenyl-d14			*60-120 %*	*89.8*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: 0021041.010.011	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	30-Oct-2017 14:42

MW-02D-20171011

17J0190-04 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270D-SIM
Instrument: NT8

Sampled: 10/11/2017 15:45
Analyzed: 19-Oct-2017 20:12

Sample Preparation:
Preparation Method: EPA 3520C (Liq Liq)
Preparation Batch: BFJ0365
Prepared: 16-Oct-2017
Sample Size: 500 mL
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 %*	*64.2*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14			*10-125 %*	*110*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: 0021041.010.011	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	30-Oct-2017 14:42

MW-02D-20171011

17J0190-04 (Water)

Petroleum Hydrocarbons

Method: NWTPH-Dx
Instrument: FID4

Sampled: 10/11/2017 15:45
Analyzed: 21-Oct-2017 00:13

Sample Preparation:	Preparation Method: EPA 3510C SepF	
	Preparation Batch: BFJ0359	Sample Size: 500 mL
	Prepared: 13-Oct-2017	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Silica Gel	
	Cleanup Batch: CFJ0129	Initial Volume: 1 mL
	Cleaned: 20-Oct-2017	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Sulfuric Acid	
	Cleanup Batch: CFJ0128	Initial Volume: 1 mL
	Cleaned: 20-Oct-2017	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	**299**	ug/L	
HC ID: CREOSOTE						
Surrogate: o-Terphenyl			*50-150 %*	*102*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: 0021041.010.011	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	30-Oct-2017 14:42

MW-02D-20171011

17J0190-04 (Water)

Phenols

Method: EPA 8041A
Instrument: ECD8

Sampled: 10/11/2017 15:45
Analyzed: 24-Oct-2017 18:05

Sample Preparation:
Preparation Method: EPA 3510C SepF
Preparation Batch: BFJ0362
Prepared: 17-Oct-2017
Sample Size: 500 mL
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 %*	*48.6*	*%*	
Surrogate: 2,4,6-Tribromophenol [2C]			*26-120 %*	*53.4*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: 0021041.010.011	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	30-Oct-2017 14:42

MW-05D-20171011

17J0190-05 (Water)

Volatile Organic Compounds

Method: NWTPHg
Instrument: NT2

Sampled: 10/11/2017 14:45
Analyzed: 13-Oct-2017 13:05

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BFJ0361 Sample Size: 10 mL
Prepared: 13-Oct-2017 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 %*	*95.8*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*94.3*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: 0021041.010.011	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	30-Oct-2017 14:42

MW-05D-20171011

17J0190-05 (Water)

Semivolatile Organic Compounds

Method: EPA 8270D
Instrument: NT6

Sampled: 10/11/2017 14:45
Analyzed: 19-Oct-2017 19:53

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BFJ0364
Prepared: 14-Oct-2017
Sample Size: 500 mL
Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	1.0	**3.1**	ug/L	
Acenaphthylene	208-96-8	1	1.0	ND	ug/L	U
Acenaphthene	83-32-9	1	1.0	**7.0**	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	**1.9**	ug/L	
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	**3.0**	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	**1.2**	ug/L	
Surrogate: 2-Fluorobiphenyl			*54.4-120 %*	*75.2*	*%*	
Surrogate: 2,4,6-Tribromophenol			*49.3-128 %*	*89.5*	*%*	
Surrogate: p-Terphenyl-d14			*60-120 %*	*87.8*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: 0021041.010.011	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	30-Oct-2017 14:42

MW-05D-20171011

17J0190-05 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270D-SIM
Instrument: NT8

Sampled: 10/11/2017 14:45
Analyzed: 19-Oct-2017 20:38

Sample Preparation:
Preparation Method: EPA 3520C (Liq Liq)
Preparation Batch: BFJ0365
Prepared: 16-Oct-2017
Sample Size: 500 mL
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 %*	*47.7*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14			*10-125 %*	*90.0*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: 0021041.010.011	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	30-Oct-2017 14:42

MW-05D-20171011

17J0190-05 (Water)

Petroleum Hydrocarbons

Method: NWTPH-Dx
Instrument: FID4

Sampled: 10/11/2017 14:45
Analyzed: 21-Oct-2017 00:34

Sample Preparation:	Preparation Method: EPA 3510C SepF	
	Preparation Batch: BFJ0359	Sample Size: 500 mL
	Prepared: 13-Oct-2017	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Silica Gel	
	Cleanup Batch: CFJ0129	Initial Volume: 1 mL
	Cleaned: 20-Oct-2017	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Sulfuric Acid	
	Cleanup Batch: CFJ0128	Initial Volume: 1 mL
	Cleaned: 20-Oct-2017	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 %*	*91.0*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: 0021041.010.011	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	30-Oct-2017 14:42

MW-05D-20171011

17J0190-05 (Water)

Phenols

Method: EPA 8041A
Instrument: ECD8

Sampled: 10/11/2017 14:45
Analyzed: 24-Oct-2017 18:22

Sample Preparation:
Preparation Method: EPA 3510C SepF
Preparation Batch: BFJ0362
Prepared: 17-Oct-2017
Sample Size: 500 mL
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 %*	*46.7*	*%*	
Surrogate: 2,4,6-Tribromophenol [2C]			*26-120 %*	*50.8*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: 0021041.010.011	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	30-Oct-2017 14:42

PZ-13-20171012

17J0190-06 (Water)

Volatile Organic Compounds

Method: NWTPHg
Instrument: NT2

Sampled: 10/12/2017 09:40
Analyzed: 13-Oct-2017 13:25

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BFJ0361 Sample Size: 10 mL
Prepared: 13-Oct-2017 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 %*	*96.3*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*92.1*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: 0021041.010.011	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	30-Oct-2017 14:42

PZ-13-20171012

17J0190-06 (Water)

Semivolatile Organic Compounds

Method: EPA 8270D
Instrument: NT6

Sampled: 10/12/2017 09:40
Analyzed: 19-Oct-2017 20:26

Sample Preparation:
Preparation Method: EPA 3510C SepF
Preparation Batch: BFJ0364
Prepared: 14-Oct-2017
Sample Size: 500 mL
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 %*	*80.2*	*%*	
Surrogate: 2,4,6-Tribromophenol			*49.3-128 %*	*90.1*	*%*	
Surrogate: p-Terphenyl-d14			*60-120 %*	*91.3*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: 0021041.010.011	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	30-Oct-2017 14:42

PZ-13-20171012

17J0190-06 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270D-SIM
Instrument: NT8

Sampled: 10/12/2017 09:40
Analyzed: 19-Oct-2017 21:05

Sample Preparation:
Preparation Method: EPA 3520C (Liq Liq)
Preparation Batch: BFJ0365
Prepared: 16-Oct-2017
Sample Size: 500 mL
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 %*	*60.3*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14			*10-125 %*	*82.1*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: 0021041.010.011	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	30-Oct-2017 14:42

PZ-13-20171012

17J0190-06 (Water)

Petroleum Hydrocarbons

Method: NWTPH-Dx
Instrument: FID4

Sampled: 10/12/2017 09:40
Analyzed: 21-Oct-2017 00:58

Sample Preparation:	Preparation Method: EPA 3510C SepF	
	Preparation Batch: BFJ0359	Sample Size: 500 mL
	Prepared: 13-Oct-2017	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Silica Gel	
	Cleanup Batch: CFJ0129	Initial Volume: 1 mL
	Cleaned: 20-Oct-2017	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Sulfuric Acid	
	Cleanup Batch: CFJ0128	Initial Volume: 1 mL
	Cleaned: 20-Oct-2017	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 %*	*102*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: 0021041.010.011	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	30-Oct-2017 14:42

PZ-13-20171012

17J0190-06 (Water)

Phenols

Method: EPA 8041A
Instrument: ECD8

Sampled: 10/12/2017 09:40
Analyzed: 24-Oct-2017 18:58

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BFJ0362
Prepared: 17-Oct-2017
Sample Size: 500 mL
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 %*	*48.6*	*%*	
Surrogate: 2,4,6-Tribromophenol [2C]			*26-120 %*	*52.6*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: 0021041.010.011	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	30-Oct-2017 14:42

PZ-17-20171011

17J0190-07 (Water)

Volatile Organic Compounds

Method: NWTPHg
Instrument: NT2

Sampled: 10/11/2017 17:10
Analyzed: 13-Oct-2017 13:45

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BFJ0361 Sample Size: 10 mL
Prepared: 13-Oct-2017 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 %*	*96.8*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*95.2*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: 0021041.010.011	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	30-Oct-2017 14:42

PZ-17-20171011

17J0190-07 (Water)

Semivolatile Organic Compounds

Method: EPA 8270D
Instrument: NT6

Sampled: 10/11/2017 17:10
Analyzed: 19-Oct-2017 20:59

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BFJ0364
Prepared: 14-Oct-2017
Sample Size: 500 mL
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	**1.5**	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	**1.4**	ug/L	
Surrogate: 2-Fluorobiphenyl			*54.4-120 %*	*82.0*	*%*	
Surrogate: 2,4,6-Tribromophenol			*49.3-128 %*	*101*	*%*	
Surrogate: p-Terphenyl-d14			*60-120 %*	*91.8*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: 0021041.010.011	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	30-Oct-2017 14:42

PZ-17-20171011

17J0190-07 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270D-SIM
Instrument: NT8

Sampled: 10/11/2017 17:10
Analyzed: 19-Oct-2017 21:31

Sample Preparation:
Preparation Method: EPA 3520C (Liq Liq)
Preparation Batch: BFJ0365
Prepared: 16-Oct-2017
Sample Size: 500 mL
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 %*	*61.8*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14			*10-125 %*	*54.5*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: 0021041.010.011	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	30-Oct-2017 14:42

PZ-17-20171011

17J0190-07 (Water)

Petroleum Hydrocarbons

Method: NWTPH-Dx
Instrument: FID4

Sampled: 10/11/2017 17:10
Analyzed: 21-Oct-2017 01:19

Sample Preparation:	Preparation Method: EPA 3510C SepF	
	Preparation Batch: BFJ0359	Sample Size: 500 mL
	Prepared: 13-Oct-2017	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Silica Gel	
	Cleanup Batch: CFJ0129	Initial Volume: 1 mL
	Cleaned: 20-Oct-2017	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Sulfuric Acid	
	Cleanup Batch: CFJ0128	Initial Volume: 1 mL
	Cleaned: 20-Oct-2017	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 %*	*90.8*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: 0021041.010.011	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	30-Oct-2017 14:42

PZ-17-20171011

17J0190-07 (Water)

Phenols

Method: EPA 8041A
Instrument: ECD8

Sampled: 10/11/2017 17:10
Analyzed: 24-Oct-2017 19:16

Sample Preparation:
Preparation Method: EPA 3510C SepF
Preparation Batch: BFJ0362
Prepared: 17-Oct-2017
Sample Size: 500 mL
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 %*	*53.4*	*%*	
Surrogate: 2,4,6-Tribromophenol [2C]			*26-120 %*	*57.9*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: 0021041.010.011	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	30-Oct-2017 14:42

PZ-18-20171011

17J0190-08 (Water)

Volatile Organic Compounds

Method: NWTPHg
Instrument: NT2

Sampled: 10/11/2017 18:00
Analyzed: 13-Oct-2017 14:06

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BFJ0361 Sample Size: 10 mL
Prepared: 13-Oct-2017 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 %*	*96.6*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*94.7*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: 0021041.010.011	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	30-Oct-2017 14:42

PZ-18-20171011

17J0190-08 (Water)

Semivolatile Organic Compounds

Method: EPA 8270D
Instrument: NT6

Sampled: 10/11/2017 18:00
Analyzed: 19-Oct-2017 21:32

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BFJ0364
Prepared: 14-Oct-2017

Sample Size: 500 mL
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 %*	*74.7*	*%*	
Surrogate: 2,4,6-Tribromophenol			*49.3-128 %*	*89.2*	*%*	
Surrogate: p-Terphenyl-d14			*60-120 %*	*81.1*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: 0021041.010.011	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	30-Oct-2017 14:42

PZ-18-20171011

17J0190-08 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270D-SIM
Instrument: NT8

Sampled: 10/11/2017 18:00
Analyzed: 19-Oct-2017 21:57

Sample Preparation:
Preparation Method: EPA 3520C (Liq Liq)
Preparation Batch: BFJ0365
Prepared: 16-Oct-2017
Sample Size: 500 mL
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 %*	*57.5*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14			*10-125 %*	*79.0*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: 0021041.010.011	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	30-Oct-2017 14:42

PZ-18-20171011

17J0190-08 (Water)

Petroleum Hydrocarbons

Method: NWTPH-Dx
Instrument: FID4

Sampled: 10/11/2017 18:00
Analyzed: 21-Oct-2017 01:43

Sample Preparation:	Preparation Method: EPA 3510C SepF	
	Preparation Batch: BFJ0359	Sample Size: 500 mL
	Prepared: 13-Oct-2017	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Silica Gel	
	Cleanup Batch: CFJ0129	Initial Volume: 1 mL
	Cleaned: 20-Oct-2017	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Sulfuric Acid	
	Cleanup Batch: CFJ0128	Initial Volume: 1 mL
	Cleaned: 20-Oct-2017	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 %*	*78.9*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: 0021041.010.011	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	30-Oct-2017 14:42

PZ-18-20171011

17J0190-08 (Water)

Phenols

Method: EPA 8041A
Instrument: ECD8

Sampled: 10/11/2017 18:00
Analyzed: 24-Oct-2017 19:34

Sample Preparation:
Preparation Method: EPA 3510C SepF
Preparation Batch: BFJ0362
Prepared: 17-Oct-2017
Sample Size: 500 mL
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 %*	*56.1*	*%*	
Surrogate: 2,4,6-Tribromophenol [2C]			*26-120 %*	*60.9*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: 0021041.010.011	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	30-Oct-2017 14:42

PZ-19-20171012

17J0190-09 (Water)

Volatile Organic Compounds

Method: NWTPHg
Instrument: NT2

Sampled: 10/12/2017 10:40
Analyzed: 13-Oct-2017 14:26

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BFJ0361 Sample Size: 10 mL
Prepared: 13-Oct-2017 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 %*	*93.2*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: 0021041.010.011	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	30-Oct-2017 14:42

PZ-19-20171012

17J0190-09 (Water)

Semivolatile Organic Compounds

Method: EPA 8270D
Instrument: NT6

Sampled: 10/12/2017 10:40
Analyzed: 19-Oct-2017 22:05

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BFJ0364
Prepared: 14-Oct-2017

Sample Size: 500 mL
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 %*	*74.2*	*%*	
Surrogate: 2,4,6-Tribromophenol			*49.3-128 %*	*94.8*	*%*	
Surrogate: p-Terphenyl-d14			*60-120 %*	*92.7*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: 0021041.010.011	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	30-Oct-2017 14:42

PZ-19-20171012

17J0190-09 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270D-SIM
Instrument: NT8

Sampled: 10/12/2017 10:40
Analyzed: 19-Oct-2017 22:23

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq)
Preparation Batch: BFJ0365
Prepared: 16-Oct-2017
Sample Size: 500 mL
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 %*	*57.2*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14			*10-125 %*	*82.2*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: 0021041.010.011	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	30-Oct-2017 14:42

PZ-19-20171012

17J0190-09 (Water)

Petroleum Hydrocarbons

Method: NWTPH-Dx
Instrument: FID4

Sampled: 10/12/2017 10:40
Analyzed: 21-Oct-2017 03:12

Sample Preparation:	Preparation Method: EPA 3510C SepF	
	Preparation Batch: BFJ0359	Sample Size: 500 mL
	Prepared: 13-Oct-2017	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Silica Gel	
	Cleanup Batch: CFJ0129	Initial Volume: 1 mL
	Cleaned: 20-Oct-2017	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Sulfuric Acid	
	Cleanup Batch: CFJ0128	Initial Volume: 1 mL
	Cleaned: 20-Oct-2017	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 %*	*84.0*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: 0021041.010.011	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	30-Oct-2017 14:42

PZ-19-20171012

17J0190-09 (Water)

Phenols

Method: EPA 8041A
Instrument: ECD8

Sampled: 10/12/2017 10:40
Analyzed: 24-Oct-2017 19:51

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BFJ0362
Prepared: 17-Oct-2017
Sample Size: 500 mL
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 %*	*45.5*	*%*	
Surrogate: 2,4,6-Tribromophenol [2C]			*26-120 %*	*50.8*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: 0021041.010.011	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	30-Oct-2017 14:42

LW-3-20171011

17J0190-10 (Water)

Volatile Organic Compounds

Method: NWTPHg
Instrument: NT2

Sampled: 10/11/2017 17:20
Analyzed: 13-Oct-2017 14:46

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BFJ0361 Sample Size: 10 mL
Prepared: 13-Oct-2017 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)		1	100	**165**	ug/L	
HC ID: GRO						
Surrogate: Toluene-d8			*80-120 %*	*97.2*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*96.5*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: 0021041.010.011	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	30-Oct-2017 14:42

LW-3-20171011

17J0190-10 (Water)

Semivolatile Organic Compounds

Method: EPA 8270D
Instrument: NT6

Sampled: 10/11/2017 17:20
Analyzed: 19-Oct-2017 22:38

Sample Preparation:
Preparation Method: EPA 3510C SepF
Preparation Batch: BFJ0364
Prepared: 14-Oct-2017
Sample Size: 500 mL
Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	1.0	**2.1**	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	**1.2**	ug/L	
Surrogate: 2-Fluorobiphenyl			*54.4-120 %*	*84.1*	*%*	
Surrogate: 2,4,6-Tribromophenol			*49.3-128 %*	*102*	*%*	
Surrogate: p-Terphenyl-d14			*60-120 %*	*85.2*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
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Edmonds WA, 98020	Project Manager: Christine Kimmel	30-Oct-2017 14:42

LW-3-20171011

17J0190-10 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270D-SIM
Instrument: NT8

Sampled: 10/11/2017 17:20
Analyzed: 19-Oct-2017 22:50

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq)
Preparation Batch: BFJ0365
Prepared: 16-Oct-2017
Sample Size: 500 mL
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 %*	*31.9*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: 0021041.010.011	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	30-Oct-2017 14:42

LW-3-20171011

17J0190-10 (Water)

Petroleum Hydrocarbons

Method: NWTPH-Dx
Instrument: FID4

Sampled: 10/11/2017 17:20
Analyzed: 21-Oct-2017 03:36

Sample Preparation:	Preparation Method: EPA 3510C SepF	
	Preparation Batch: BFJ0359	Sample Size: 500 mL
	Prepared: 13-Oct-2017	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Silica Gel	
	Cleanup Batch: CFJ0129	Initial Volume: 1 mL
	Cleaned: 20-Oct-2017	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Sulfuric Acid	
	Cleanup Batch: CFJ0128	Initial Volume: 1 mL
	Cleaned: 20-Oct-2017	Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)		1	100	**209**	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	**654**	ug/L	
HC ID: CREOSOTE						
Surrogate: o-Terphenyl			*50-150 %*	*94.7*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: 0021041.010.011	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	30-Oct-2017 14:42

LW-3-20171011

17J0190-10 (Water)

Phenols

Method: EPA 8041A
Instrument: ECD8

Sampled: 10/11/2017 17:20
Analyzed: 24-Oct-2017 20:09

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BFJ0362
Prepared: 17-Oct-2017
Sample Size: 500 mL
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 %*	*63.1*	*%*	
Surrogate: 2,4,6-Tribromophenol [2C]			*26-120 %*	*67.7*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: 0021041.010.011	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	30-Oct-2017 14:42

LW-4R-20171011

17J0190-11 (Water)

Volatile Organic Compounds

Method: NWTPHg
Instrument: NT2

Sampled: 10/11/2017 18:15
Analyzed: 13-Oct-2017 15:07

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BFJ0361 Sample Size: 10 mL
Prepared: 13-Oct-2017 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 %*	*96.2*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*93.3*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: 0021041.010.011	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	30-Oct-2017 14:42

LW-4R-20171011

17J0190-11 (Water)

Semivolatile Organic Compounds

Method: EPA 8270D
Instrument: NT6

Sampled: 10/11/2017 18:15
Analyzed: 19-Oct-2017 23:11

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BFJ0364
Prepared: 14-Oct-2017

Sample Size: 500 mL
Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	1.0	**4.2**	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 %*	*78.1*	*%*	
Surrogate: 2,4,6-Tribromophenol			*49.3-128 %*	*91.6*	*%*	
Surrogate: p-Terphenyl-d14			*60-120 %*	*86.1*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: 0021041.010.011	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	30-Oct-2017 14:42

LW-4R-20171011

17J0190-11 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270D-SIM
Instrument: NT8

Sampled: 10/11/2017 18:15
Analyzed: 19-Oct-2017 23:16

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq)
Preparation Batch: BFJ0365
Prepared: 16-Oct-2017
Sample Size: 500 mL
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 %*	*56.7*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14			*10-125 %*	*84.5*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: 0021041.010.011	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	30-Oct-2017 14:42

LW-4R-20171011

17J0190-11 (Water)

Petroleum Hydrocarbons

Method: NWTPH-Dx
Instrument: FID4

Sampled: 10/11/2017 18:15
Analyzed: 21-Oct-2017 03:57

Sample Preparation:	Preparation Method: EPA 3510C SepF	
	Preparation Batch: BFJ0359	Sample Size: 500 mL
	Prepared: 13-Oct-2017	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Silica Gel	
	Cleanup Batch: CFJ0129	Initial Volume: 1 mL
	Cleaned: 20-Oct-2017	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Sulfuric Acid	
	Cleanup Batch: CFJ0128	Initial Volume: 1 mL
	Cleaned: 20-Oct-2017	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 %*	*96.0*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: 0021041.010.011	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	30-Oct-2017 14:42

LW-4R-20171011

17J0190-11 (Water)

Phenols

Method: EPA 8041A
Instrument: ECD8

Sampled: 10/11/2017 18:15
Analyzed: 24-Oct-2017 20:27

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BFJ0362
Prepared: 17-Oct-2017
Sample Size: 500 mL
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 %*	*47.0*	*%*	
Surrogate: 2,4,6-Tribromophenol [2C]			*26-120 %*	*49.9*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
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MW-01S-20171012

17J0190-12 (Water)

Volatile Organic Compounds

Method: NWTPHg
Instrument: NT2

Sampled: 10/12/2017 11:48
Analyzed: 13-Oct-2017 15:30

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BFJ0361 Sample Size: 0.4 mL
Prepared: 13-Oct-2017 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)		1	2500	**33900**	ug/L	
HC ID: GRO						
Surrogate: Toluene-d8			*80-120 %*	*96.2*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*98.4*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: 0021041.010.011	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	30-Oct-2017 14:42

MW-01S-20171012

17J0190-12 (Water)

Semivolatile Organic Compounds

Method: EPA 8270D
Instrument: NT6

Sampled: 10/12/2017 11:48
Analyzed: 19-Oct-2017 23:44

Sample Preparation:
Preparation Method: EPA 3510C SepF
Preparation Batch: BFJ0364
Prepared: 14-Oct-2017
Sample Size: 500 mL
Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	1.0	**4830**	ug/L	E
Acenaphthylene	208-96-8	1	1.0	**7.8**	ug/L	
Acenaphthene	83-32-9	1	1.0	**159**	ug/L	E
2-Methylnaphthalene	91-57-6	1	1.0	**167**	ug/L	E
Dibenzofuran	132-64-9	1	1.0	**76.0**	ug/L	
Fluorene	86-73-7	1	1.0	**95.0**	ug/L	E
Pentachlorophenol	87-86-5	1	10.0	**4540**	ug/L	E
Phenanthrene	85-01-8	1	1.0	**69.3**	ug/L	
Anthracene	120-12-7	1	1.0	**14.5**	ug/L	
Carbazole	86-74-8	1	1.0	**30.3**	ug/L	
Fluoranthene	206-44-0	1	1.0	**16.7**	ug/L	
Pyrene	129-00-0	1	1.0	**7.9**	ug/L	
Benzo(a)anthracene	56-55-3	1	1.0	**1.6**	ug/L	
Chrysene	218-01-9	1	1.0	**1.5**	ug/L	
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	**125**	ug/L	E
Surrogate: 2-Fluorobiphenyl			*54.4-120 %*	*62.6*	*%*	
Surrogate: 2,4,6-Tribromophenol			*49.3-128 %*	*77.3*	*%*	
Surrogate: p-Terphenyl-d14			*60-120 %*	*60.5*	*%*	

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17J0190-12 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270D-SIM
Instrument: NT8

Sampled: 10/12/2017 11:48
Analyzed: 19-Oct-2017 23:43

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq)
Preparation Batch: BFJ0365
Prepared: 16-Oct-2017
Sample Size: 500 mL
Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Benzo(a)anthracene	56-55-3	1	0.10	**1.33**	ug/L	
Chrysene	218-01-9	1	0.10	**1.26**	ug/L	
Benzofluoranthenes, Total		1	0.20	**1.03**	ug/L	
Benzo(a)pyrene	50-32-8	1	0.10	**0.44**	ug/L	
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.10	**0.12**	ug/L	
Dibenzo(a,h)anthracene	53-70-3	1	0.10	ND	ug/L	U
Surrogate: 2-Methylnaphthalene-d10			*31-120 %*	*43.7*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14			*10-125 %*	*51.6*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
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17J0190-12 (Water)

Petroleum Hydrocarbons

Method: NWTPH-Dx
Instrument: FID4

Sampled: 10/12/2017 11:48
Analyzed: 21-Oct-2017 04:21

Sample Preparation:	Preparation Method: EPA 3510C SepF	
	Preparation Batch: BFJ0359	Sample Size: 500 mL
	Prepared: 13-Oct-2017	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Silica Gel	
	Cleanup Batch: CFJ0129	Initial Volume: 1 mL
	Cleaned: 20-Oct-2017	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Sulfuric Acid	
	Cleanup Batch: CFJ0128	Initial Volume: 1 mL
	Cleaned: 20-Oct-2017	Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)		1	100	**8440**	ug/L	E
HC ID: DRO						
Motor Oil Range Organics (C24-C38)		1	200	**774**	ug/L	
HC ID: RRO						
Creosote Range Organics (C12-C22)	8001-58-9	1	200	**33200**	ug/L	E
HC ID: CREOSOTE						
Surrogate: o-Terphenyl			*50-150 %*	*88.4*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
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17J0190-12RE1 (Water)

Semivolatile Organic Compounds

Method: EPA 8270D
Instrument: NT6

Sampled: 10/12/2017 11:48
Analyzed: 20-Oct-2017 13:33

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BFJ0364
Prepared: 14-Oct-2017

Sample Size: 500 mL
Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	50	50.0	**5000**	ug/L	D, E
Acenaphthylene	208-96-8	50	50.0	ND	ug/L	U
Acenaphthene	83-32-9	50	50.0	**255**	ug/L	D
2-Methylnaphthalene	91-57-6	50	50.0	**618**	ug/L	D
Dibenzofuran	132-64-9	50	50.0	**97.8**	ug/L	D
Fluorene	86-73-7	50	50.0	**75.6**	ug/L	D
Pentachlorophenol	87-86-5	50	500	**5510**	ug/L	Q, D
Phenanthrene	85-01-8	50	50.0	**82.2**	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	**418**	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

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17J0190-12RE1 (Water)

Petroleum Hydrocarbons

Method: NWTPH-Dx
Instrument: FID4

Sampled: 10/12/2017 11:48
Analyzed: 24-Oct-2017 13:50

Sample Preparation:	Preparation Method: EPA 3510C SepF	
	Preparation Batch: BFJ0359	Sample Size: 500 mL
	Prepared: 13-Oct-2017	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Silica Gel	
	Cleanup Batch: CFJ0129	Initial Volume: 1 mL
	Cleaned: 20-Oct-2017	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Sulfuric Acid	
	Cleanup Batch: CFJ0128	Initial Volume: 1 mL
	Cleaned: 20-Oct-2017	Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)		10	1000	**10300**	ug/L	D
HC ID: DRO						
Motor Oil Range Organics (C24-C38)		10	2000	ND	ug/L	U
Creosote Range Organics (C12-C22)	8001-58-9	10	2000	**40300**	ug/L	D
HC ID: CREOSOTE						
Surrogate: o-Terphenyl			*50-150 %*	*109*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
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17J0190-12RE2 (Water)

Semivolatile Organic Compounds

Method: EPA 8270D
Instrument: NT6

Sampled: 10/12/2017 11:48
Analyzed: 20-Oct-2017 14:12

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BFJ0364
Prepared: 14-Oct-2017
Sample Size: 500 mL
Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	100	100	**5080**	ug/L	D
Acenaphthylene	208-96-8	100	100	ND	ug/L	U
Acenaphthene	83-32-9	100	100	**270**	ug/L	D
2-Methylnaphthalene	91-57-6	100	100	**657**	ug/L	D
Dibenzofuran	132-64-9	100	100	**103**	ug/L	D
Fluorene	86-73-7	100	100	ND	ug/L	U
Pentachlorophenol	87-86-5	100	1000	**5880**	ug/L	Q, D
Phenanthrene	85-01-8	100	100	ND	ug/L	U
Anthracene	120-12-7	100	100	ND	ug/L	U
Carbazole	86-74-8	100	100	ND	ug/L	U
Fluoranthene	206-44-0	100	100	ND	ug/L	U
Pyrene	129-00-0	100	100	ND	ug/L	U
Benzo(a)anthracene	56-55-3	100	100	ND	ug/L	U
Chrysene	218-01-9	100	100	ND	ug/L	U
Benzo(a)pyrene	50-32-8	100	100	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	100	100	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	100	100	ND	ug/L	U
Benzo(g,h,i)perylene	191-24-2	100	100	ND	ug/L	U
1-Methylnaphthalene	90-12-0	100	100	**442**	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	
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Edmonds WA, 98020	Project Manager: Christine Kimmel	30-Oct-2017 14:42

MW-02S-20171011

17J0190-13 (Water)

Volatile Organic Compounds

Method: NWTPHg
Instrument: NT2

Sampled: 10/11/2017 15:05
Analyzed: 13-Oct-2017 15:50

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BFJ0361 Sample Size: 10 mL
Prepared: 13-Oct-2017 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 %*	*98.4*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*94.0*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
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17J0190-13 (Water)

Semivolatile Organic Compounds

Method: EPA 8270D
Instrument: NT6

Sampled: 10/11/2017 15:05
Analyzed: 20-Oct-2017 00:17

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BFJ0364
Prepared: 14-Oct-2017
Sample Size: 500 mL
Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	1.0	**2.8**	ug/L	
Acenaphthylene	208-96-8	1	1.0	ND	ug/L	U
Acenaphthene	83-32-9	1	1.0	**1.9**	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 %*	*84.0*	*%*	
Surrogate: 2,4,6-Tribromophenol			*49.3-128 %*	*100*	*%*	
Surrogate: p-Terphenyl-d14			*60-120 %*	*90.4*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
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17J0190-13 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270D-SIM
Instrument: NT8

Sampled: 10/11/2017 15:05
Analyzed: 20-Oct-2017 00:09

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq)
Preparation Batch: BFJ0365
Prepared: 16-Oct-2017
Sample Size: 500 mL
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 %*	*54.7*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14			*10-125 %*	*23.9*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
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17J0190-13 (Water)

Petroleum Hydrocarbons

Method: NWTPH-Dx
Instrument: FID4

Sampled: 10/11/2017 15:05
Analyzed: 21-Oct-2017 04:42

Sample Preparation:	Preparation Method: EPA 3510C SepF	
	Preparation Batch: BFJ0359	Sample Size: 500 mL
	Prepared: 13-Oct-2017	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Silica Gel	
	Cleanup Batch: CFJ0129	Initial Volume: 1 mL
	Cleaned: 20-Oct-2017	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Sulfuric Acid	
	Cleanup Batch: CFJ0128	Initial Volume: 1 mL
	Cleaned: 20-Oct-2017	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 %*	*97.5*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
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17J0190-13 (Water)

Phenols

Method: EPA 8041A
Instrument: ECD8

Sampled: 10/11/2017 15:05
Analyzed: 27-Oct-2017 14:42

Sample Preparation:
Preparation Method: EPA 3510C SepF
Preparation Batch: BFJ0362
Prepared: 17-Oct-2017
Sample Size: 500 mL
Final Volume: 50 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Pentachlorophenol	87-86-5	1	0.25	**0.36**	ug/L	
Surrogate: 2,4,6-Tribromophenol			*26-120 %*	*52.7*	*%*	
Surrogate: 2,4,6-Tribromophenol [2C]			*26-120 %*	*57.2*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
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Edmonds WA, 98020	Project Manager: Christine Kimmel	30-Oct-2017 14:42

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17J0190-14 (Water)

Volatile Organic Compounds

Method: NWTPHg
Instrument: NT2

Sampled: 10/11/2017 13:15
Analyzed: 13-Oct-2017 16:10

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BFJ0361 Sample Size: 10 mL
Prepared: 13-Oct-2017 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 %*	*93.6*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
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17J0190-14 (Water)

Semivolatile Organic Compounds

Method: EPA 8270D
Instrument: NT6

Sampled: 10/11/2017 13:15
Analyzed: 20-Oct-2017 00:50

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BFJ0364
Prepared: 14-Oct-2017

Sample Size: 500 mL
Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	1.0	**9.7**	ug/L	
Acenaphthylene	208-96-8	1	1.0	ND	ug/L	U
Acenaphthene	83-32-9	1	1.0	**9.1**	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 %*	*77.9*	*%*	
Surrogate: 2,4,6-Tribromophenol			*49.3-128 %*	*95.4*	*%*	
Surrogate: p-Terphenyl-d14			*60-120 %*	*85.4*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
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MW-05S-20171011

17J0190-14 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270D-SIM
Instrument: NT8

Sampled: 10/11/2017 13:15
Analyzed: 20-Oct-2017 00:35

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq)
Preparation Batch: BFJ0365
Prepared: 16-Oct-2017
Sample Size: 500 mL
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 %*	*67.2*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14			*10-125 %*	*78.9*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: 0021041.010.011	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	30-Oct-2017 14:42

MW-05S-20171011

17J0190-14 (Water)

Petroleum Hydrocarbons

Method: NWTPH-Dx
Instrument: FID4

Sampled: 10/11/2017 13:15
Analyzed: 21-Oct-2017 05:06

Sample Preparation:	Preparation Method: EPA 3510C SepF	
	Preparation Batch: BFJ0359	Sample Size: 500 mL
	Prepared: 13-Oct-2017	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Silica Gel	
	Cleanup Batch: CFJ0129	Initial Volume: 1 mL
	Cleaned: 20-Oct-2017	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Sulfuric Acid	
	Cleanup Batch: CFJ0128	Initial Volume: 1 mL
	Cleaned: 20-Oct-2017	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 %*	*82.6*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: 0021041.010.011	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	30-Oct-2017 14:42

MW-05S-20171011

17J0190-14 (Water)

Phenols

Method: EPA 8041A
Instrument: ECD8

Sampled: 10/11/2017 13:15
Analyzed: 24-Oct-2017 20:45

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BFJ0362
Prepared: 17-Oct-2017
Sample Size: 500 mL
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 %*	*53.5*	*%*	
Surrogate: 2,4,6-Tribromophenol [2C]			*26-120 %*	*53.8*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: 0021041.010.011	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	30-Oct-2017 14:42

PZ-30-20171011

17J0190-15 (Water)

Volatile Organic Compounds

Method: NWTPHg
Instrument: NT2

Sampled: 10/11/2017 13:20
Analyzed: 13-Oct-2017 16:30

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BFJ0361 Sample Size: 10 mL
Prepared: 13-Oct-2017 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 %*	*94.7*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: 0021041.010.011	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	30-Oct-2017 14:42

PZ-30-20171011

17J0190-15 (Water)

Semivolatile Organic Compounds

Method: EPA 8270D
Instrument: NT6

Sampled: 10/11/2017 13:20
Analyzed: 20-Oct-2017 01:23

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BFJ0364
Prepared: 14-Oct-2017

Sample Size: 500 mL
Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	1.0	**10.6**	ug/L	
Acenaphthylene	208-96-8	1	1.0	ND	ug/L	U
Acenaphthene	83-32-9	1	1.0	**9.1**	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 %*	*76.0*	*%*	
Surrogate: 2,4,6-Tribromophenol			*49.3-128 %*	*93.8*	*%*	
Surrogate: p-Terphenyl-d14			*60-120 %*	*87.0*	*%*	

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130 2nd Avenue S.	Project Number: 0021041.010.011	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	30-Oct-2017 14:42

PZ-30-20171011

17J0190-15 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270D-SIM
Instrument: NT8

Sampled: 10/11/2017 13:20
Analyzed: 20-Oct-2017 01:02

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq)
Preparation Batch: BFJ0365
Prepared: 16-Oct-2017
Sample Size: 500 mL
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 %*	*61.2*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14			*10-125 %*	*73.4*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: 0021041.010.011	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	30-Oct-2017 14:42

PZ-30-20171011

17J0190-15 (Water)

Petroleum Hydrocarbons

Method: NWTPH-Dx
Instrument: FID4

Sampled: 10/11/2017 13:20
Analyzed: 21-Oct-2017 05:27

Sample Preparation:	Preparation Method: EPA 3510C SepF	
	Preparation Batch: BFJ0359	Sample Size: 500 mL
	Prepared: 13-Oct-2017	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Silica Gel	
	Cleanup Batch: CFJ0129	Initial Volume: 1 mL
	Cleaned: 20-Oct-2017	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Sulfuric Acid	
	Cleanup Batch: CFJ0128	Initial Volume: 1 mL
	Cleaned: 20-Oct-2017	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 %*	*93.3*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: 0021041.010.011	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	30-Oct-2017 14:42

PZ-30-20171011

17J0190-15 (Water)

Phenols

Method: EPA 8041A
Instrument: ECD8

Sampled: 10/11/2017 13:20
Analyzed: 24-Oct-2017 21:03

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BFJ0362
Prepared: 17-Oct-2017
Sample Size: 500 mL
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 %*	*56.2*	*%*	
Surrogate: 2,4,6-Tribromophenol [2C]			*26-120 %*	*60.6*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: 0021041.010.011	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	30-Oct-2017 14:42

PZ-12-20171012

17J0190-16 (Water)

Volatile Organic Compounds

Method: NWTPHg
Instrument: NT2

Sampled: 10/12/2017 09:25
Analyzed: 13-Oct-2017 16:50

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BFJ0361 Sample Size: 10 mL
Prepared: 13-Oct-2017 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 %*	*97.3*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*93.7*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: 0021041.010.011	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	30-Oct-2017 14:42

PZ-12-20171012

17J0190-16 (Water)

Semivolatile Organic Compounds

Method: EPA 8270D
Instrument: NT6

Sampled: 10/12/2017 09:25
Analyzed: 20-Oct-2017 01:57

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BFJ0364
Prepared: 14-Oct-2017

Sample Size: 500 mL
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 %*	*72.0*	*%*	
Surrogate: 2,4,6-Tribromophenol			*49.3-128 %*	*90.0*	*%*	
Surrogate: p-Terphenyl-d14			*60-120 %*	*83.6*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: 0021041.010.011	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	30-Oct-2017 14:42

PZ-12-20171012

17J0190-16 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270D-SIM
Instrument: NT8

Sampled: 10/12/2017 09:25
Analyzed: 20-Oct-2017 01:28

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq)
Preparation Batch: BFJ0365
Prepared: 16-Oct-2017
Sample Size: 500 mL
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 %*	*57.1*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14			*10-125 %*	*86.7*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: 0021041.010.011	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	30-Oct-2017 14:42

PZ-12-20171012

17J0190-16 (Water)

Petroleum Hydrocarbons

Method: NWTPH-Dx
Instrument: FID4

Sampled: 10/12/2017 09:25
Analyzed: 21-Oct-2017 05:51

Sample Preparation:	Preparation Method: EPA 3510C SepF	
	Preparation Batch: BFJ0359	Sample Size: 500 mL
	Prepared: 13-Oct-2017	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Silica Gel	
	Cleanup Batch: CFJ0129	Initial Volume: 1 mL
	Cleaned: 20-Oct-2017	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Sulfuric Acid	
	Cleanup Batch: CFJ0128	Initial Volume: 1 mL
	Cleaned: 20-Oct-2017	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 %*	*96.8*	*%*	

Analytical Report

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: 0021041.010.011	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	30-Oct-2017 14:42

PZ-12-20171012

17J0190-16 (Water)

Phenols

Method: EPA 8041A
Instrument: ECD8

Sampled: 10/12/2017 09:25
Analyzed: 24-Oct-2017 21:21

Sample Preparation:
Preparation Method: EPA 3510C SepF
Preparation Batch: BFJ0362
Prepared: 17-Oct-2017
Sample Size: 500 mL
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 %*	*48.6*	*%*	
Surrogate: 2,4,6-Tribromophenol [2C]			*26-120 %*	*53.0*	*%*	

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: 0021041.010.011	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	30-Oct-2017 14:42

Volatile Organic Compounds - Quality Control

Batch BFJ0361 - EPA 5030 (Purge and Trap)

Instrument: NT2 Analyst: PC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BFJ0361-BLK1)				Prepared: 13-Oct-2017 Analyzed: 13-Oct-2017 11:24						
Gasoline Range Organics (Tol-Nap)	ND	100	ug/L							U
Surrogate: Toluene-d8	4.78		ug/L	*5.00*		*95.7*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.68		ug/L	*5.00*		*93.6*	*80-120*			
LCS (BFJ0361-BS1)				Prepared: 13-Oct-2017 Analyzed: 13-Oct-2017 10:03						
Gasoline Range Organics (Tol-Nap)	1120	100	ug/L	1000		112	72-128			
Surrogate: Toluene-d8	4.84		ug/L	*5.00*		*96.9*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.65		ug/L	*5.00*		*93.0*	*80-120*			
LCS Dup (BFJ0361-BSD1)				Prepared: 13-Oct-2017 Analyzed: 13-Oct-2017 10:23						
Gasoline Range Organics (Tol-Nap)	1130	100	ug/L	1000		113	72-128	1.03	30	
Surrogate: Toluene-d8	4.83		ug/L	*5.00*		*96.5*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.80		ug/L	*5.00*		*96.0*	*80-120*			

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: 0021041.010.011	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	30-Oct-2017 14:42

Semivolatile Organic Compounds - Quality Control

Batch BFJ0364 - EPA 3510C SepF

Instrument: NT6 Analyst: JZ

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BFJ0364-BLK1)	Prepared: 14-Oct-2017 Analyzed: 19-Oct-2017 16:34									
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	20.3		ug/L	*25.0*		*81.1*	*54.4-120*			
Surrogate: 2,4,6-Tribromophenol	34.3		ug/L	*37.5*		*91.6*	*49.3-128*			
Surrogate: p-Terphenyl-d14	23.4		ug/L	*25.0*		*93.8*	*60-120*			
LCS (BFJ0364-BS1)	Prepared: 14-Oct-2017 Analyzed: 19-Oct-2017 17:08									
Naphthalene	18.3	1.0	ug/L	25.0		73.2	51.9-120			
Acenaphthylene	20.1	1.0	ug/L	25.0		80.5	56.5-120			
Acenaphthene	22.0	1.0	ug/L	25.0		87.8	60.9-120			
2-Methylnaphthalene	18.3	1.0	ug/L	25.0		73.2	56.5-120			
Dibenzofuran	20.9	1.0	ug/L	25.0		83.5	61.9-120			
Fluorene	22.1	1.0	ug/L	25.0		88.3	62.3-120			
Pentachlorophenol	73.9	10.0	ug/L	75.0		98.6	40.7-124			
Phenanthrene	22.1	1.0	ug/L	25.0		88.4	61-120			
Anthracene	20.5	1.0	ug/L	25.0		81.8	64.6-120			
Carbazole	21.4	1.0	ug/L	25.0		85.5	64.6-120			
Fluoranthene	22.9	1.0	ug/L	25.0		91.4	67.9-120			

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: 0021041.010.011	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	30-Oct-2017 14:42

Semivolatile Organic Compounds - Quality Control

Batch BFJ0364 - EPA 3510C SepF

Instrument: NT6 Analyst: JZ

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BFJ0364-BS1)				Prepared: 14-Oct-2017 Analyzed: 19-Oct-2017 17:08						
Pyrene	22.9	1.0	ug/L	25.0		91.4	66.4-120			
Benzo(a)anthracene	21.6	1.0	ug/L	25.0		86.3	65.9-120			
Chrysene	22.5	1.0	ug/L	25.0		90.0	61.5-120			
Benzo(a)pyrene	23.9	1.0	ug/L	25.0		95.7	74-121			
Indeno(1,2,3-cd)pyrene	23.6	1.0	ug/L	25.0		94.4	55.6-120			
Dibenzo(a,h)anthracene	24.8	1.0	ug/L	25.0		99.2	55-120			
Benzo(g,h,i)perylene	23.4	1.0	ug/L	25.0		93.4	49.4-120			
1-Methylnaphthalene	20.7	1.0	ug/L	25.0		82.6	54.4-120			
Surrogate: 2-Fluorobiphenyl	21.6		ug/L	*25.0*		*86.3*	*54.4-120*			
Surrogate: 2,4,6-Tribromophenol	39.3		ug/L	*37.5*		*105*	*49.3-128*			
Surrogate: p-Terphenyl-d14	24.0		ug/L	*25.0*		*95.9*	*60-120*			
LCS Dup (BFJ0364-BSD1)				Prepared: 14-Oct-2017 Analyzed: 19-Oct-2017 17:41						
Naphthalene	19.6	1.0	ug/L	25.0		78.3	51.9-120	6.76	30	
Acenaphthylene	21.0	1.0	ug/L	25.0		83.9	56.5-120	4.11	30	
Acenaphthene	22.6	1.0	ug/L	25.0		90.4	60.9-120	2.88	30	
2-Methylnaphthalene	19.3	1.0	ug/L	25.0		77.0	56.5-120	5.14	30	
Dibenzofuran	21.6	1.0	ug/L	25.0		86.5	61.9-120	3.52	30	
Fluorene	22.7	1.0	ug/L	25.0		91.0	62.3-120	2.97	30	
Pentachlorophenol	77.2	10.0	ug/L	75.0		103	40.7-124	4.34	30	
Phenanthrene	22.9	1.0	ug/L	25.0		91.4	61-120	3.34	30	
Anthracene	21.1	1.0	ug/L	25.0		84.4	64.6-120	3.14	30	
Carbazole	21.9	1.0	ug/L	25.0		87.7	64.6-120	2.45	30	
Fluoranthene	23.9	1.0	ug/L	25.0		95.5	67.9-120	4.37	30	
Pyrene	23.6	1.0	ug/L	25.0		94.4	66.4-120	3.20	30	
Benzo(a)anthracene	22.9	1.0	ug/L	25.0		91.8	65.9-120	6.13	30	
Chrysene	23.2	1.0	ug/L	25.0		92.7	61.5-120	2.93	30	
Benzo(a)pyrene	24.8	1.0	ug/L	25.0		99.0	74-121	3.48	30	
Indeno(1,2,3-cd)pyrene	24.6	1.0	ug/L	25.0		98.2	55.6-120	3.97	30	
Dibenzo(a,h)anthracene	25.6	1.0	ug/L	25.0		102	55-120	3.20	30	
Benzo(g,h,i)perylene	24.1	1.0	ug/L	25.0		96.6	49.4-120	3.31	30	
1-Methylnaphthalene	21.4	1.0	ug/L	25.0		85.5	54.4-120	3.42	30	
Surrogate: 2-Fluorobiphenyl	22.2		ug/L	*25.0*		*88.9*	*54.4-120*			
Surrogate: 2,4,6-Tribromophenol	39.2		ug/L	*37.5*		*105*	*49.3-128*			

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: 0021041.010.011	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	30-Oct-2017 14:42

Semivolatile Organic Compounds - Quality Control

Batch BFJ0364 - EPA 3510C SepF

Instrument: NT6 Analyst: JZ

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BFJ0364-BSD1)				Prepared: 14-Oct-2017 Analyzed: 19-Oct-2017 17:41						
Surrogate: p-Terphenyl-d14	24.5		ug/L	*25.0*		*98.1*	*60-120*			

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: 0021041.010.011	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	30-Oct-2017 14:42

Semivolatile Organic Compounds - SIM - Quality Control

Batch BFJ0365 - 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 (BFJ0365-BLK1)				Prepared: 16-Oct-2017 Analyzed: 19-Oct-2017 18:00						
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	2.00		ug/L	*3.00*		*66.6*	*31-120*			
Surrogate: Dibenzo[a,h]anthracene-d14	3.15		ug/L	*3.00*		*105*	*10-125*			
LCS (BFJ0365-BS1)				Prepared: 16-Oct-2017 Analyzed: 19-Oct-2017 18:27						
Benzo(a)anthracene	2.24	0.10	ug/L	3.00		74.6	37-120			
Chrysene	2.39	0.10	ug/L	3.00		79.8	48-120			
Benzofluoranthenes, Total	10.3	0.20	ug/L	9.00		114	46-120			
Benzo(a)pyrene	2.07	0.10	ug/L	3.00		69.1	25-120			
Indeno(1,2,3-cd)pyrene	2.82	0.10	ug/L	3.00		94.0	32-120			
Dibenzo(a,h)anthracene	2.27	0.10	ug/L	3.00		75.7	21-120			
Surrogate: 2-Methylnaphthalene-d10	1.62		ug/L	*3.00*		*54.1*	*31-120*			
Surrogate: Dibenzo[a,h]anthracene-d14	2.51		ug/L	*3.00*		*83.8*	*10-125*			
LCS Dup (BFJ0365-BSD1)				Prepared: 16-Oct-2017 Analyzed: 19-Oct-2017 18:53						
Benzo(a)anthracene	2.19	0.10	ug/L	3.00		73.0	37-120	2.20	30	
Chrysene	2.29	0.10	ug/L	3.00		76.3	48-120	4.51	30	
Benzofluoranthenes, Total	9.41	0.20	ug/L	9.00		105	46-120	9.00	30	
Benzo(a)pyrene	2.01	0.10	ug/L	3.00		67.1	25-120	2.98	30	
Indeno(1,2,3-cd)pyrene	2.61	0.10	ug/L	3.00		87.2	32-120	7.57	30	
Dibenzo(a,h)anthracene	2.23	0.10	ug/L	3.00		74.2	21-120	1.92	30	
Surrogate: 2-Methylnaphthalene-d10	1.91		ug/L	*3.00*		*63.8*	*31-120*			
Surrogate: Dibenzo[a,h]anthracene-d14	2.44		ug/L	*3.00*		*81.4*	*10-125*			

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: 0021041.010.011	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	30-Oct-2017 14:42

Petroleum Hydrocarbons - Quality Control

Batch BFJ0359 - EPA 3510C SepF

Instrument: FID4 Analyst: ML

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BFJ0359-BLK1)				Prepared: 13-Oct-2017 Analyzed: 20-Oct-2017 21:13						
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	413		ug/L	*450*		*91.8*	*50-150*			
LCS (BFJ0359-BS1)				Prepared: 13-Oct-2017 Analyzed: 20-Oct-2017 21:34						
Diesel Range Organics (C12-C24)	2420	100	ug/L	3000		80.6	56-120			
Surrogate: o-Terphenyl	436		ug/L	*450*		*96.9*	*50-150*			
LCS Dup (BFJ0359-BSD1)				Prepared: 13-Oct-2017 Analyzed: 20-Oct-2017 21:58						
Diesel Range Organics (C12-C24)	2570	100	ug/L	3000		85.7	56-120	6.11	30	
Surrogate: o-Terphenyl	443		ug/L	*450*		*98.4*	*50-150*			

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: 0021041.010.011	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	30-Oct-2017 14:42

Phenols - Quality Control

Batch BFJ0362 - 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 (BFJ0362-BLK1)				Prepared: 17-Oct-2017 Analyzed: 24-Oct-2017 16:35						
Pentachlorophenol	ND	0.25	ug/L							U
Surrogate: 2,4,6-Tribromophenol		0.794	ug/L	*2.50*		*31.8*	*26-120*			
Surrogate: 2,4,6-Tribromophenol [2C]		0.949	ug/L	*2.50*		*38.0*	*26-120*			
LCS (BFJ0362-BS1)				Prepared: 17-Oct-2017 Analyzed: 24-Oct-2017 16:53						
Pentachlorophenol	1.21	0.25	ug/L	2.50		48.6	48-120			
Surrogate: 2,4,6-Tribromophenol		1.21	ug/L	*2.50*		*48.3*	*26-120*			
Surrogate: 2,4,6-Tribromophenol [2C]		1.41	ug/L	*2.50*		*56.3*	*26-120*			
LCS Dup (BFJ0362-BSD1)				Prepared: 17-Oct-2017 Analyzed: 24-Oct-2017 17:11						
Pentachlorophenol	1.37	0.25	ug/L	2.50		54.6	48-120	12.40	30	
Surrogate: 2,4,6-Tribromophenol		1.24	ug/L	*2.50*		*49.5*	*26-120*			
Surrogate: 2,4,6-Tribromophenol [2C]		1.43	ug/L	*2.50*		*57.2*	*26-120*			

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: 0021041.010.011	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	30-Oct-2017 14:42

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 (C10-24)	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	UST-033	09/01/2017
CALAP	California Department of Public Health CAELAP	2748	02/28/2018
DoD-ELAP	DoD-Environmental Laboratory Accreditation Program	66169	02/07/2019
NELAP	ORELAP - Oregon Laboratory Accreditation Program	WA100006	05/11/2018
WADOE	WA Dept of Ecology	C558	06/30/2018
WA-DW	Ecology - Drinking Water	C558	06/30/2018

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Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: 0021041.010.011	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	30-Oct-2017 14:42

Notes and Definitions

U	This analyte is not detected above the applicable reporting or detection limit.
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)
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL)
D1	Surrogate was not detected due to sample extract dilution
D	The reported value is from a dilution
*	Flagged value is not within established control limits.
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

27 March 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)
18C0203	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.

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.

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PJLA Testing
Accreditation # 66169

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Chain-of-Custody Record

Date 3/9/18

Page 1 of 1

18C0203

Project Name Port of Olympia Project No. 0021041.010.011

Project Location/Event Cascade Pole, Wet Season

Sampler's Name SMM, KMG, KAM

Project Contact Chris Kimmel

Send Results To CKimmel, DBache, DJorgensen

Testing Parameters

Sample I.D.	Date	Time	Matrix	No. of Containers	NWTPH-Gx	NWTPH-Dx + creosote	PAHs	cPAHs SIM	PCP (8270)	PCP (8041)
Trip Blank-20180308	—	—	H2O	2	X					
MW-05S-20180308	3/8/18	1241		10	X	X	X	X	X	X
PZ-30-20180308		1245		10	X	X	X	X	X	X
PZ-18-20180308		1634		10	X	X	X	X	X	X
PZ-17-20180308		1726		10	X	X	X	X	X	X
CW-13-20180308		1250		10	X	X	X	X	X	X
MW-05D-20180308		1355		10	X	X	X	X	X	X
LW-3-20180308		1703		10	X	X	X	X	X	X
LW-4R-20180308		1551		10	X	X	X	X	X	X
MW-02S-20180308		1419		10	X	X	X	X	X	X
MW-02D-20180308		1500		10	X	X	X	X	X	X
PZ-19-20180309	3/9/18	924		10	X	X	X	X	X	X
PZ-12-20180309		945		10	X	X	X	X	X	X
PZ-13-20180309		1024		10	X	X	X	X	X	X
MW-01D-20180309		1116		10	X	X	X	X	X	X
MW-01S-20180309		1115		10	X	X	X	X	X	X

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

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 8 coolers w/ ice

Method of Shipment Courier

Relinquished by	Received by	Relinquished by	Received by
Signature Katie M. Gaugler	Signature	Signature	Signature
Printed Name Katie Gaugler	Printed Name Brandon Fisk	Printed Name	Printed Name
Company Landau Associates	Company ARI	Company	Company
Date 3/9/2018 Time 15:25	Date 3/9/18 Time 1525	Date Time	Date Time

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

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	27-Mar-2018 14:33

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Trip Blanks-20180308	18C0203-01	Water	08-Mar-2018 12:41	09-Mar-2018 15:25
MW-05S-20180308	18C0203-02	Water	08-Mar-2018 12:41	09-Mar-2018 15:25
PZ-30-20180308	18C0203-03	Water	08-Mar-2018 12:45	09-Mar-2018 15:25
PZ-18-20180308	18C0203-04	Water	08-Mar-2018 16:34	09-Mar-2018 15:25
PZ-17-20180308	18C0203-05	Water	08-Mar-2018 17:26	09-Mar-2018 15:25
CW-13-20180308	18C0203-06	Water	08-Mar-2018 12:50	09-Mar-2018 15:25
MW-05D-20180308	18C0203-07	Water	08-Mar-2018 13:55	09-Mar-2018 15:25
LW-3-20180308	18C0203-08	Water	08-Mar-2018 17:03	09-Mar-2018 15:25
LW-4R-20180308	18C0203-09	Water	08-Mar-2018 15:51	09-Mar-2018 15:25
MW-02S-20180308	18C0203-10	Water	08-Mar-2018 14:19	09-Mar-2018 15:25
MW-02D-20180308	18C0203-11	Water	08-Mar-2018 15:00	09-Mar-2018 15:25
PZ-19-20180309	18C0203-12	Water	09-Mar-2018 09:24	09-Mar-2018 15:25
PZ-12-20180309	18C0203-13	Water	09-Mar-2018 09:45	09-Mar-2018 15:25
PZ-13-20180309	18C0203-14	Water	09-Mar-2018 10:24	09-Mar-2018 15:25
MW-01D-20180309	18C0203-15	Water	09-Mar-2018 11:16	09-Mar-2018 15:25
MW-01S-20180309	18C0203-16	Water	09-Mar-2018 11:15	09-Mar-2018 15:25

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	27-Mar-2018 14:33

Case Narrative

Chlorinated Phenols - EPA Method SW8041A

Per the COC instructions samples were allowed to settle and sample aliquot was collected from the clear portion.

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.

Sample 18C0203-16 did not require this analysis.

Semivolatiles - EPA Method SW8270D

Per the COC instructions samples were allowed to settle and sample aliquot was collected from the clear portion.

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 p-terphenyl-d14 which is outside of the control limits high in the LCS. All of the LCS percent recoveries are in control and no further action was taken.

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

The LCS/ LCSD percent recoveries were within control limits.

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

Per the COC instructions samples were allowed to settle and sample aliquot was collected from the clear portion.

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

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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	27-Mar-2018 14:33

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.

Gasoline Range Organics - WA-Ecology Method NW-TPHG

The analyst noted that samples 18C0203-01, 03, 08 and 15 contained peabubbles at the time of analysis and samples 18C0203-04, 05, 09 and 10 contained large bubbles.

The sample(s) were run 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.

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WORK ORDER

18C0203

Client: Landau Associates, Inc.	**Project Manager: Kelly Bottem**
Project: Cascade Pole	**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:	26-Mar-2018 18:00 (10 day TAT)		
Received By:	Brandon Fisk	Date Received:	09-Mar-2018 15:25
Logged In By:	Jacob Walter	Date Logged In:	10-Mar-2018 09:15

Samples Received at: **5.7°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		

Reviewed By

Date

WORK ORDER

18C0203

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

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

Analysis	Due	TAT	Expires	Comments
18C0203-01 Trip Blanks-20180308 [Water] Sampled 08-Mar-2018 12:41				Some samples may be hot.
8260C Gas (NWTPH)	03/26/2018	10	3/22/2018	Trip Blanks
18C0203-02 MW-05S-20180308 [Water] Sampled 08-Mar-2018 12:41				SIM cPAHs only. Some samples may be hot.
8270D-SIM PAH (0.1 ug/L or 5 ug/kg)	03/26/2018	10	3/15/2018	
TPH NW (Extractables) low level	03/26/2018	10	3/15/2018	
8270D SVOC (1-20 ug/L SepF)	03/26/2018	10	3/15/2018	
8260C Gas (NWTPH)	03/26/2018	10	3/22/2018	
8041A Chlorinated Phenols	03/26/2018	10	3/15/2018	
18C0203-03 PZ-30-20180308 [Water] Sampled 08-Mar-2018 12:45				PAHs plus PCP. Some samples may be hot.
8270D SVOC (1-20 ug/L SepF)	03/26/2018	10	3/15/2018	
8041A Chlorinated Phenols	03/26/2018	10	3/15/2018	
8270D-SIM PAH (0.1 ug/L or 5 ug/kg)	03/26/2018	10	3/15/2018	
TPH NW (Extractables) low level	03/26/2018	10	3/15/2018	
8260C Gas (NWTPH)	03/26/2018	10	3/22/2018	
18C0203-04 PZ-18-20180308 [Water] Sampled 08-Mar-2018 16:34				PAHs plus PCP. Some samples may be hot.
8270D SVOC (1-20 ug/L SepF)	03/26/2018	10	3/15/2018	
TPH NW (Extractables) low level	03/26/2018	10	3/15/2018	
8270D-SIM PAH (0.1 ug/L or 5 ug/kg)	03/26/2018	10	3/15/2018	
8260C Gas (NWTPH)	03/26/2018	10	3/22/2018	
8041A Chlorinated Phenols	03/26/2018	10	3/15/2018	
18C0203-05 PZ-17-20180308 [Water] Sampled 08-Mar-2018 17:26				Onlly run PCP if PCP 8270 is ND. Some samples may be hot.
8041A Chlorinated Phenols	03/26/2018	10	3/15/2018	
TPH NW (Extractables) low level	03/26/2018	10	3/15/2018	
8270D-SIM PAH (0.1 ug/L or 5 ug/kg)	03/26/2018	10	3/15/2018	
8270D SVOC (1-20 ug/L SepF)	03/26/2018	10	3/15/2018	
8260C Gas (NWTPH)	03/26/2018	10	3/22/2018	
18C0203-06 CW-13-20180308 [Water] Sampled 08-Mar-2018 12:50				Onlly run PCP if PCP 8270 is ND. Some samples may be hot.
8041A Chlorinated Phenols	03/26/2018	10	3/15/2018	
8260C Gas (NWTPH)	03/26/2018	10	3/22/2018	
8270D SVOC (1-20 ug/L SepF)	03/26/2018	10	3/15/2018	
8270D-SIM PAH (0.1 ug/L or 5 ug/kg)	03/26/2018	10	3/15/2018	
TPH NW (Extractables) low level	03/26/2018	10	3/15/2018	
18C0203-07 MW-05D-20180308 [Water] Sampled 08-Mar-2018 13:55				SIM cPAHs only. Some samples may be hot.
8270D-SIM PAH (0.1 ug/L or 5 ug/kg)	03/26/2018	10	3/15/2018	
8260C Gas (NWTPH)	03/26/2018	10	3/22/2018	
8270D SVOC (1-20 ug/L SepF)	03/26/2018	10	3/15/2018	
8041A Chlorinated Phenols	03/26/2018	10	3/15/2018	
TPH NW (Extractables) low level	03/26/2018	10	3/15/2018	

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WORK ORDER

18C0203

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

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

Analysis	Due	TAT	Expires	Comments
18C0203-08 LW-3-20180308 [Water] Sampled 08-Mar-2018 17:03				Onlly run PCP if PCP 8270 is ND. Some samples may be hot.
8041A Chlorinated Phenols	03/26/2018	10	3/15/2018	
8260C Gas (NWTPH)	03/26/2018	10	3/22/2018	
TPH NW (Extractables) low level	03/26/2018	10	3/15/2018	
8270D SVOC (1-20 ug/L SepF)	03/26/2018	10	3/15/2018	
8270D-SIM PAH (0.1 ug/L or 5 ug/kg)	03/26/2018	10	3/15/2018	
18C0203-09 LW-4R-20180308 [Water] Sampled 08-Mar-2018 15:51				PAHs plus PCP. Some samples may be hot.
8270D SVOC (1-20 ug/L SepF)	03/26/2018	10	3/15/2018	
8041A Chlorinated Phenols	03/26/2018	10	3/15/2018	
8260C Gas (NWTPH)	03/26/2018	10	3/22/2018	
8270D-SIM PAH (0.1 ug/L or 5 ug/kg)	03/26/2018	10	3/15/2018	
TPH NW (Extractables) low level	03/26/2018	10	3/15/2018	
18C0203-10 MW-02S-20180308 [Water] Sampled 08-Mar-2018 14:19				Plus Creosote, Acid cleaned. Some samples may be hot.
TPH NW (Extractables) low level	03/26/2018	10	3/15/2018	
8270D SVOC (1-20 ug/L SepF)	03/26/2018	10	3/15/2018	
8260C Gas (NWTPH)	03/26/2018	10	3/22/2018	
8270D-SIM PAH (0.1 ug/L or 5 ug/kg)	03/26/2018	10	3/15/2018	
8041A Chlorinated Phenols	03/26/2018	10	3/15/2018	
18C0203-11 MW-02D-20180308 [Water] Sampled 08-Mar-2018 15:00				Some samples may be hot.
8260C Gas (NWTPH)	03/26/2018	10	3/22/2018	
8270D-SIM PAH (0.1 ug/L or 5 ug/kg)	03/26/2018	10	3/15/2018	
TPH NW (Extractables) low level	03/26/2018	10	3/15/2018	
8270D SVOC (1-20 ug/L SepF)	03/26/2018	10	3/15/2018	
8041A Chlorinated Phenols	03/26/2018	10	3/15/2018	
18C0203-12 PZ-19-20180309 [Water] Sampled 09-Mar-2018 09:24				Onlly run PCP if PCP 8270 is ND. Some samples may be hot.
8041A Chlorinated Phenols	03/26/2018	10	3/16/2018	
8260C Gas (NWTPH)	03/26/2018	10	3/23/2018	
8270D-SIM PAH (0.1 ug/L or 5 ug/kg)	03/26/2018	10	3/16/2018	
8270D SVOC (1-20 ug/L SepF)	03/26/2018	10	3/16/2018	
TPH NW (Extractables) low level	03/26/2018	10	3/16/2018	
18C0203-13 PZ-12-20180309 [Water] Sampled 09-Mar-2018 09:45				Plus Creosote, Acid cleaned. Some samples may be hot.
TPH NW (Extractables) low level	03/26/2018	10	3/16/2018	
8270D SVOC (1-20 ug/L SepF)	03/26/2018	10	3/16/2018	
8270D-SIM PAH (0.1 ug/L or 5 ug/kg)	03/26/2018	10	3/16/2018	
8260C Gas (NWTPH)	03/26/2018	10	3/23/2018	
8041A Chlorinated Phenols	03/26/2018	10	3/16/2018	

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18C0203

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

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

Analysis	Due	TAT	Expires	Comments
18C0203-14 PZ-13-20180309 [Water] Sampled 09-Mar-2018 10:24				Some samples may be hot.
8260C Gas (NWTPH)	03/26/2018	10	3/23/2018	
8041A Chlorinated Phenols	03/26/2018	10	3/16/2018	
8270D SVOC (1-20 ug/L SepF)	03/26/2018	10	3/16/2018	
8270D-SIM PAH (0.1 ug/L or 5 ug/kg)	03/26/2018	10	3/16/2018	
TPH NW (Extractables) low level	03/26/2018	10	3/16/2018	
18C0203-15 MW-01D-20180309 [Water] Sampled 09-Mar-2018 11:16				Onlly run PCP if PCP 8270 is ND. Some samples may be hot.
8041A Chlorinated Phenols	03/26/2018	10	3/16/2018	
8270D-SIM PAH (0.1 ug/L or 5 ug/kg)	03/26/2018	10	3/16/2018	
8260C Gas (NWTPH)	03/26/2018	10	3/23/2018	
TPH NW (Extractables) low level	03/26/2018	10	3/16/2018	
8270D SVOC (1-20 ug/L SepF)	03/26/2018	10	3/16/2018	
18C0203-16 MW-01S-20180309 [Water] Sampled 09-Mar-2018 11:15				Some samples may be hot.
8260C Gas (NWTPH)	03/26/2018	10	3/23/2018	
8270D SVOC (1-20 ug/L SepF)	03/26/2018	10	3/16/2018	
TPH NW (Extractables) low level	03/26/2018	10	3/16/2018	
8270D-SIM PAH (0.1 ug/L or 5 ug/kg)	03/26/2018	10	3/16/2018	
8041A Chlorinated Phenols	03/26/2018	10	3/16/2018	

Reviewed By Date

WORK ORDER

18C0203

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

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

Preservation Confirmation

Container ID	Container Type	pH
18C0203-01 A	VOA Vial, Clear, 40 mL, HCL	1 large air bubble
18C0203-01 B	VOA Vial, Clear, 40 mL, HCL	1 large air bubble
18C0203-02 A	VOA Vial, Clear, 40 mL, HCL	
18C0203-02 B	VOA Vial, Clear, 40 mL, HCL	
18C0203-02 C	Glass NM, Amber, 500 mL	
18C0203-02 D	Glass NM, Amber, 500 mL	
18C0203-02 E	Glass NM, Amber, 500 mL	
18C0203-02 F	Glass NM, Amber, 500 mL	
18C0203-02 G	Glass NM, Amber, 500 mL	
18C0203-02 H	Glass NM, Amber, 500 mL	
18C0203-02 I	Glass NM, Amber, 500 mL	
18C0203-02 J	Glass NM, Amber, 500 mL	
18C0203-03 A	VOA Vial, Clear, 40 mL, HCL	1 large air bubble
18C0203-03 B	VOA Vial, Clear, 40 mL, HCL	
18C0203-03 C	Glass NM, Amber, 500 mL	
18C0203-03 D	Glass NM, Amber, 500 mL	
18C0203-03 E	Glass NM, Amber, 500 mL	
18C0203-03 F	Glass NM, Amber, 500 mL	
18C0203-03 G	Glass NM, Amber, 500 mL	
18C0203-03 H	Glass NM, Amber, 500 mL	
18C0203-03 I	Glass NM, Amber, 500 mL	
18C0203-03 J	Glass NM, Amber, 500 mL	
18C0203-04 A	VOA Vial, Clear, 40 mL, HCL	1 large air bubble
18C0203-04 B	VOA Vial, Clear, 40 mL, HCL	1 large air bubble
18C0203-04 C	Glass NM, Amber, 500 mL	
18C0203-04 D	Glass NM, Amber, 500 mL	
18C0203-04 E	Glass NM, Amber, 500 mL	
18C0203-04 F	Glass NM, Amber, 500 mL	
18C0203-04 G	Glass NM, Amber, 500 mL	
18C0203-04 H	Glass NM, Amber, 500 mL	
18C0203-04 I	Glass NM, Amber, 500 mL	
18C0203-04 J	Glass NM, Amber, 500 mL	
18C0203-05 A	VOA Vial, Clear, 40 mL, HCL	1 large air bubble
18C0203-05 B	VOA Vial, Clear, 40 mL, HCL	4 pea bubbles
18C0203-05 C	Glass NM, Amber, 500 mL	

Reviewed By

Date

WORK ORDER

18C0203

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

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

18C0203-05 D	Glass NM, Amber, 500 mL	
18C0203-05 E	Glass NM, Amber, 500 mL	
18C0203-05 F	Glass NM, Amber, 500 mL	
18C0203-05 G	Glass NM, Amber, 500 mL	
18C0203-05 H	Glass NM, Amber, 500 mL	
18C0203-05 I	Glass NM, Amber, 500 mL	
18C0203-05 J	Glass NM, Amber, 500 mL	
18C0203-06 A	VOA Vial, Clear, 40 mL, HCL	
18C0203-06 B	VOA Vial, Clear, 40 mL, HCL	
18C0203-06 C	Glass NM, Amber, 500 mL	
18C0203-06 D	Glass NM, Amber, 500 mL	
18C0203-06 E	Glass NM, Amber, 500 mL	
18C0203-06 F	Glass NM, Amber, 500 mL	
18C0203-06 G	Glass NM, Amber, 500 mL	
18C0203-06 H	Glass NM, Amber, 500 mL	
18C0203-06 I	Glass NM, Amber, 500 mL	
18C0203-06 J	Glass NM, Amber, 500 mL	
18C0203-07 A	VOA Vial, Clear, 40 mL, HCL	
18C0203-07 B	VOA Vial, Clear, 40 mL, HCL	
18C0203-07 C	Glass NM, Amber, 500 mL	
18C0203-07 D	Glass NM, Amber, 500 mL	
18C0203-07 E	Glass NM, Amber, 500 mL	
18C0203-07 F	Glass NM, Amber, 500 mL	
18C0203-07 G	Glass NM, Amber, 500 mL	
18C0203-07 H	Glass NM, Amber, 500 mL	
18C0203-07 I	Glass NM, Amber, 500 mL	
18C0203-07 J	Glass NM, Amber, 500 mL	
18C0203-08 A	VOA Vial, Clear, 40 mL, HCL	1 large a.v bubble
18C0203-08 B	VOA Vial, Clear, 40 mL, HCL	
18C0203-08 C	Glass NM, Amber, 500 mL	
18C0203-08 D	Glass NM, Amber, 500 mL	
18C0203-08 E	Glass NM, Amber, 500 mL	
18C0203-08 F	Glass NM, Amber, 500 mL	
18C0203-08 G	Glass NM, Amber, 500 mL	
18C0203-08 H	Glass NM, Amber, 500 mL	
18C0203-08 I	Glass NM, Amber, 500 mL	
18C0203-08 J	Glass NM, Amber, 500 mL	

Reviewed By

Date

WORK ORDER

18C0203

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

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

18C0203-09 A	VOA Vial, Clear, 40 mL, HCL	1 pea bubble
18C0203-09 B	VOA Vial, Clear, 40 mL, HCL	3 pea bubbles
18C0203-09 C	Glass NM, Amber, 500 mL	
18C0203-09 D	Glass NM, Amber, 500 mL	
18C0203-09 E	Glass NM, Amber, 500 mL	
18C0203-09 F	Glass NM, Amber, 500 mL	
18C0203-09 G	Glass NM, Amber, 500 mL	
18C0203-09 H	Glass NM, Amber, 500 mL	
18C0203-09 I	Glass NM, Amber, 500 mL	
18C0203-09 J	Glass NM, Amber, 500 mL	
18C0203-10 A	VOA Vial, Clear, 40 mL, HCL	2 pea bubbles
18C0203-10 B	VOA Vial, Clear, 40 mL, HCL	2 pea bubbles
18C0203-10 C	Glass NM, Amber, 500 mL	
18C0203-10 D	Glass NM, Amber, 500 mL	
18C0203-10 E	Glass NM, Amber, 500 mL	
18C0203-10 F	Glass NM, Amber, 500 mL	
18C0203-10 G	Glass NM, Amber, 500 mL	
18C0203-10 H	Glass NM, Amber, 500 mL	
18C0203-10 I	Glass NM, Amber, 500 mL	
18C0203-10 J	Glass NM, Amber, 500 mL	
18C0203-11 A	VOA Vial, Clear, 40 mL, HCL	
18C0203-11 B	VOA Vial, Clear, 40 mL, HCL	
18C0203-11 C	Glass NM, Amber, 500 mL	
18C0203-11 D	Glass NM, Amber, 500 mL	
18C0203-11 E	Glass NM, Amber, 500 mL	
18C0203-11 F	Glass NM, Amber, 500 mL	
18C0203-11 G	Glass NM, Amber, 500 mL	
18C0203-11 H	Glass NM, Amber, 500 mL	
18C0203-11 I	Glass NM, Amber, 500 mL	
18C0203-11 J	Glass NM, Amber, 500 mL	
18C0203-12 A	VOA Vial, Clear, 40 mL, HCL	
18C0203-12 B	VOA Vial, Clear, 40 mL, HCL	
18C0203-12 C	Glass NM, Amber, 500 mL	
18C0203-12 D	Glass NM, Amber, 500 mL	
18C0203-12 E	Glass NM, Amber, 500 mL	
18C0203-12 F	Glass NM, Amber, 500 mL	
18C0203-12 G	Glass NM, Amber, 500 mL	

Reviewed By

Date

WORK ORDER

18C0203

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

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

18C0203-12 H	Glass NM, Amber, 500 mL
18C0203-12 I	Glass NM, Amber, 500 mL
18C0203-12 J	Glass NM, Amber, 500 mL
18C0203-13 A	VOA Vial, Clear, 40 mL, HCL
18C0203-13 B	VOA Vial, Clear, 40 mL, HCL
18C0203-13 C	Glass NM, Amber, 500 mL
18C0203-13 D	Glass NM, Amber, 500 mL
18C0203-13 E	Glass NM, Amber, 500 mL
18C0203-13 F	Glass NM, Amber, 500 mL
18C0203-13 G	Glass NM, Amber, 500 mL
18C0203-13 H	Glass NM, Amber, 500 mL
18C0203-13 I	Glass NM, Amber, 500 mL
18C0203-13 J	Glass NM, Amber, 500 mL
18C0203-14 A	VOA Vial, Clear, 40 mL, HCL
18C0203-14 B	VOA Vial, Clear, 40 mL, HCL
18C0203-14 C	Glass NM, Amber, 500 mL
18C0203-14 D	Glass NM, Amber, 500 mL
18C0203-14 E	Glass NM, Amber, 500 mL
18C0203-14 F	Glass NM, Amber, 500 mL
18C0203-14 G	Glass NM, Amber, 500 mL
18C0203-14 H	Glass NM, Amber, 500 mL
18C0203-14 I	Glass NM, Amber, 500 mL
18C0203-14 J	Glass NM, Amber, 500 mL
18C0203-15 A	VOA Vial, Clear, 40 mL, HCL
18C0203-15 B	VOA Vial, Clear, 40 mL, HCL
18C0203-15 C	Glass NM, Amber, 500 mL
18C0203-15 D	Glass NM, Amber, 500 mL
18C0203-15 E	Glass NM, Amber, 500 mL
18C0203-15 F	Glass NM, Amber, 500 mL
18C0203-15 G	Glass NM, Amber, 500 mL
18C0203-15 H	Glass NM, Amber, 500 mL
18C0203-15 I	Glass NM, Amber, 500 mL
18C0203-15 J	Glass NM, Amber, 500 mL
18C0203-16 A	VOA Vial, Clear, 40 mL, HCL
18C0203-16 B	VOA Vial, Clear, 40 mL, HCL
18C0203-16 C	Glass NM, Amber, 500 mL
18C0203-16 D	Glass NM, Amber, 500 mL

Reviewed By

Date

WORK ORDER

18C0203

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

18C0203-16 E	Glass NM, Amber, 500 mL
18C0203-16 F	Glass NM, Amber, 500 mL
18C0203-16 G	Glass NM, Amber, 500 mL
18C0203-16 H	Glass NM, Amber, 500 mL
18C0203-16 I	Glass NM, Amber, 500 mL
18C0203-16 J	Glass NM, Amber, 500 mL

JBW
Preservation Confirmed By

03/10/18
Date

Reviewed By

Date

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: 18C0203 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) 5.7 (1) 2.6 (2) 2.1 (3) 1.1 (4) 1.3 (5) 1.8(6)

Time: 1400

If cooler temperature is out of compliance fill out form 00070F Temp Gun ID#: 170025650

Cooler Accepted by: BF Date: 3/9/18 Time: 1525

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 03/05/18

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

Samples Logged by: SBW Date: 03/10/18 Time: 0916

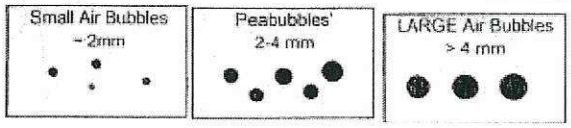
***** Notify Project Manager of discrepancies or concerns *****

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

Additional Notes, Discrepancies, & Resolutions:

VOA's with air bubbles marked on pres sheet

By: SBW Date: 03/10/18



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	27-Mar-2018 14:33

Trip Blanks-20180308

18C0203-01 (Water)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 03/08/2018 12:41

Instrument: NT3 — Analyzed: 16-Mar-2018 15:32

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGC0477 — Sample Size: 10 mL
Prepared: 16-Mar-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 %*	*97.0*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*98.9*	*%*	

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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	27-Mar-2018 14:33

MW-05S-20180308

18C0203-02 (Water)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 03/08/2018 12:41

Instrument: NT3 — Analyzed: 16-Mar-2018 16:22

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGC0477 — Sample Size: 10 mL
Prepared: 16-Mar-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 %*	*99.3*	*%*	

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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	27-Mar-2018 14:33

MW-05S-20180308

18C0203-02 (Water)

Semivolatile Organic Compounds

Method: EPA 8270D — Sampled: 03/08/2018 12:41

Instrument: NT12 — Analyzed: 15-Mar-2018 14:39

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BGC0354 — Sample Size: 500 mL
Prepared: 13-Mar-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	**8.1**	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 %*	*90.6*	*%*	
Surrogate: 2,4,6-Tribromophenol			*49.3-128 %*	*101*	*%*	
Surrogate: p-Terphenyl-d14			*60-120 %*	*110*	*%*	

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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	27-Mar-2018 14:33

MW-05S-20180308

18C0203-02 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270D-SIM — Sampled: 03/08/2018 12:41

Instrument: NT8 — Analyzed: 20-Mar-2018 19:17

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq)
Preparation Batch: BGC0352 — Sample Size: 500 mL
Prepared: 15-Mar-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 %*	*65.1*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14			*10-125 %*	*65.3*	*%*	

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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	27-Mar-2018 14:33

MW-05S-20180308

18C0203-02 (Water)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 03/08/2018 12:41

Instrument: FID3 — Analyzed: 27-Mar-2018 00:26

Sample Preparation:	Preparation Method: EPA 3510C SepF	
	Preparation Batch: BGC0357	Sample Size: 500 mL
	Prepared: 14-Mar-2018	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Silica Gel	
	Cleanup Batch: CGC0154	Initial Volume: 1 mL
	Cleaned: 26-Mar-2018	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Sulfuric Acid	
	Cleanup Batch: CGC0153	Initial Volume: 1 mL
	Cleaned: 26-Mar-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 %*	*78.7*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	27-Mar-2018 14:33

MW-05S-20180308

18C0203-02 (Water)

Phenols

Method: EPA 8041A — Sampled: 03/08/2018 12:41

Instrument: ECD8 — Analyzed: 23-Mar-2018 17:22

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BGC0385 — Sample Size: 500 mL
Prepared: 15-Mar-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 %*	*55.6*	*%*	
Surrogate: 2,4,6-Tribromophenol [2C]			*26-120 %*	*46.2*	*%*	

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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	27-Mar-2018 14:33

PZ-30-20180308

18C0203-03 (Water)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 03/08/2018 12:45

Instrument: NT3 — Analyzed: 16-Mar-2018 16:48

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGC0477 — Sample Size: 10 mL
Prepared: 16-Mar-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 %*	*97.2*	*%*	
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	27-Mar-2018 14:33

PZ-30-20180308

18C0203-03 (Water)

Semivolatile Organic Compounds

Method: EPA 8270D — Sampled: 03/08/2018 12:45

Instrument: NT12 — Analyzed: 15-Mar-2018 14:05

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BGC0354 — Sample Size: 500 mL
Prepared: 13-Mar-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	**8.1**	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 %*	*83.6*	*%*	
Surrogate: 2,4,6-Tribromophenol			*49.3-128 %*	*95.5*	*%*	
Surrogate: p-Terphenyl-d14			*60-120 %*	*104*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	27-Mar-2018 14:33

PZ-30-20180308

18C0203-03 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270D-SIM — Sampled: 03/08/2018 12:45

Instrument: NT8 — Analyzed: 20-Mar-2018 19:44

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq)
Preparation Batch: BGC0352 — Sample Size: 500 mL
Prepared: 15-Mar-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 %*	*65.1*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14			*10-125 %*	*70.8*	*%*	

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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	27-Mar-2018 14:33

PZ-30-20180308

18C0203-03 (Water)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 03/08/2018 12:45

Instrument: FID3 — Analyzed: 27-Mar-2018 00:46

Sample Preparation:	Preparation Method: EPA 3510C SepF	
	Preparation Batch: BGC0357	Sample Size: 500 mL
	Prepared: 14-Mar-2018	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Silica Gel	
	Cleanup Batch: CGC0154	Initial Volume: 1 mL
	Cleaned: 26-Mar-2018	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Sulfuric Acid	
	Cleanup Batch: CGC0153	Initial Volume: 1 mL
	Cleaned: 26-Mar-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 %*	*78.1*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	27-Mar-2018 14:33

PZ-30-20180308

18C0203-03 (Water)

Phenols

Method: EPA 8041A — Sampled: 03/08/2018 12:45

Instrument: ECD8 — Analyzed: 23-Mar-2018 17:40

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BGC0385 — Sample Size: 500 mL
Prepared: 15-Mar-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 %*	*54.2*	*%*	
Surrogate: 2,4,6-Tribromophenol [2C]			*26-120 %*	*44.0*	*%*	

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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	27-Mar-2018 14:33

PZ-18-20180308

18C0203-04 (Water)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 03/08/2018 16:34

Instrument: NT3 — Analyzed: 16-Mar-2018 17:13

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGC0477 — Sample Size: 10 mL
Prepared: 16-Mar-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 %*	*98.4*	*%*	
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	27-Mar-2018 14:33

PZ-18-20180308

18C0203-04 (Water)

Semivolatile Organic Compounds

Method: EPA 8270D — Sampled: 03/08/2018 16:34

Instrument: NT12 — Analyzed: 15-Mar-2018 15:13

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BGC0354 — Sample Size: 500 mL
Prepared: 13-Mar-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 %*	*84.2*	*%*	
Surrogate: 2,4,6-Tribromophenol			*49.3-128 %*	*94.4*	*%*	
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	27-Mar-2018 14:33

PZ-18-20180308

18C0203-04 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270D-SIM — Sampled: 03/08/2018 16:34

Instrument: NT8 — Analyzed: 20-Mar-2018 20:11

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq)
Preparation Batch: BGC0352 — Sample Size: 500 mL
Prepared: 15-Mar-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 %*	*66.6*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14			*10-125 %*	*72.5*	*%*	

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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	27-Mar-2018 14:33

PZ-18-20180308

18C0203-04 (Water)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 03/08/2018 16:34

Instrument: FID3 — Analyzed: 27-Mar-2018 01:05

Sample Preparation:	Preparation Method: EPA 3510C SepF	
	Preparation Batch: BGC0357	Sample Size: 500 mL
	Prepared: 14-Mar-2018	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Silica Gel	
	Cleanup Batch: CGC0154	Initial Volume: 1 mL
	Cleaned: 26-Mar-2018	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Sulfuric Acid	
	Cleanup Batch: CGC0153	Initial Volume: 1 mL
	Cleaned: 26-Mar-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 %*	*76.3*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	27-Mar-2018 14:33

PZ-18-20180308

18C0203-04 (Water)

Phenols

Method: EPA 8041A — Sampled: 03/08/2018 16:34

Instrument: ECD8 — Analyzed: 23-Mar-2018 17:58

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BGC0385 — Sample Size: 500 mL
Prepared: 15-Mar-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 %*	*48.3*	*%*	
Surrogate: 2,4,6-Tribromophenol [2C]			*26-120 %*	*39.2*	*%*	

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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	27-Mar-2018 14:33

PZ-17-20180308

18C0203-05 (Water)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 03/08/2018 17:26

Instrument: NT3 — Analyzed: 16-Mar-2018 17:38

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGC0477 — Sample Size: 10 mL
Prepared: 16-Mar-2018 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)		1	100	**344**	ug/L	
HC ID: GRO						
Surrogate: Toluene-d8			*80-120 %*	*96.1*	*%*	
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	27-Mar-2018 14:33

PZ-17-20180308

18C0203-05 (Water)

Semivolatile Organic Compounds

Method: EPA 8270D — Sampled: 03/08/2018 17:26

Instrument: NT12 — Analyzed: 15-Mar-2018 15:47

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BGC0354 — Sample Size: 500 mL
Prepared: 13-Mar-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 %*	*74.7*	*%*	
Surrogate: 2,4,6-Tribromophenol			*49.3-128 %*	*82.5*	*%*	
Surrogate: p-Terphenyl-d14			*60-120 %*	*86.1*	*%*	

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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	27-Mar-2018 14:33

PZ-17-20180308

18C0203-05 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270D-SIM — Sampled: 03/08/2018 17:26

Instrument: NT8 — Analyzed: 20-Mar-2018 20:37

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq)
Preparation Batch: BGC0352 — Sample Size: 500 mL
Prepared: 15-Mar-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 %*	*56.9*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14			*10-125 %*	*63.2*	*%*	

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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	27-Mar-2018 14:33

PZ-17-20180308

18C0203-05 (Water)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 03/08/2018 17:26

Instrument: FID3 — Analyzed: 27-Mar-2018 01:25

Sample Preparation:	Preparation Method: EPA 3510C SepF	
	Preparation Batch: BGC0357	Sample Size: 500 mL
	Prepared: 14-Mar-2018	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Silica Gel	
	Cleanup Batch: CGC0154	Initial Volume: 1 mL
	Cleaned: 26-Mar-2018	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Sulfuric Acid	
	Cleanup Batch: CGC0153	Initial Volume: 1 mL
	Cleaned: 26-Mar-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 %*	*79.8*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	27-Mar-2018 14:33

PZ-17-20180308

18C0203-05 (Water)

Phenols

Method: EPA 8041A — Sampled: 03/08/2018 17:26

Instrument: ECD8 — Analyzed: 23-Mar-2018 18:16

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BGC0385 — Sample Size: 500 mL
Prepared: 15-Mar-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 %*	*60.6*	*%*	
Surrogate: 2,4,6-Tribromophenol [2C]			*26-120 %*	*47.8*	*%*	

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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	27-Mar-2018 14:33

CW-13-20180308

18C0203-06 (Water)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 03/08/2018 12:50

Instrument: NT3 — Analyzed: 16-Mar-2018 18:04

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGC0477 — Sample Size: 10 mL
Prepared: 16-Mar-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 %*	*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	27-Mar-2018 14:33

CW-13-20180308

18C0203-06 (Water)

Semivolatile Organic Compounds

Method: EPA 8270D — Sampled: 03/08/2018 12:50

Instrument: NT12 — Analyzed: 15-Mar-2018 16:20

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BGC0354 — Sample Size: 500 mL
Prepared: 13-Mar-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 %*	*88.9*	*%*	
Surrogate: 2,4,6-Tribromophenol			*49.3-128 %*	*94.7*	*%*	
Surrogate: p-Terphenyl-d14			*60-120 %*	*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	27-Mar-2018 14:33

CW-13-20180308

18C0203-06 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270D-SIM — Sampled: 03/08/2018 12:50

Instrument: NT8 — Analyzed: 20-Mar-2018 21:04

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq)
Preparation Batch: BGC0352 — Sample Size: 500 mL
Prepared: 15-Mar-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 %*	*41.5*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14			*10-125 %*	*56.3*	*%*	

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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	27-Mar-2018 14:33

CW-13-20180308

18C0203-06 (Water)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 03/08/2018 12:50

Instrument: FID3 — Analyzed: 27-Mar-2018 01:45

Sample Preparation:	Preparation Method: EPA 3510C SepF	
	Preparation Batch: BGC0357	Sample Size: 500 mL
	Prepared: 14-Mar-2018	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Silica Gel	
	Cleanup Batch: CGC0154	Initial Volume: 1 mL
	Cleaned: 26-Mar-2018	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Sulfuric Acid	
	Cleanup Batch: CGC0153	Initial Volume: 1 mL
	Cleaned: 26-Mar-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 %*	*78.5*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	27-Mar-2018 14:33

CW-13-20180308

18C0203-06 (Water)

Phenols

Method: EPA 8041A — Sampled: 03/08/2018 12:50

Instrument: ECD8 — Analyzed: 23-Mar-2018 18:33

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BGC0385 — Sample Size: 500 mL
Prepared: 15-Mar-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 %*	*40.7*	*%*	
Surrogate: 2,4,6-Tribromophenol [2C]			*26-120 %*	*32.4*	*%*	

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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	27-Mar-2018 14:33

MW-05D-20180308

18C0203-07 (Water)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 03/08/2018 13:55

Instrument: NT3 — Analyzed: 16-Mar-2018 18:29

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGC0477 — Sample Size: 10 mL
Prepared: 16-Mar-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 %*	*101*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*102*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	27-Mar-2018 14:33

MW-05D-20180308

18C0203-07 (Water)

Semivolatile Organic Compounds

Method: EPA 8270D — Sampled: 03/08/2018 13:55

Instrument: NT12 — Analyzed: 15-Mar-2018 17:28

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BGC0354 — Sample Size: 500 mL
Prepared: 13-Mar-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 %*	*83.1*	*%*	
Surrogate: 2,4,6-Tribromophenol			*49.3-128 %*	*89.7*	*%*	
Surrogate: p-Terphenyl-d14			*60-120 %*	*104*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	27-Mar-2018 14:33

MW-05D-20180308

18C0203-07 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270D-SIM — Sampled: 03/08/2018 13:55

Instrument: NT8 — Analyzed: 20-Mar-2018 21:31

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq)
Preparation Batch: BGC0352 — Sample Size: 500 mL
Prepared: 15-Mar-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 %*	*62.8*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14			*10-125 %*	*76.5*	*%*	

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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	27-Mar-2018 14:33

MW-05D-20180308

18C0203-07 (Water)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 03/08/2018 13:55

Instrument: FID3 — Analyzed: 27-Mar-2018 02:04

Sample Preparation:	Preparation Method: EPA 3510C SepF	
	Preparation Batch: BGC0357	Sample Size: 500 mL
	Prepared: 14-Mar-2018	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Silica Gel	
	Cleanup Batch: CGC0154	Initial Volume: 1 mL
	Cleaned: 26-Mar-2018	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Sulfuric Acid	
	Cleanup Batch: CGC0153	Initial Volume: 1 mL
	Cleaned: 26-Mar-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 %*	*80.5*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	27-Mar-2018 14:33

MW-05D-20180308

18C0203-07 (Water)

Phenols

Method: EPA 8041A — Sampled: 03/08/2018 13:55

Instrument: ECD8 — Analyzed: 23-Mar-2018 19:09

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BGC0385 — Sample Size: 500 mL
Prepared: 15-Mar-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 %*	*39.6*	*%*	
Surrogate: 2,4,6-Tribromophenol [2C]			*26-120 %*	*32.0*	*%*	

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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	27-Mar-2018 14:33

LW-3-20180308

18C0203-08 (Water)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 03/08/2018 17:03

Instrument: NT3 — Analyzed: 16-Mar-2018 18:54

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGC0477 — Sample Size: 10 mL
Prepared: 16-Mar-2018 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)		1	100	**248**	ug/L	
HC ID: GRO						
Surrogate: Toluene-d8			*80-120 %*	*98.2*	*%*	
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	27-Mar-2018 14:33

LW-3-20180308

18C0203-08 (Water)

Semivolatile Organic Compounds

Method: EPA 8270D — Sampled: 03/08/2018 17:03

Instrument: NT12 — Analyzed: 14-Mar-2018 21:49

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BGC0354 — Sample Size: 500 mL
Prepared: 13-Mar-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 %*	*94.5*	*%*	
Surrogate: 2,4,6-Tribromophenol			*49.3-128 %*	*111*	*%*	
Surrogate: p-Terphenyl-d14			*60-120 %*	*109*	*%*	

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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	27-Mar-2018 14:33

LW-3-20180308

18C0203-08 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270D-SIM — Sampled: 03/08/2018 17:03

Instrument: NT8 — Analyzed: 20-Mar-2018 21:58

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq)
Preparation Batch: BGC0352 — Sample Size: 500 mL
Prepared: 15-Mar-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 %*	*53.2*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14			*10-125 %*	*27.3*	*%*	

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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	27-Mar-2018 14:33

LW-3-20180308

18C0203-08 (Water)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 03/08/2018 17:03

Instrument: FID3 — Analyzed: 27-Mar-2018 02:24

Sample Preparation:	Preparation Method: EPA 3510C SepF	
	Preparation Batch: BGC0357	Sample Size: 500 mL
	Prepared: 14-Mar-2018	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Silica Gel	
	Cleanup Batch: CGC0154	Initial Volume: 1 mL
	Cleaned: 26-Mar-2018	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Sulfuric Acid	
	Cleanup Batch: CGC0153	Initial Volume: 1 mL
	Cleaned: 26-Mar-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 %*	*78.6*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	27-Mar-2018 14:33

LW-3-20180308

18C0203-08 (Water)

Phenols

Method: EPA 8041A — Sampled: 03/08/2018 17:03

Instrument: ECD8 — Analyzed: 23-Mar-2018 19:27

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BGC0385 — Sample Size: 500 mL
Prepared: 15-Mar-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 %*	*87.9*	*%*	
Surrogate: 2,4,6-Tribromophenol [2C]			*26-120 %*	*66.9*	*%*	

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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	27-Mar-2018 14:33

LW-4R-20180308

18C0203-09 (Water)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 03/08/2018 15:51

Instrument: NT3 — Analyzed: 16-Mar-2018 19:19

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGC0477 — Sample Size: 10 mL
Prepared: 16-Mar-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 %*	*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	27-Mar-2018 14:33

LW-4R-20180308

18C0203-09 (Water)

Semivolatile Organic Compounds

Method: EPA 8270D — Sampled: 03/08/2018 15:51

Instrument: NT12 — Analyzed: 15-Mar-2018 18:02

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BGC0354 — Sample Size: 500 mL
Prepared: 13-Mar-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 %*	*77.3*	*%*	
Surrogate: 2,4,6-Tribromophenol			*49.3-128 %*	*90.1*	*%*	
Surrogate: p-Terphenyl-d14			*60-120 %*	*98.3*	*%*	

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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	27-Mar-2018 14:33

LW-4R-20180308

18C0203-09 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270D-SIM — Sampled: 03/08/2018 15:51

Instrument: NT8 — Analyzed: 20-Mar-2018 22:25

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq)
Preparation Batch: BGC0352 — Sample Size: 500 mL
Prepared: 15-Mar-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 %*	*63.8*	*%*	

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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	27-Mar-2018 14:33

LW-4R-20180308

18C0203-09 (Water)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 03/08/2018 15:51

Instrument: FID3 — Analyzed: 27-Mar-2018 03:43

Sample Preparation:	Preparation Method: EPA 3510C SepF	
	Preparation Batch: BGC0357	Sample Size: 500 mL
	Prepared: 14-Mar-2018	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Silica Gel	
	Cleanup Batch: CGC0154	Initial Volume: 1 mL
	Cleaned: 26-Mar-2018	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Sulfuric Acid	
	Cleanup Batch: CGC0153	Initial Volume: 1 mL
	Cleaned: 26-Mar-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 %*	*82.4*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	27-Mar-2018 14:33

LW-4R-20180308

18C0203-09 (Water)

Phenols

Method: EPA 8041A — Sampled: 03/08/2018 15:51

Instrument: ECD8 — Analyzed: 23-Mar-2018 19:45

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BGC0385 — Sample Size: 500 mL
Prepared: 15-Mar-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 %*	*50.5*	*%*	
Surrogate: 2,4,6-Tribromophenol [2C]			*26-120 %*	*36.9*	*%*	

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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	27-Mar-2018 14:33

MW-02S-20180308

18C0203-10 (Water)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 03/08/2018 14:19

Instrument: NT3 — Analyzed: 16-Mar-2018 19:44

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGC0477 — Sample Size: 10 mL
Prepared: 16-Mar-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 %*	*99.4*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*98.8*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	27-Mar-2018 14:33

MW-02S-20180308

18C0203-10 (Water)

Semivolatile Organic Compounds

Method: EPA 8270D — Sampled: 03/08/2018 14:19

Instrument: NT12 — Analyzed: 15-Mar-2018 18:35

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BGC0354 — Sample Size: 500 mL
Prepared: 13-Mar-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 %*	*80.2*	*%*	
Surrogate: 2,4,6-Tribromophenol			*49.3-128 %*	*93.2*	*%*	
Surrogate: p-Terphenyl-d14			*60-120 %*	*95.7*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	27-Mar-2018 14:33

MW-02S-20180308

18C0203-10 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270D-SIM — Sampled: 03/08/2018 14:19

Instrument: NT8 — Analyzed: 20-Mar-2018 22:52

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq)
Preparation Batch: BGC0352 — Sample Size: 500 mL
Prepared: 15-Mar-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 %*	*62.3*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14			*10-125 %*	*85.2*	*%*	

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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	27-Mar-2018 14:33

MW-02S-20180308

18C0203-10 (Water)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 03/08/2018 14:19

Instrument: FID3 — Analyzed: 27-Mar-2018 04:03

Sample Preparation:	Preparation Method: EPA 3510C SepF	
	Preparation Batch: BGC0357	Sample Size: 500 mL
	Prepared: 14-Mar-2018	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Silica Gel	
	Cleanup Batch: CGC0154	Initial Volume: 1 mL
	Cleaned: 26-Mar-2018	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Sulfuric Acid	
	Cleanup Batch: CGC0153	Initial Volume: 1 mL
	Cleaned: 26-Mar-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 %*	*81.8*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	27-Mar-2018 14:33

MW-02S-20180308

18C0203-10 (Water)

Phenols

Method: EPA 8041A — Sampled: 03/08/2018 14:19

Instrument: ECD8 — Analyzed: 23-Mar-2018 20:03

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BGC0385 — Sample Size: 500 mL
Prepared: 15-Mar-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 %*	*58.8*	*%*	
Surrogate: 2,4,6-Tribromophenol [2C]			*26-120 %*	*41.5*	*%*	

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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	27-Mar-2018 14:33

MW-02D-20180308

18C0203-11 (Water)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 03/08/2018 15:00

Instrument: NT3 — Analyzed: 16-Mar-2018 20:10

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGC0477 — Sample Size: 10 mL
Prepared: 16-Mar-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 %*	*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	27-Mar-2018 14:33

MW-02D-20180308

18C0203-11 (Water)

Semivolatile Organic Compounds

Method: EPA 8270D — Sampled: 03/08/2018 15:00

Instrument: NT12 — Analyzed: 15-Mar-2018 19:09

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BGC0354 — Sample Size: 500 mL
Prepared: 13-Mar-2018 — Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	1.0	**5.6**	ug/L	
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	**1.6**	ug/L	
Dibenzofuran	132-64-9	1	1.0	**1.3**	ug/L	
Fluorene	86-73-7	1	1.0	**1.6**	ug/L	
Pentachlorophenol	87-86-5	1	10.0	ND	ug/L	U
Phenanthrene	85-01-8	1	1.0	**1.4**	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	**1.8**	ug/L	
Surrogate: 2-Fluorobiphenyl			*54.4-120 %*	*75.1*	*%*	
Surrogate: 2,4,6-Tribromophenol			*49.3-128 %*	*83.4*	*%*	
Surrogate: p-Terphenyl-d14			*60-120 %*	*92.4*	*%*	

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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	27-Mar-2018 14:33

MW-02D-20180308

18C0203-11 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270D-SIM — Sampled: 03/08/2018 15:00

Instrument: NT8 — Analyzed: 20-Mar-2018 23:19

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq)
Preparation Batch: BGC0352 — Sample Size: 500 mL
Prepared: 15-Mar-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 %*	*54.1*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14			*10-125 %*	*71.2*	*%*	

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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	27-Mar-2018 14:33

MW-02D-20180308

18C0203-11 (Water)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 03/08/2018 15:00

Instrument: FID3 — Analyzed: 27-Mar-2018 04:22

Sample Preparation:	Preparation Method: EPA 3510C SepF	
	Preparation Batch: BGC0357	Sample Size: 500 mL
	Prepared: 14-Mar-2018	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Silica Gel	
	Cleanup Batch: CGC0154	Initial Volume: 1 mL
	Cleaned: 26-Mar-2018	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Sulfuric Acid	
	Cleanup Batch: CGC0153	Initial Volume: 1 mL
	Cleaned: 26-Mar-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 %*	*84.4*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	27-Mar-2018 14:33

MW-02D-20180308

18C0203-11 (Water)

Phenols

Method: EPA 8041A — Sampled: 03/08/2018 15:00

Instrument: ECD8 — Analyzed: 23-Mar-2018 20:20

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BGC0385 — Sample Size: 500 mL
Prepared: 15-Mar-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 %*	*47.6*	*%*	
Surrogate: 2,4,6-Tribromophenol [2C]			*26-120 %*	*35.6*	*%*	

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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	27-Mar-2018 14:33

PZ-19-20180309

18C0203-12 (Water)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 03/09/2018 09:24

Instrument: NT3 — Analyzed: 16-Mar-2018 20:35

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGC0477 — Sample Size: 10 mL
Prepared: 16-Mar-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 %*	*99.6*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*98.2*	*%*	

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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	27-Mar-2018 14:33

PZ-19-20180309

18C0203-12 (Water)

Semivolatile Organic Compounds

Method: EPA 8270D — Sampled: 03/09/2018 09:24

Instrument: NT12 — Analyzed: 15-Mar-2018 19:43

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BGC0354 — Sample Size: 500 mL
Prepared: 13-Mar-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 %*	*83.5*	*%*	
Surrogate: 2,4,6-Tribromophenol			*49.3-128 %*	*93.0*	*%*	
Surrogate: p-Terphenyl-d14			*60-120 %*	*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	27-Mar-2018 14:33

PZ-19-20180309

18C0203-12 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270D-SIM — Sampled: 03/09/2018 09:24

Instrument: NT8 — Analyzed: 20-Mar-2018 23:46

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq)
Preparation Batch: BGC0352 — Sample Size: 500 mL
Prepared: 15-Mar-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 %*	*55.4*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14			*10-125 %*	*73.5*	*%*	

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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	27-Mar-2018 14:33

PZ-19-20180309

18C0203-12 (Water)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 03/09/2018 09:24

Instrument: FID3 — Analyzed: 27-Mar-2018 04:42

Sample Preparation:	Preparation Method: EPA 3510C SepF	
	Preparation Batch: BGC0357	Sample Size: 500 mL
	Prepared: 14-Mar-2018	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Silica Gel	
	Cleanup Batch: CGC0154	Initial Volume: 1 mL
	Cleaned: 26-Mar-2018	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Sulfuric Acid	
	Cleanup Batch: CGC0153	Initial Volume: 1 mL
	Cleaned: 26-Mar-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 %*	*78.6*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	27-Mar-2018 14:33

PZ-19-20180309

18C0203-12 (Water)

Phenols

Method: EPA 8041A — Sampled: 03/09/2018 09:24

Instrument: ECD8 — Analyzed: 23-Mar-2018 20:38

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BGC0385 — Sample Size: 500 mL
Prepared: 15-Mar-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 %*	*46.1*	*%*	
Surrogate: 2,4,6-Tribromophenol [2C]			*26-120 %*	*36.2*	*%*	

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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	27-Mar-2018 14:33

PZ-12-20180309

18C0203-13 (Water)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 03/09/2018 09:45

Instrument: NT3 — Analyzed: 16-Mar-2018 21:01

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGC0477 — Sample Size: 10 mL
Prepared: 16-Mar-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 %*	*102*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*98.0*	*%*	

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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	27-Mar-2018 14:33

PZ-12-20180309

18C0203-13 (Water)

Semivolatile Organic Compounds

Method: EPA 8270D — Sampled: 03/09/2018 09:45

Instrument: NT12 — Analyzed: 15-Mar-2018 20:16

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BGC0354 — Sample Size: 500 mL
Prepared: 13-Mar-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 %*	*82.0*	*%*	
Surrogate: 2,4,6-Tribromophenol			*49.3-128 %*	*90.7*	*%*	
Surrogate: p-Terphenyl-d14			*60-120 %*	*98.8*	*%*	

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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	27-Mar-2018 14:33

PZ-12-20180309

18C0203-13 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270D-SIM — Sampled: 03/09/2018 09:45

Instrument: NT8 — Analyzed: 21-Mar-2018 00:12

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq)
Preparation Batch: BGC0352 — Sample Size: 500 mL
Prepared: 15-Mar-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 %*	*66.6*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14			*10-125 %*	*97.9*	*%*	

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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	27-Mar-2018 14:33

PZ-12-20180309

18C0203-13 (Water)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 03/09/2018 09:45

Instrument: FID3 — Analyzed: 27-Mar-2018 05:01

Sample Preparation:	Preparation Method: EPA 3510C SepF	
	Preparation Batch: BGC0357	Sample Size: 500 mL
	Prepared: 14-Mar-2018	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Silica Gel	
	Cleanup Batch: CGC0154	Initial Volume: 1 mL
	Cleaned: 26-Mar-2018	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Sulfuric Acid	
	Cleanup Batch: CGC0153	Initial Volume: 1 mL
	Cleaned: 26-Mar-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 %*	*82.2*	*%*	

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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	27-Mar-2018 14:33

PZ-12-20180309

18C0203-13 (Water)

Phenols

Method: EPA 8041A — Sampled: 03/09/2018 09:45

Instrument: ECD8 — Analyzed: 23-Mar-2018 20:56

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BGC0385 — Sample Size: 500 mL
Prepared: 15-Mar-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 %*	*55.9*	*%*	
Surrogate: 2,4,6-Tribromophenol [2C]			*26-120 %*	*42.6*	*%*	

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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	27-Mar-2018 14:33

PZ-13-20180309

18C0203-14 (Water)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 03/09/2018 10:24

Instrument: NT3 — Analyzed: 16-Mar-2018 21:26

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGC0477 — Sample Size: 10 mL
Prepared: 16-Mar-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 %*	*98.4*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*96.3*	*%*	

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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	27-Mar-2018 14:33

PZ-13-20180309

18C0203-14 (Water)

Semivolatile Organic Compounds

Method: EPA 8270D — Sampled: 03/09/2018 10:24

Instrument: NT12 — Analyzed: 15-Mar-2018 20:50

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BGC0354 — Sample Size: 500 mL
Prepared: 13-Mar-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 %*	*76.4*	*%*	
Surrogate: 2,4,6-Tribromophenol			*49.3-128 %*	*86.9*	*%*	
Surrogate: p-Terphenyl-d14			*60-120 %*	*97.9*	*%*	

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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	27-Mar-2018 14:33

PZ-13-20180309

18C0203-14 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270D-SIM — Sampled: 03/09/2018 10:24

Instrument: NT8 — Analyzed: 21-Mar-2018 00:39

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq)
Preparation Batch: BGC0352 — Sample Size: 500 mL
Prepared: 15-Mar-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 %*	*62.3*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14			*10-125 %*	*92.1*	*%*	

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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	27-Mar-2018 14:33

PZ-13-20180309

18C0203-14 (Water)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 03/09/2018 10:24

Instrument: FID3 — Analyzed: 27-Mar-2018 05:22

Sample Preparation:	Preparation Method: EPA 3510C SepF	
	Preparation Batch: BGC0357	Sample Size: 500 mL
	Prepared: 14-Mar-2018	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Silica Gel	
	Cleanup Batch: CGC0154	Initial Volume: 1 mL
	Cleaned: 26-Mar-2018	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Sulfuric Acid	
	Cleanup Batch: CGC0153	Initial Volume: 1 mL
	Cleaned: 26-Mar-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 %*	*84.4*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	27-Mar-2018 14:33

PZ-13-20180309

18C0203-14 (Water)

Phenols

Method: EPA 8041A — Sampled: 03/09/2018 10:24

Instrument: ECD8 — Analyzed: 23-Mar-2018 21:14

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BGC0385 — Sample Size: 500 mL
Prepared: 15-Mar-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 %*	*59.0*	*%*	
Surrogate: 2,4,6-Tribromophenol [2C]			*26-120 %*	*45.7*	*%*	

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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	27-Mar-2018 14:33

MW-01D-20180309

18C0203-15 (Water)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 03/09/2018 11:16

Instrument: NT3 — Analyzed: 16-Mar-2018 21:51

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGC0477 — Sample Size: 10 mL
Prepared: 16-Mar-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 %*	*97.3*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*102*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	27-Mar-2018 14:33

MW-01D-20180309

18C0203-15 (Water)

Semivolatile Organic Compounds

Method: EPA 8270D — Sampled: 03/09/2018 11:16

Instrument: NT12 — Analyzed: 15-Mar-2018 21:23

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BGC0354 — Sample Size: 500 mL
Prepared: 13-Mar-2018 — Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	1.0	**1.7**	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 %*	*74.0*	*%*	
Surrogate: 2,4,6-Tribromophenol			*49.3-128 %*	*90.5*	*%*	
Surrogate: p-Terphenyl-d14			*60-120 %*	*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	27-Mar-2018 14:33

MW-01D-20180309

18C0203-15 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270D-SIM — Sampled: 03/09/2018 11:16

Instrument: NT8 — Analyzed: 21-Mar-2018 01:06

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq)
Preparation Batch: BGC0352 — Sample Size: 500 mL
Prepared: 15-Mar-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 %*	*52.7*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14			*10-125 %*	*65.7*	*%*	

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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	27-Mar-2018 14:33

MW-01D-20180309

18C0203-15 (Water)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 03/09/2018 11:16

Instrument: FID3 — Analyzed: 27-Mar-2018 05:42

Sample Preparation:	Preparation Method: EPA 3510C SepF	
	Preparation Batch: BGC0357	Sample Size: 500 mL
	Prepared: 14-Mar-2018	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Silica Gel	
	Cleanup Batch: CGC0154	Initial Volume: 1 mL
	Cleaned: 26-Mar-2018	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Sulfuric Acid	
	Cleanup Batch: CGC0153	Initial Volume: 1 mL
	Cleaned: 26-Mar-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 %*	*81.7*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	27-Mar-2018 14:33

MW-01D-20180309

18C0203-15 (Water)

Phenols

Method: EPA 8041A — Sampled: 03/09/2018 11:16

Instrument: ECD8 — Analyzed: 23-Mar-2018 21:32

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BGC0385 — Sample Size: 500 mL
Prepared: 15-Mar-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 %*	*64.8*	*%*	
Surrogate: 2,4,6-Tribromophenol [2C]			*26-120 %*	*50.0*	*%*	

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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	27-Mar-2018 14:33

MW-01S-20180309

18C0203-16 (Water)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 03/09/2018 11:15

Instrument: NT3 — Analyzed: 16-Mar-2018 22:16

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGC0477 — Sample Size: 10 mL
Prepared: 16-Mar-2018 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)		1	100	**18000**	ug/L	E
HC ID: GRO						
Surrogate: Toluene-d8			*80-120 %*	*97.8*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*110*	*%*	

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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	27-Mar-2018 14:33

MW-01S-20180309

18C0203-16 (Water)

Semivolatile Organic Compounds

Method: EPA 8270D — Sampled: 03/09/2018 11:15

Instrument: NT12 — Analyzed: 15-Mar-2018 02:17

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BGC0354 — Sample Size: 500 mL
Prepared: 13-Mar-2018 — Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	1.0	**1620**	ug/L	E
Acenaphthylene	208-96-8	1	1.0	ND	ug/L	U
Acenaphthene	83-32-9	1	1.0	**271**	ug/L	E
2-Methylnaphthalene	91-57-6	1	1.0	**550**	ug/L	E
Dibenzofuran	132-64-9	1	1.0	**113**	ug/L	E
Fluorene	86-73-7	1	1.0	**108**	ug/L	E
Pentachlorophenol	87-86-5	1	10.0	**1320**	ug/L	E
Phenanthrene	85-01-8	1	1.0	**147**	ug/L	E
Anthracene	120-12-7	1	1.0	**31.8**	ug/L	
Carbazole	86-74-8	1	1.0	**27.2**	ug/L	
Fluoranthene	206-44-0	1	1.0	**51.3**	ug/L	
Pyrene	129-00-0	1	1.0	**43.4**	ug/L	
Benzo(a)anthracene	56-55-3	1	1.0	**8.9**	ug/L	
Chrysene	218-01-9	1	1.0	**8.8**	ug/L	
Benzo(a)pyrene	50-32-8	1	1.0	**3.5**	ug/L	
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	**417**	ug/L	E
Surrogate: 2-Fluorobiphenyl			*54.4-120 %*	*81.8*	*%*	
Surrogate: 2,4,6-Tribromophenol			*49.3-128 %*	*88.6*	*%*	
Surrogate: p-Terphenyl-d14			*60-120 %*	*93.7*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	27-Mar-2018 14:33

MW-01S-20180309

18C0203-16 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270D-SIM — Sampled: 03/09/2018 11:15

Instrument: NT8 — Analyzed: 22-Mar-2018 13:51

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq)
Preparation Batch: BGC0352 — Sample Size: 500 mL
Prepared: 15-Mar-2018 — Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Benzo(a)anthracene	56-55-3	5	0.50	**12.2**	ug/L	D
Chrysene	218-01-9	5	0.50	**12.0**	ug/L	D
Benzofluoranthenes, Total		5	1.00	**8.89**	ug/L	D
Benzo(a)pyrene	50-32-8	5	0.50	**4.29**	ug/L	D
Indeno(1,2,3-cd)pyrene	193-39-5	5	0.50	**1.08**	ug/L	D
Dibenzo(a,h)anthracene	53-70-3	5	0.50	ND	ug/L	U
Surrogate: 2-Methylnaphthalene-d10			*31-120 %*	*38.6*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14			*10-125 %*	*52.4*	*%*	

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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	27-Mar-2018 14:33

MW-01S-20180309

18C0203-16 (Water)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 03/09/2018 11:15

Instrument: FID3 — Analyzed: 27-Mar-2018 06:01

Sample Preparation:	Preparation Method: EPA 3510C SepF	
	Preparation Batch: BGC0357	Sample Size: 500 mL
	Prepared: 14-Mar-2018	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Silica Gel	
	Cleanup Batch: CGC0154	Initial Volume: 1 mL
	Cleaned: 26-Mar-2018	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Sulfuric Acid	
	Cleanup Batch: CGC0153	Initial Volume: 1 mL
	Cleaned: 26-Mar-2018	Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)		1	100	**6230**	ug/L	E
HC ID: DRO						
Motor Oil Range Organics (C24-C38)		1	200	**446**	ug/L	
HC ID: RRO						
Creosote Range Organics (C12-C22)	8001-58-9	1	200	**31500**	ug/L	E
HC ID: CREOSOTE						
Surrogate: o-Terphenyl			*50-150 %*	*78.0*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	27-Mar-2018 14:33

MW-01S-20180309

18C0203-16RE1 (Water)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 03/09/2018 11:15

Instrument: NT3 — Analyzed: 19-Mar-2018 12:26

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGC0500 — Sample Size: 0.5 mL
Prepared: 16-Mar-2018 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)		1	2000	**25900**	ug/L	
HC ID: GRO						
Surrogate: Toluene-d8			*80-120 %*	*100*	*%*	
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	27-Mar-2018 14:33

MW-01S-20180309

18C0203-16RE1 (Water)

Semivolatile Organic Compounds

Method: EPA 8270D — Sampled: 03/09/2018 11:15

Instrument: NT12 — Analyzed: 15-Mar-2018 16:54

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BGC0354 — Sample Size: 500 mL
Prepared: 13-Mar-2018 — Final Volume: 0.5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	50	50.0	**3560**	ug/L	D
Acenaphthylene	208-96-8	50	50.0	ND	ug/L	U
Acenaphthene	83-32-9	50	50.0	**334**	ug/L	D
2-Methylnaphthalene	91-57-6	50	50.0	**644**	ug/L	D
Dibenzofuran	132-64-9	50	50.0	**120**	ug/L	D
Fluorene	86-73-7	50	50.0	**122**	ug/L	D
Pentachlorophenol	87-86-5	50	500	**1260**	ug/L	D
Phenanthrene	85-01-8	50	50.0	**169**	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	**51.2**	ug/L	D
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	**449**	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	27-Mar-2018 14:33

MW-01S-20180309

18C0203-16RE1 (Water)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 03/09/2018 11:15

Instrument: FID3 — Analyzed: 27-Mar-2018 09:48

Sample Preparation:	Preparation Method: EPA 3510C SepF	
	Preparation Batch: BGC0357	Sample Size: 500 mL
	Prepared: 14-Mar-2018	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Silica Gel	
	Cleanup Batch: CGC0154	Initial Volume: 1 mL
	Cleaned: 26-Mar-2018	Final Volume: 1 mL
Sample Cleanup:	Cleanup Method: Sulfuric Acid	
	Cleanup Batch: CGC0153	Initial Volume: 1 mL
	Cleaned: 26-Mar-2018	Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)		10	1000	**5610**	ug/L	D
HC ID: DRO						
Motor Oil Range Organics (C24-C38)		10	2000	ND	ug/L	U
Creosote Range Organics (C12-C22)	8001-58-9	10	2000	**28600**	ug/L	D
HC ID: CREOSOTE						
Surrogate: o-Terphenyl			*50-150 %*	*70.2*	*%*	

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	27-Mar-2018 14:33

Volatile Organic Compounds - Quality Control

Batch BGC0477 - 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 (BGC0477-BLK2)				Prepared: 16-Mar-2018 Analyzed: 16-Mar-2018 15:07						
Gasoline Range Organics (Tol-Nap)	ND	100	ug/L							U
Surrogate: Toluene-d8	4.88		ug/L	*5.00*		*97.6*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.05		ug/L	*5.00*		*101*	*80-120*			
LCS (BGC0477-BS2)				Prepared: 16-Mar-2018 Analyzed: 16-Mar-2018 13:26						
Gasoline Range Organics (Tol-Nap)	985	100	ug/L	1000		98.5	72-128			
Surrogate: Toluene-d8	4.98		ug/L	*5.00*		*99.6*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.24		ug/L	*5.00*		*105*	*80-120*			
LCS Dup (BGC0477-BSD2)				Prepared: 16-Mar-2018 Analyzed: 16-Mar-2018 13:51						
Gasoline Range Organics (Tol-Nap)	1040	100	ug/L	1000		104	72-128	5.13	30	
Surrogate: Toluene-d8	4.94		ug/L	*5.00*		*98.8*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.26		ug/L	*5.00*		*105*	*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	27-Mar-2018 14:33

Volatile Organic Compounds - Quality Control

Batch BGC0500 - 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 (BGC0500-BLK2)				Prepared: 19-Mar-2018 Analyzed: 19-Mar-2018 11:58						
Gasoline Range Organics (Tol-Nap)	ND	100	ug/L							U
Surrogate: Toluene-d8	4.90		ug/L	*5.00*		*98.0*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.12		ug/L	*5.00*		*102*	*80-120*			
LCS (BGC0500-BS2)				Prepared: 19-Mar-2018 Analyzed: 19-Mar-2018 09:52						
Gasoline Range Organics (Tol-Nap)	1050	100	ug/L	1000		105	72-128			
Surrogate: Toluene-d8	5.04		ug/L	*5.00*		*101*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.25		ug/L	*5.00*		*105*	*80-120*			
LCS Dup (BGC0500-BSD2)				Prepared: 19-Mar-2018 Analyzed: 19-Mar-2018 10:17						
Gasoline Range Organics (Tol-Nap)	1110	100	ug/L	1000		111	72-128	5.54	30	
Surrogate: Toluene-d8	5.00		ug/L	*5.00*		*100*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.35		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	27-Mar-2018 14:33

Semivolatile Organic Compounds - Quality Control

Batch BGC0354 - 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 (BGC0354-BLK1)				Prepared: 13-Mar-2018 Analyzed: 15-Mar-2018 22:31						
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	17.8		ug/L	*25.0*		*71.1*	*54.4-120*			
Surrogate: 2,4,6-Tribromophenol	30.8		ug/L	*37.5*		*82.1*	*49.3-128*			
Surrogate: p-Terphenyl-d14	23.3		ug/L	*25.0*		*93.4*	*60-120*			
LCS (BGC0354-BS1)				Prepared: 13-Mar-2018 Analyzed: 14-Mar-2018 17:21						
Naphthalene	20.7	1.0	ug/L	25.0		82.7	51.9-120			
Acenaphthylene	22.6	1.0	ug/L	25.0		90.4	56.5-120			
Acenaphthene	23.4	1.0	ug/L	25.0		93.5	60.9-120			
2-Methylnaphthalene	19.8	1.0	ug/L	25.0		79.1	56.5-120			
Dibenzofuran	21.7	1.0	ug/L	25.0		86.7	61.9-120			
Fluorene	22.8	1.0	ug/L	25.0		91.0	62.3-120			
Pentachlorophenol	65.3	10.0	ug/L	75.0		87.0	40.7-124			
Phenanthrene	23.8	1.0	ug/L	25.0		95.0	61-120			
Anthracene	22.6	1.0	ug/L	25.0		90.3	64.6-120			
Carbazole	22.3	1.0	ug/L	25.0		89.2	64.6-120			
Fluoranthene	23.0	1.0	ug/L	25.0		91.9	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	27-Mar-2018 14:33

Semivolatile Organic Compounds - Quality Control

Batch BGC0354 - 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 (BGC0354-BS1)				Prepared: 13-Mar-2018 Analyzed: 14-Mar-2018 17:21						
Pyrene	29.2	1.0	ug/L	25.0		117	66.4-120			
Benzo(a)anthracene	24.3	1.0	ug/L	25.0		97.3	65.9-120			
Chrysene	24.7	1.0	ug/L	25.0		99.0	61.5-120			
Benzo(a)pyrene	25.8	1.0	ug/L	25.0		103	74-121			
Indeno(1,2,3-cd)pyrene	27.6	1.0	ug/L	25.0		111	55.6-120			
Dibenzo(a,h)anthracene	28.0	1.0	ug/L	25.0		112	55-120			
Benzo(g,h,i)perylene	28.5	1.0	ug/L	25.0		114	49.4-120			
1-Methylnaphthalene	22.2	1.0	ug/L	25.0		89.0	54.4-120			
Surrogate: 2-Fluorobiphenyl	22.8		ug/L	*25.0*		*91.0*	*54.4-120*			
Surrogate: 2,4,6-Tribromophenol	41.2		ug/L	*37.5*		*110*	*49.3-128*			
Surrogate: p-Terphenyl-d14	33.0		ug/L	*25.0*		*132*	*60-120*			*
LCS Dup (BGC0354-BSD1)				Prepared: 13-Mar-2018 Analyzed: 14-Mar-2018 17:54						
Naphthalene	18.2	1.0	ug/L	25.0		72.8	51.9-120	12.60	30	
Acenaphthylene	20.6	1.0	ug/L	25.0		82.3	56.5-120	9.42	30	
Acenaphthene	21.2	1.0	ug/L	25.0		84.7	60.9-120	9.85	30	
2-Methylnaphthalene	17.8	1.0	ug/L	25.0		71.1	56.5-120	10.70	30	
Dibenzofuran	19.8	1.0	ug/L	25.0		79.4	61.9-120	8.80	30	
Fluorene	21.2	1.0	ug/L	25.0		84.8	62.3-120	7.09	30	
Pentachlorophenol	60.8	10.0	ug/L	75.0		81.1	40.7-124	7.08	30	
Phenanthrene	21.5	1.0	ug/L	25.0		85.9	61-120	10.10	30	
Anthracene	20.7	1.0	ug/L	25.0		82.9	64.6-120	8.44	30	
Carbazole	20.7	1.0	ug/L	25.0		82.7	64.6-120	7.57	30	
Fluoranthene	21.8	1.0	ug/L	25.0		87.3	67.9-120	5.11	30	
Pyrene	25.8	1.0	ug/L	25.0		103	66.4-120	12.20	30	
Benzo(a)anthracene	22.7	1.0	ug/L	25.0		90.6	65.9-120	7.09	30	
Chrysene	23.2	1.0	ug/L	25.0		92.8	61.5-120	6.40	30	
Benzo(a)pyrene	24.5	1.0	ug/L	25.0		97.8	74-121	5.34	30	
Indeno(1,2,3-cd)pyrene	25.5	1.0	ug/L	25.0		102	55.6-120	7.86	30	
Dibenzo(a,h)anthracene	25.9	1.0	ug/L	25.0		104	55-120	7.79	30	
Benzo(g,h,i)perylene	26.2	1.0	ug/L	25.0		105	49.4-120	8.30	30	
1-Methylnaphthalene	20.1	1.0	ug/L	25.0		80.3	54.4-120	10.30	30	
Surrogate: 2-Fluorobiphenyl	20.4		ug/L	*25.0*		*81.4*	*54.4-120*			
Surrogate: 2,4,6-Tribromophenol	37.1		ug/L	*37.5*		*99.0*	*49.3-128*			

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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	27-Mar-2018 14:33

Semivolatile Organic Compounds - Quality Control

Batch BGC0354 - 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 (BGC0354-BSD1)				Prepared: 13-Mar-2018 Analyzed: 14-Mar-2018 17:54						
Surrogate: p-Terphenyl-d14	27.9		ug/L	*25.0*		*112*	*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	27-Mar-2018 14:33

Semivolatile Organic Compounds - SIM - Quality Control

Batch BGC0352 - 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 (BGC0352-BLK1)				Prepared: 15-Mar-2018 Analyzed: 20-Mar-2018 17:56						
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	2.02		ug/L	*3.00*		*67.2*	*31-120*			
Surrogate: Dibenzo[a,h]anthracene-d14	1.96		ug/L	*3.00*		*65.2*	*10-125*			
LCS (BGC0352-BS1)				Prepared: 15-Mar-2018 Analyzed: 20-Mar-2018 18:23						
Benzo(a)anthracene	1.97	0.10	ug/L	3.00		65.7	37-120			
Chrysene	2.09	0.10	ug/L	3.00		69.7	48-120			
Benzofluoranthenes, Total	7.17	0.20	ug/L	9.00		79.7	46-120			
Benzo(a)pyrene	1.87	0.10	ug/L	3.00		62.2	25-120			
Indeno(1,2,3-cd)pyrene	2.04	0.10	ug/L	3.00		68.2	32-120			
Dibenzo(a,h)anthracene	2.08	0.10	ug/L	3.00		69.3	21-120			
Surrogate: 2-Methylnaphthalene-d10	1.79		ug/L	*3.00*		*59.8*	*31-120*			
Surrogate: Dibenzo[a,h]anthracene-d14	1.48		ug/L	*3.00*		*49.5*	*10-125*			
LCS Dup (BGC0352-BSD1)				Prepared: 15-Mar-2018 Analyzed: 20-Mar-2018 18:50						
Benzo(a)anthracene	2.44	0.10	ug/L	3.00		81.3	37-120	21.10	30	
Chrysene	2.53	0.10	ug/L	3.00		84.3	48-120	19.00	30	
Benzofluoranthenes, Total	8.91	0.20	ug/L	9.00		99.0	46-120	21.60	30	
Benzo(a)pyrene	2.31	0.10	ug/L	3.00		77.0	25-120	21.20	30	
Indeno(1,2,3-cd)pyrene	2.72	0.10	ug/L	3.00		90.5	32-120	28.20	30	
Dibenzo(a,h)anthracene	2.74	0.10	ug/L	3.00		91.4	21-120	27.50	30	
Surrogate: 2-Methylnaphthalene-d10	1.92		ug/L	*3.00*		*64.1*	*31-120*			
Surrogate: Dibenzo[a,h]anthracene-d14	2.13		ug/L	*3.00*		*70.9*	*10-125*			

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	27-Mar-2018 14:33

Petroleum Hydrocarbons - Quality Control

Batch BGC0357 - EPA 3510C SepF

Instrument: FID3 Analyst: MDL

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BGC0357-BLK1)				Prepared: 14-Mar-2018 Analyzed: 26-Mar-2018 23:27						
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	347		ug/L	*450*		*77.0*	*50-150*			
LCS (BGC0357-BS1)				Prepared: 14-Mar-2018 Analyzed: 26-Mar-2018 23:47						
Diesel Range Organics (C12-C24)	2490	100	ug/L	3000		83.1	56-120			
Surrogate: o-Terphenyl	356		ug/L	*450*		*79.2*	*50-150*			
LCS Dup (BGC0357-BSD1)				Prepared: 14-Mar-2018 Analyzed: 27-Mar-2018 00:06						
Diesel Range Organics (C12-C24)	2400	100	ug/L	3000		80.1	56-120	3.60	30	
Surrogate: o-Terphenyl	349		ug/L	*450*		*77.5*	*50-150*			

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	27-Mar-2018 14:33

Phenols - Quality Control

Batch BGC0385 - EPA 3510C SepF

Instrument: ECD8 Analyst: VTS

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BGC0385-BLK1)				Prepared: 15-Mar-2018 Analyzed: 24-Mar-2018 12:34						
Pentachlorophenol	ND	0.25	ug/L							U
Surrogate: 2,4,6-Tribromophenol	2.30		ug/L	*2.50*		*92.1*	*26-120*			
Surrogate: 2,4,6-Tribromophenol [2C]	1.60		ug/L	*2.50*		*64.1*	*26-120*			
LCS (BGC0385-BS1)				Prepared: 15-Mar-2018 Analyzed: 24-Mar-2018 12:52						
Pentachlorophenol	1.67	0.25	ug/L	2.50		66.8	48-120			
Surrogate: 2,4,6-Tribromophenol	2.41		ug/L	*2.50*		*96.3*	*26-120*			
Surrogate: 2,4,6-Tribromophenol [2C]	1.66		ug/L	*2.50*		*66.5*	*26-120*			
LCS Dup (BGC0385-BSD1)				Prepared: 15-Mar-2018 Analyzed: 24-Mar-2018 13:10						
Pentachlorophenol	1.69	0.25	ug/L	2.50		67.7	48-120	1.42	30	
Surrogate: 2,4,6-Tribromophenol	2.45		ug/L	*2.50*		*98.2*	*26-120*			
Surrogate: 2,4,6-Tribromophenol [2C]	1.68		ug/L	*2.50*		*67.1*	*26-120*			

Landau Associates, Inc.	Project: Cascade Pole	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	27-Mar-2018 14:33

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	
130 2nd Avenue S.	Project Number: Cascade Pole	**Reported:**
Edmonds WA, 98020	Project Manager: Christine Kimmel	27-Mar-2018 14:33

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

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Gasoline Range Organics (C5-C12) WADOE,DoD-ELAP

Code	Description	Number	Expires
ADEC	Alaska Dept of Environmental Conservation	UST-033	05/11/2018
CALAP	California Department of Public Health CAELAP	2748	06/30/2018
DoD-ELAP	DoD-Environmental Laboratory Accreditation Program	66169	02/07/2019
NELAP	ORELAP - Oregon Laboratory Accreditation Program	WA100006	05/11/2018
WADOE	WA Dept of Ecology	C558	06/30/2018
WA-DW	Ecology - Drinking Water	C558	06/30/2018

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Notes and Definitions

U	This analyte is not detected above the applicable reporting or detection limit.
P1	The reported value is greater than 40% difference between the concentrations determined on two GC columns where applicable.
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL)
D1	Surrogate was not detected due to sample extract dilution
D	The reported value is from a dilution
*	Flagged value is not within established control limits.
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.