AECOM

Environment

Prepared for
Port of Vancouver USA
3103 NW Lower River Road
Vancouver, Washington 98660

Submitted to
Washington Department of Ecology

Submitted by
AECOM
111 SW Columbia
Suite 1500
Portland, Oregon 97201

60410261
November 2020

Groundwater Monitoring Letter Report – September 2020

Former Fort Vancouver Plywood Site
Port of Vancouver USA
Vancouver, Washington

November 23, 2020

Mr. Matt Graves
Environmental Manager
Port of Vancouver USA
3103 NW Lower River Road
Vancouver, Washington 98660

Re: Groundwater Monitoring Letter Report – September 2020
Former Fort Vancouver Plywood Site
Port of Vancouver USA
Vancouver, Washington
AECOM Job No. 60519969

Dear Mr. Graves:

AECOM has prepared this Groundwater Monitoring Letter Report on behalf of the Port of Vancouver USA (the Port). This letter report summarizes the results of the September 2020 groundwater monitoring event conducted at Cell 1 and Cell 2 of the Former Fort Vancouver Plywood (FVP) Site (herein referred to as the Site). This monitoring event is referenced as the September 2020 monitoring event.

1 Site Location and Background

The Site is located at West Eighth Street and Port Way, in an industrial-zoned area adjacent to the Columbia River, at the Port in Vancouver, Washington (Figure 1). The Site consists of approximately 13 acres of nearly level paved and unpaved land. The unpaved land exists along the shoreline of the Columbia River, and the remainder of the Site is paved. The northern portion of the Site is leased by the Great Western Malting Company, and the rest of the Site is leased by Pacific Coast Shredding, a metal recycling/processing facility (see Figure 2).

Great Western Malting Company is also located on the north adjacent property, and the former Brazier Forest Industries leasehold is located on the northeast adjacent property. The Site is bordered by Port Way to the southeast and the Columbia River to the southwest (see Figure 2).

The Site was occupied by plywood manufacturers and other lumber-related operations from the mid-1920s to the mid-1990s. FVP operated at the Site from 1955 until July 1996, when site operations terminated, and the leasehold reverted to the Port. Former facilities at the Site included a wood processing and plywood manufacturing plant, chemical storage, a boiler house, a maintenance shop, fuel storage areas, a log yard, a retail store/warehouse, an oil/water separator, diesel underground storage tanks (USTs), and an office building. In July 1997, the Port demolished all structures associated with the plywood mill and consolidated wood debris from the former log yard. In September 1997, the Port installed a riprap wall along the Site boundary to protect the shoreline from further erosion by the Columbia River (ERM, 2008a and 2008b).

From 2012 to 2014, the Port constructed the West Vancouver Freight Access Project through the Site. The locations of the rail track centerline, retaining walls, and trench structure for the West Vancouver Freight Access Project are indicated on Figure 2.

2 Site Hydrogeology

Two groundwater-bearing zones are present within the upper 65 feet of soils explored beneath the Site. These include a shallow water table unit (Shallow Zone) and a deeper, confined aquifer referred to herein as the Deeper Unconsolidated Aquifer (USGS 1993). The two saturated zones are separated by a lower-permeability confining layer that ranges in thickness from approximately 14 to 40 feet. The Unconsolidated Aquifer was encountered below the confining layer at depths ranging from 49 to 55 feet below ground surface (bgs) (Ecology, 1999 and 2000).

The general direction of the hydraulic gradient (and presumed direction of groundwater flow) in the Shallow Zone is to the south, toward the Columbia River. According to the Cleanup Action Plans (CAP), the Shallow Zone horizontal hydraulic gradient at the Site was calculated to range from approximately 0.016 to 0.019 feet per foot (ft/ft) at Cell 1 and 0.01 to 0.02 ft/ft at Cell 2 (Ecology, 1999 and 2000). The direction of the hydraulic gradient and presumed groundwater flow in the Deeper Unconsolidated Aquifer appears to be toward the west in response to groundwater pumping by the Port and the Port's tenants. A net downward vertical gradient exists between the Shallow Zone and the Deeper Unconsolidated Aquifer (Ecology, 1999).

Near-surface (upper 10 feet) soils beneath the Site consist predominantly of sand with varying amounts of silt. Considerable amounts of anthropogenic debris, including rubble (brick and concrete), wood ash, and trash, have been identified in the upper 10 feet of soil (Ecology, 1999).

3 Compliance Monitoring Plan

3.1 Agreed Orders

Presently the Site is separated into two areas designated as Cell 1 (C1) and Cell 2 (C2). Two Agreed Orders between the Port and Washington State Department of Ecology (Ecology) are in place for this Site:

- Agreed Order No. 99TC-S108 applies to C1
- Agreed Order No. 99TCPSR-93 applies to C2

In accordance with Agreed Orders, the Port completed a remedial investigation and feasibility study (RI/FS) in 1998. The RI/FS identified lead, total petroleum hydrocarbons (TPH), and polycyclic aromatic hydrocarbons (PAHs) concentrations above Ecology Model Toxics Control Act (MTCA) Method A or Method C industrial soil cleanup levels (CULs). The RI/FS also indicated that the area adjacent to the Columbia River contained buried anthropogenic debris and concentrations of soluble metals that could leach to the Columbia River. Pursuant to the conditions of the Agreed Orders, the Port completed Interim Actions at C1 from November 1998 to February 1999 and at C2 from October 2000 to December 2000 (ERM, 2008a and 2008b).

A total of 26 monitoring wells were originally located in C1 and C2. These monitoring wells (MWs) are listed below and on Table 1 along with multiple replacement wells which are discussed in Section 3.3.

- Deeper Unconsolidated Aquifer
  - C1-MW-6B
  - C2-MW-12B and C2-MW-13B

- Shallow Zone
  - C1-MW-1 through C1-MW-9
  - C2-MW-1 through C2-MW-11 and C2-MW-14 through C2-MW-16

The groundwater CULs and chemicals of concern (COCs) as determined by the Agreed Orders are described in the following subsections.

3.2 Groundwater Cleanup Levels

3.2.1 Deeper Unconsolidated Aquifer

Groundwater in the Deeper Unconsolidated Aquifer is used as a potable and industrial water supply source; consequently, Ecology's MTCA Method A and B groundwater CULs are used to assess potential adverse impacts to the Unconsolidated Aquifer.

In accordance with the Agreed Orders, the conditional point of compliance (POC) for groundwater within the Unconsolidated Aquifer is throughout the Site as represented by the following wells:

- C1-MW-6B
- C2-MW-12B and C2-MW-13B

3.2.2 Shallow Zone

The Shallow Zone groundwater cannot be used for drinking water due to low yield. However, the shallow groundwater discharges to the Columbia River at the Site. Consequently, the Shallow Zone CULs are based on protection of surface water and are derived from the lowest of the following screening criteria for each analyte:

- Ecology's MTCA Method B surface water CULs in accordance with Washington Administrative Code (WAC) 173-340-730
- Ecology's acute freshwater surface water quality criteria in accordance with WAC 173-201A-240
- US Environmental Protection Agency (EPA)'s National Toxics Rule human health criteria for surface water based on 40 Code of Federal Regulations (CFR) 131.36

In addition to shallow groundwater discharges to the Columbia River, there are indications that the Shallow Zone is hydraulically connected with the Deeper Unconsolidated Aquifer. Because the deeper aquifer is a water supply source, groundwater occurring in the Shallow Zone is also compared to Ecology's MTCA Method A and B groundwater CULs.

For the Shallow Zone groundwater, the conditional POC was established as the point where the groundwater discharges to surface water. Therefore, in the Agreed Orders, the Shallow Zone conditional POC wells for the Site included the following seven shoreline wells.

- C1-MW-3, C1-MW-4, C1-MW-5, and C1-MW-8
- C2-MW-9, C2-MW-10, and C2-MW-11

3.3 Past Modifications to the Compliance Monitoring Plan

From September 2001 until March 2011, groundwater monitoring was conducted tri-annually (first, second, and fourth quarters) at each Cell in accordance with the Agreed Orders and the groundwater monitoring schedule proposed in a letter from Kennedy/Jenks Consultants to Ecology dated September 17, 2001. Mr. Alexanian approved the monitoring schedule in an email to the Port dated October 4, 2001 (ERM, 2008a and 2008b).

Since September 2001, the monitoring plan included the collection of groundwater samples from 14 of the 26 monitoring wells listed in Section 3.1 and depth to groundwater measurements at all 26 wells during each event. The 14 sampled wells included the 10 conditional POC wells and C1-MW-6, C1-MW-7, C2-MW-3, and C2-MW-7. Following approval from Ecology in 2004, conditional POC wells C1-MW-5 and C1-MW-8 were no longer required to be sampled.

The COCs for both C1 and C2 in September 2001 originally included volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), and metals. Gasoline-range hydrocarbons (gasoline) and diesel- and oil-range hydrocarbons (diesel and oil) were also included as COCs for C2.

By 2007, following multiple correspondences between Ecology and the Port, monitoring of VOCs and total and dissolved metals was discontinued for both cells, and the VOC suite was reduced for a portion of the wells in C1 to benzene, toluene, ethylbenzene, and xylenes (BTEX) and methyl tert-butyl ether (MTBE) (ERM, 2008a and 2008b).

In April 2011, Ecology approved: a reduction in monitoring frequency from tri-annual to semi-annual (first and third quarters), the discontinuation of VOC analysis for C2-MW-3 and C2-MW-10, and the removal of the following eight monitoring wells from the groundwater monitoring plan (Kennedy/Jenks, 2011; Ecology, 2011).

- C1-MW-6
- C1-MW-6B
- C2-MW-4

- C2-MW-5
- C2-MW-7
- C2-MW-8
- C2-MW-13B
- C2-MW-16

Ecology requested in the April 2011 letter that the monitoring of C1-MW-3 continue to determine if any contaminant migration occurs as a result of the West Vancouver Freight Access Project (Ecology, 2011).

In 2012 and 2013, monitoring wells C1-MW-6, C1-MW-6B, C2-MW-5, C2-MW-8 and C2-MW-13B were decommissioned. An attempt was made to locate and decommission monitoring wells C2-MW-4, C2-MW-7, and C2-MW-16 in September 2012; however, these monitoring wells were inadvertently paved over and not locatable.

The construction of the West Vancouver Freight Access Project required the relocation of monitoring wells C1-MW-3, C1-MW-5, and C1-MW-8. The Port submitted a request to Ecology for the relocation of the three monitoring wells, and in a letter dated April 16, 2012, Ecology approved the relocations. In 2012, the three monitoring wells were decommissioned, and C1-MW-3 and C1-MW-5 were re-installed in the same approximate configuration and depths as the original monitoring wells (with the same designations). C1-MW-8 was reinstalled in July 2014 slightly to the southwest with the same approximate configuration and depth; however, the replacement is labeled C1-MW-8(R).

Monitoring wells C2-MW-10 and C2-MW-11, installed in 1998, were both replaced with C2-MW-10(R) and C2-MW-11(R) in 2000. Subsequent replacement wells for both are summarized below:

- C2-MW-10(R) may have been inadvertently destroyed during the construction of the West Vancouver Freight Access Project or paved over, as it has not been located since March 2013. It was reinstalled in August 2015 with the same approximate configuration and depth; the replacement well is labeled C2-MW-10(R2).

- C2-MW-11(R) was abandoned in May 2014 due to construction activities at the Site. It was reinstalled in June 2014 at the same location with the same approximate configuration and depth; the replacement well is labeled C2-MW-11(R2).

3.4 Recent Modifications to the Compliance Monitoring Plan

In June 2016, Ecology approved the decommissioning of 12 monitoring wells and the reduction of the groundwater monitoring frequency from semi-annual to every 18 months (Ecology, 2016). The selected analytes for the retained monitoring wells did not change. Therefore, in November and December 2016, decommissioning activities were completed as described below and listed on Table 1 (AECOM, 2017).

- The following eight monitoring wells were successfully decommissioned.

    - C1-MW-1
    - C1-MW-2
    - C1-MW-3
    - C1-MW-5
    - C1-MW-8(R)
    - C1-MW-9
    - C2-MW-6
    - C2-MW-15

- The following four monitoring wells had been paved over and cannot be found, despite potholing and re-surveying by the Port's surveyor.

    - C2-MW-1
    - C2-MW-4
    - C2-MW-7

- C2-MW-16

In the March 2019 Groundwater Monitoring Letter Report, AECOM recommended decommissioning C1-MW-7 due to safety and well head integrity concerns as the monitoring well is located within a heavy equipment, high traffic area (AECOM, 2019a). Historically, only MTBE exceeded the CULs in groundwater samples from C1-MW-7; however, MTBE had not been detected above the CUL over the previous 11 events conducted between February 2012 and March 2019. The MTBE concentrations had been trending downward, and the concentrations had generally stabilized over the previous five events. Groundwater monitoring would continue every 18 months but without C1-MW-7. In September 2019, Ecology approved the decommissioning of C1-MW-7. In October 2020, decommissioning activities were completed as described in the Well Decommissioning Summary Letter (AECOM, 2019b) and listed on Table 1.

3.5 Current Compliance Monitoring Plan

Based on the Ecology June 2016 and September 2019 approval letters, the current compliance monitoring plan (Table 1) includes the collection of depth-to-groundwater measurements and groundwater samples from the following six monitoring wells every 18 months:

- C1-MW-4
- C2-MW-3
- C2-MW-9
- C2-MW-10(R2)
- C2-MW-11(R2)
- C2-MW-12B

The analyte list varies between the monitoring wells and is shown on Table 1.

4 Activities Conducted During this Monitoring Event

Groundwater monitoring activities completed during the September 2020 event were conducted in accordance with the following three documents.

- EPA guidance document titled *Low-Flow (Minimal Drawdown) Ground-Water Sampling Procedures* (EPA, 1996)

- Ecology letter titled *Re: Former Fort Vancouver Plywood Proposed Groundwater Sampling Procedures* (Ecology, 2002)

- Kennedy/Jenks *Second Semi-Annual 2013 Groundwater Monitoring Report* (Kennedy/Jenks, 2014)

- Ecology letter titled Re*: Approval for Reducing Groundwater Level and Groundwater Sampling Frequency at the Former Fort Vancouver Plywood Facility* (Ecology, 2017)

The groundwater monitoring activities completed during the September 2020 event are as follows:

- AECOM collected depth to groundwater measurements from the six monitoring wells included in the current compliance monitoring plan (see Section 3.5). AECOM measured the depth to groundwater in the monitoring wells using an electronic water level meter. The depth to groundwater was measured from the northern side of top of casing (TOC) and recorded on the Groundwater Level Form (Appendix A). The depth to groundwater measurements and corresponding groundwater elevations are presented on Table 2.

- AECOM collected groundwater samples from the six monitoring wells included in the current compliance monitoring plan (see Section 3.5). AECOM collected each groundwater sample following purging and stabilization of temperature, pH, conductivity, dissolved oxygen (DO), and oxidation reduction potential (ORP). A peristaltic pump was used to purge the shallow monitoring wells. The deep well, C2-MW-12B,

was purged using a bladder pump. AECOM collected groundwater samples at each monitoring well using a disposable double check valve bailer. The peristaltic pump tubing and disposable bailers were all lowered and retrieved gently and set at the center of the screen interval. Monitoring Well Sampling Field Logs for this monitoring event are included in Appendix A, and final field parameters are reported in Table 3.

- AECOM delivered the samples to Apex Laboratories of Tigard, Oregon under chain-of-custody. The samples were submitted for one or more of the analyses listed below in accordance with Table 1.
    - BTEX and MTBE by EPA Method 5030B/8260C
    - Full list of VOCs by EPA Method 8260C
    - Diesel and oil by NWTPH-Dx
    - Gasoline by NWTPH-Gx
- The sample containers were stored in a cooler with ice from sample collection until delivery to the laboratory. The chain-of-custody form is included in Appendix B with the laboratory analytical report. A field duplicate sample, collected from monitoring well C2-MW-9, and a trip blank were also submitted for analysis.
- AECOM placed purge and decontamination water into a labeled, aboveground polyethylene tank, which is temporarily staged under the 26th Avenue overpass pending characterization and disposal. Disposable sampling equipment (including tubing and nitrile gloves) was managed as municipal solid waste.

5 Results of the September 2020 Monitoring Event

The results of groundwater level measurements are summarized in Table 2. Field parameters are provided in Table 3. The groundwater analytical results are summarized in Tables 4 through 7. A copy of the laboratory analytical report is included in Appendix B.

5.1 Groundwater Elevation Monitoring

Of the remaining monitoring wells listed on Table 1, five are constructed with screened intervals intercepting the Shallow Zone (shallower than 35 feet bgs), and one, C2-MW-12B, is constructed with the screened interval intercepting the Deeper Unconsolidated Aquifer (at 40 to 50 feet bgs). Depth-to-groundwater measurements recorded on September 8, 2020 were used to calculate groundwater elevation above mean sea level at each well. All elevations are presented in North American Vertical Datum of 1988 (NAVD88).

On September 8, 2020, the groundwater elevation in C2-MW-12B, which is screened in the Deeper Unconsolidated Aquifer, was 4.92 feet[a].

On September 8, 2020, the groundwater elevations in the Shallow Zone ranged from 4.30 feet[a] (C1-MW-4) to 19.42 feet[a] (C2-MW-3). The hydraulic gradient was calculated at 0.02 ft/ft to the south-southwest, consistent with previous sampling events. Groundwater elevation contours and the inferred direction of groundwater flow from September 8, 2020 are shown on Figure 3.

5.2 Groundwater Analytical Results

Groundwater analytical results are summarized in the following subsections.

5.2.1 Volatile Organic Compounds

Samples collected during the September 2020 monitoring event from wells C1-MW-4, C2-MW-9, C2-MW-11(R2), and C2-MW-12B were analyzed for full list of VOCs.

[a] North American Vertical Datum of 1988

The VOC results for the groundwater sample collected from the Deeper Unconsolidated Aquifer wells are presented on Table 4, and the VOC results for Shallow Zone wells are presented on Table 5. Both Tables 4 and 5 include BTEX, MTBE, and any other VOC that has been detected at least once since February 2009. The VOC results from the September 2020 monitoring event are summarized in the next two subsections.

5.2.1.1 Deeper Unconsolidated Aquifer

Trichloroethene (TCE) was detected (at an estimated concentration) in groundwater collected from C2-MW-12B (0.250 µg/L) (Table 4). The concentration was below both the MTCA Method A and B groundwater CULs of 5.0 µg/L and 4.0 µg/L, respectively. This is the first detection of TCE in groundwater collected from C2-MW-12B.

5.2.1.2 Shallow Zone

1,1-dichloroethane, cis-1,2-dichloroethene, and vinyl chloride were detected in one or more of the samples collected from the wells screened in the Shallow Zone; these detections were compared to the Shallow Zone CULs presented in Section 3.2.2 and on Table 5.

Vinyl chloride was the only VOC detected in the groundwater samples from the Shallow Zone wells at concentrations above the CULs. Concentrations of vinyl chloride in the groundwater samples collected from C1-MW-9 (0.400 µg/L) and C2-MW-11(R2) (0.610 µg/L) exceeded both the MTCA Method A and B groundwater CULs of 0.20 µg/L and 0.029 µg/L, respectively. The concentration of vinyl chloride in the groundwater sample collected from C1-MW-4 (0.170 µg/L) only exceeded the MTCA Method B groundwater CUL.

5.2.2 Total Petroleum Hydrocarbons

During the September 2020 monitoring event, groundwater samples from C2-MW-3, C2-MW-9, C2-MW-10(R2), C2-MW-11(R2), and C2-MW-12B were submitted for NWTPH-Dx and NWTPH-Gx analysis.

The TPH results for the groundwater sample collected from the Deeper Unconsolidated Aquifer well are presented on Table 6, and the TPH results for Shallow Zone wells are presented on Table 7. The TPH results from the September 2020 monitoring event are summarized in the next two subsections.

5.2.2.1 Deeper Unconsolidated Aquifer

Diesel, oil, and gasoline were not detected above their respective MDLs in groundwater collected from C2-MW-12B (Table 6).

5.2.2.2 Shallow Zone

Diesel was detected in the groundwater samples collected from shallow groundwater wells C2-MW-11(R2) (0.112 mg/L) and C2-MW-10(R2) (0.328 mg/L), below the MTCA Method A groundwater CUL of 0.50 mg/L.

6 Data Quality and Management

Based on a review of the laboratory report, the analyses and results conformed to quality assurance standards, and the analytical data are of acceptable quality for their intended use. A data quality review is included in Appendix C.

Data from 2009 through September 2020 has been uploaded onto the EIM database. Under WAC 173-340-840(5), environmental sampling data for all cleanup sites must be submitted in both printed and electronic form.

7 Conclusions

Groundwater monitoring was conducted at C1 and C2 of the Site during the September 2020 event. The analytical results were generally consistent with previous monitoring events. Vinyl chloride concentrations in groundwater samples from C1-MW-4, C2-MW-9, and C2-MW-11(R2) were the only VOC detections exceeding the CULs. Gasoline, diesel, and oil concentrations in groundwater were less than the CULs in all samples.

8 Recommendations and Future Sampling Activities

Groundwater monitoring will continue every 18 months. The next monitoring event is scheduled for March 2022.

9 References

AECOM, 2017. *Well Decommissioning Summary Letter.* Former Fort Vancouver Plywood Site, Port of Vancouver USA, Vancouver, Washington. February 10.

AECOM, 2019a. *Groundwater Monitoring Letter Report – March 2019.* Former Fort Vancouver Plywood Site, Port of Vancouver USA, Vancouver, Washington. July 22.

AECOM, 2019b. *Well Decommissioning Summary Letter.* Former Fort Vancouver Plywood Site, Port of Vancouver USA, Vancouver, Washington. November 22.

Ecology, 1999. *Cleanup Action Plan.* Former Fort Vancouver Plywood Site – Cell 1. January.

Ecology, 2000. *Cleanup Action Plan.* Former Fort Vancouver Plywood Site – Cell 2. January.

Ecology, 2002. Letter from the Washington State Department of Ecology to Century West Engineering Corporation. *Re: Former Fort Vancouver Plywood Proposed Groundwater Sampling Procedures.* November 4.

Ecology, 2011. Letter from Washington State Department of Ecology to Kennedy/Jenks Consultants. *Ecology Response to Recommendations for Modification of the Groundwater Monitoring Program Former Fort Vancouver Plywood Site.* April 6.

Ecology, 2016. Letter from Washington State Department of Ecology to the Port of Vancouver. *Re: Approval for Reducing Groundwater Level and Groundwater Sampling Frequency at the Former Fort Vancouver Plywood Facility, Port of Vancouver, Vancouver, Washington.* June 28.

ERM, 2008a. *Cell 1 September 2007 Groundwater Monitoring Report and 5-Year Review.* Former Fort Vancouver Plywood, Port of Vancouver USA, Vancouver, Washington. May.

ERM, 2008b. *Cell 2 September 2007 Groundwater Monitoring Report and 5-Year Review.* Former Fort Vancouver Plywood, Port of Vancouver USA, Vancouver, Washington. May.

EPA, 1996. *Ground Water Issue. Low-Flow (Minimal Drawdown) Ground-Water Sampling Procedures.* By Robert W. Puls and Michael J. Barcelona. EPA/540/S-95/504. April.

Kennedy/Jenks, 2011. Letter from Kennedy/Jenks Consultants to the Washington State Department of Ecology. *Subject: Recommendation for Modification of the Groundwater Monitoring Program, Former Fort Vancouver Plywood Site, Port of Vancouver USA.* March 29.

Kennedy/Jenks, 2014. *Second Semi-Annual 2013 Groundwater Monitoring Report*. Port of Vancouver USA, Fort Vancouver Plywood Site. February 11.

U.S. Geological Survey (USGS), 1993. *A Description of Hydrogeologic Units in the Portland Basin, Oregon and Washington.* U.S. Geological Survey Water-Resources Investigations Report 90-4196. Prepared in cooperation with City of Portland Bureau of Water Works, Intergovernmental Resource Center, and Oregon Water Resources Department.

10 Limitations

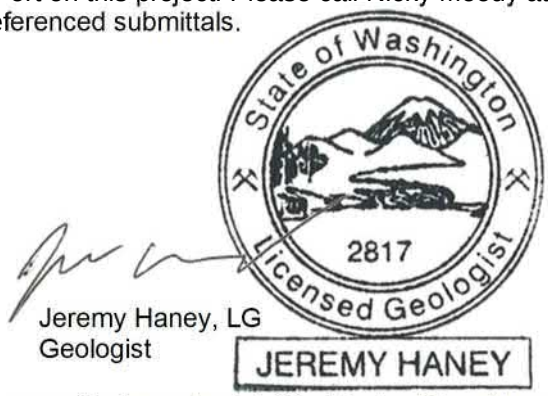
AECOM has prepared this report for use by the Port. Within the limitations of scope, schedule, and budget, our services have been executed in accordance with accepted environmental science practices in this area at the time this report was prepared. No other warranty or conditions, expressed or implied, should be understood.

We appreciate the opportunity to be of service to the Port on this project. Please call Nicky Moody at (503) 478-2765 with any questions regarding this or any other referenced submittals.

Sincerely,

AECOM

Nicky Moody
Project Manager



Jeremy Haney, LG
Geologist

cc: Craig Rankine, RG, LHG, Cleanup Project Manager/Hydrogeologist, Washington Department of Ecology, Toxics Cleanup Program, 2108 Grand Blvd, Vancouver, WA 98661-4662

Attachments

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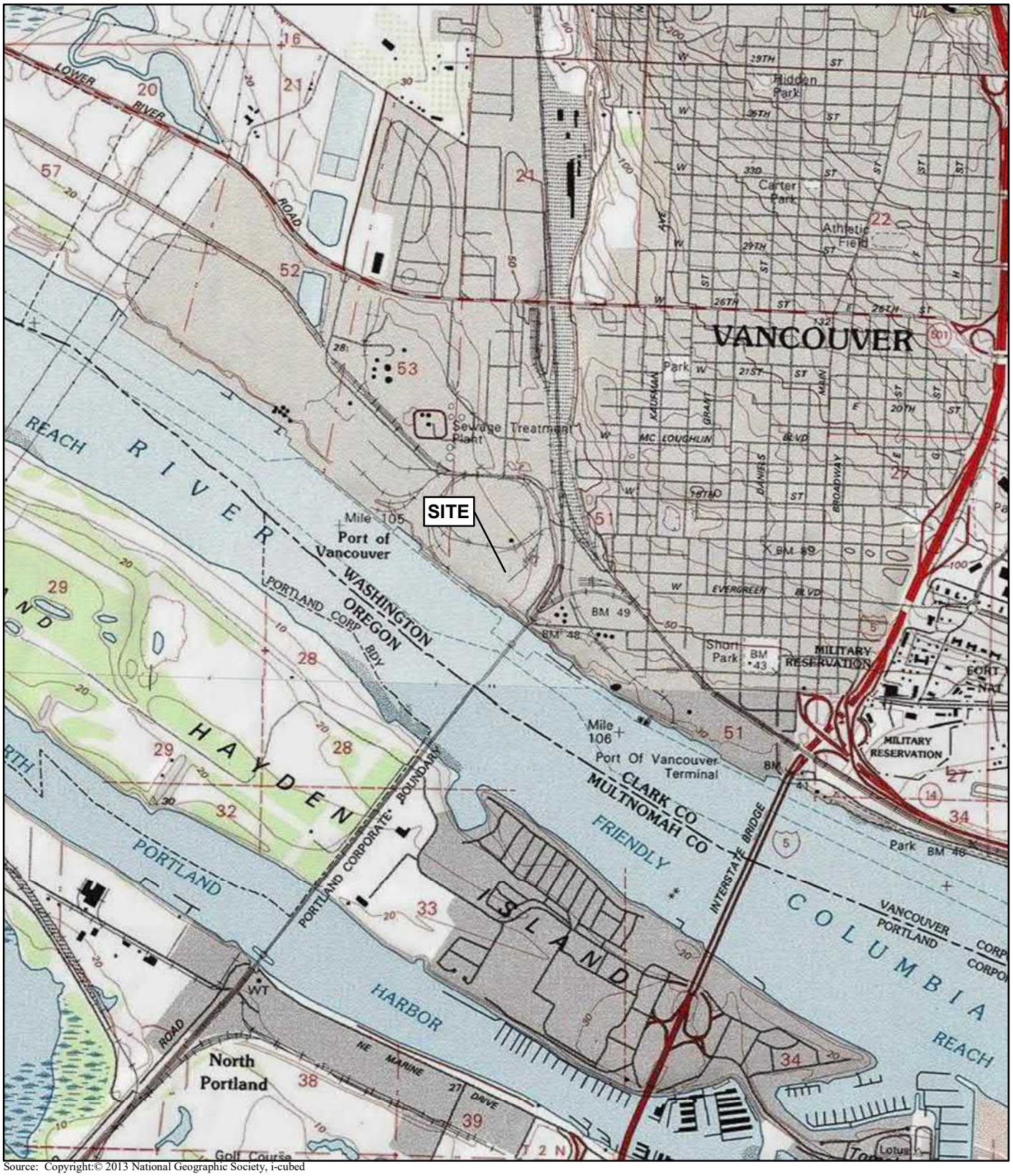
Figures



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SCALE IN FEET

AECOM

VICINITY MAP

FORMER FORT VANCOUVER PLYWOOD SITE
PORT OF VANCOUVER USA
VANCOUVER, WA

FIGURE 1

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SCALE IN FEET

AECOM

SITE MAP

FORMER FORT VANCOUVER PLYWOOD SITE
PORT OF VANCOUVER USA
VANCOUVER, WA

FIGURE 2

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150 0 150 300
SCALE IN FEET

AECOM

GROUNDWATER ELEVATION, CONTOURS, AND FLOW DIRECTION – SEPTEMBER 2020

FORMER FORT VANCOUVER PLYWOOD SITE
PORT OF VANCOUVER USA
VANCOUVER, WA

FIGURE 3

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Tables

Table 1. Compliance Monitoring Plan
Former Fort Vancouver Plywood Site

Cell #	Well ID	Aquifer	Screen Interval (feet)	Current Compliance Monitoring Plan							
				Groundwater Monitoring & Sampling				Sampling Plan			
				Sep-17	Mar-19	Sep-20	+18 months	Sampling Method	Analytes	Containers	
Cell 1	C1-MW-4	Shallow	17-32	Complete	Complete	X	X	PP/Bailer	VOCs	6 VOAs	-
	C1-MW-1	Shallow	18-33	Decommissioned in December 2016 after approval from Ecology in June 2016							
	C1-MW-2	Shallow	11-21	Decommissioned in December 2016 after approval from Ecology in June 2016							
	C1-MW-3	Shallow	15-32	Decommissioned in December 2016 after approval from Ecology in June 2016							
	C1-MW-5	Shallow	16-32	Decommissioned in December 2016 after approval from Ecology in June 2016							
	C1-MW-6	Shallow	15-25	Decommissioned in 2013 after approval from Ecology in 2011							
	C1-MW-6B	Deeper	52.5-62.5	Decommissioned in 2013 after approval from Ecology in 2011							
	C1-MW-7	Shallow	15-30	Decommissioned in October 2019 after approval from Ecology in September 2019							
	C1-MW-8	Shallow	16-31	Decommissioned in 2012 after approval from Ecology in 2011							
	C1-MW-8(R)	Shallow	15-30	Decommissioned in November 2016 after approval from Ecology in June 2016							
	C1-MW-9	Shallow	20-30	Decommissioned in December 2016 after approval from Ecology in June 2016							
Cell 2	C2-MW-3	Shallow	6-16	Complete	Complete	X	X	PP/Bailer	Gx, Dx	6 VOAs	2 Ambers
	C2-MW-9**	Shallow	25-35	Complete	Complete	X	X	PP/Bailer	VOCs, Gx, Dx	6 VOAs	2 Ambers
	C2-MW-10(R2)	Shallow	20-35	Complete	Complete	X	X	PP/Bailer	Gx, Dx	6 VOAs	2 Ambers
	C2-MW-11(R2)	Shallow	15-30	Complete	Complete	X	X	PP/Bailer	VOCs, Gx, Dx	6 VOAs	2 Ambers
	C2-MW-12B	Deeper	40-50	Complete	Complete	X	X	Bladder	VOCs, Gx, Dx	6 VOAs	2 Ambers
	C2-MW-1	Shallow	5-15	Not decommissioned, well cannot be located							
	C2-MW-2	Shallow	6-16	Decommissioned in August 2010							
	C2-MW-4	Shallow	9-19	Not decommissioned, well cannot be located							
	C2-MW-5	Shallow	6-16	Decommissioned in 2012 after approval from Ecology in 2011							
	C2-MW-6	Shallow	15-20	Decommissioned in November 2016 after approval from Ecology in June 2016							
	C2-MW-7	Shallow	15-25	Not decommissioned, well cannot be located							
	C2-MW-8	Shallow	6-16	Decommissioned in 2012 following approval from Ecology in 2011							
	C2-MW-10(R)	Shallow	18-33	Not decommissioned, well cannot be located; replaced in 2015 with C2-MW-10(R2)							
	C2-MW-11	Shallow	15-30	Decommissioned in 1998; replaced in 2000 with C2-MW-11(R)							
	C2-MW-11(R)	Shallow	15-30	Decommissioned in 2014 due to construction activities; replaced in 2014 with C2-MW-11(R2)							
	C2-MW-13B	Deeper	47-57	Decommissioned in 2012 following approval from Ecology in 2011							
	C2-MW-14	Shallow	Unknown	Decommissioned in 2002 following approval from Ecology							
	C2-MW-15	Shallow	7-22	Decommissioned in December 2016 after approval from Ecology in June 2016							
	C2-MW-16	Shallow	5-20	Not decommissioned, well cannot be located							

Sampling Schedule (18+ months)*
September 2020
March 2022
September 2023
+18 months

Notes:
= Indicates a monitoring well that was decommissioned.
= Indicates a monitoring well that was unlocatable as paved over.
X = indicates that depth to groundwater measurements will be collected.
Red = indicates active conditional Point of Compliance (POC) well in the Agreed Orders
BTEX = benzene, toluene, ethylbenzene, and total xylenes
Dx = diesel and heavy oil range organics
Gx = gasoline range organics
MTBE = methyl tert-butyl ether
PP/Bailer = purging conducted using peristaltic pump and then sampling conducted using a double check ball disposable bailer
(R) = C1-MW-8 and C2-MW-11 were replaced in July 2014.
VOA = volatile organic analysis
VOC = volatile organic carbon
** = Collect field duplicate on C2-MW-9. If not accessible, collect the field duplicate on C2-MW-11 or C2-MW-12B.

Table 2. Groundwater Elevation Results
Former Fort Vancouver Plywood Site

Well Designation	Date	Top of Casing Elevation [(a)] (feet)	Depth to Groundwater [(b)] (feet)	Total Well Depth (feet)	Groundwater Elevation (feet)	Well Screened Interval (feet)
Active Monitoring Wells						
Cell 1 - Shallow Zone						
C1-MW-4	02/26/09	29.07	22.86	29.4	6.21	17-32
	05/11/09	29.07	19.69	29.4	9.38	
	12/17/09	29.07	22.29	29.3	6.78	
	03/29/10	29.07	23.01	29.4	6.06	
	05/25/10	29.07	20.54	29.4	8.53	
	11/29/10	29.07	22.83	29.4	6.24	
	03/24/11	29.07	18.75	29.3	10.32	
	10/11/11	29.07	23.33	29.3	5.74	
	02/29/12	29.07	22.11	NM	6.96	
	09/20/12	29.07	23.47	NM	5.60	
	03/22/13	29.07	23.75	NM	5.32	
	09/23/13	29.07	NM	NM	NA	
	03/20/14	29.07	17.92	NM	11.15	
	09/02/14	29.07	24.36	NM	4.71	
	04/07/15	29.07	20.45	NM	8.62	
	09/28/15	29.07	24.33	NM	4.74	
	03/28/16	29.07	19.65	NM	9.42	
	09/11/17	29.07	24.44	NM	4.63	
	03/19/19	29.07	23.81	NM	5.26	
	09/08/20	29.07	24.77	NM	4.30	
Cell 2 - Shallow Zone						
C2-MW-3	02/26/09	32.43	12.70	15.4	19.73	6-16
	05/11/09	32.43	13.04	15.0	19.39	
	12/17/09	32.43	13.12	15.3	19.31	
	03/29/10	32.43	12.22	15.1	20.21	
	05/25/10	32.43	12.08	15.1	20.35	
	11/29/10	32.43	12.20	15.1	20.23	
	03/24/11	32.43	11.32	15.0	21.11	
	10/11/11	32.43	12.56	15.0	19.87	
	02/29/12	32.43	11.99	15.0	20.44	
	09/20/12	32.43	12.91	15.0	19.52	
	03/21/13	32.43	11.86	NM	20.57	
	09/20/13	32.43	12.52	NM	19.91	
	03/20/14	32.43	11.86	NM	20.57	
	09/02/14	32.43	12.40	NM	20.03	
	04/07/15	32.43	11.82	NM	20.61	
	09/28/15	32.43	12.81	NM	19.62	
	03/28/16	32.43	11.19	NM	21.24	
	09/11/17	32.43	12.58	NM	19.85	
	03/19/19	32.43	12.88	NM	19.55	
	09/08/20	32.43	13.01	NM	19.42	

Table 2. Groundwater Elevation Results
Former Fort Vancouver Plywood Site

Well Designation	Date	Top of Casing Elevation [(a)] (feet)	Depth to Groundwater [(b)] (feet)	Total Well Depth (feet)	Groundwater Elevation (feet)	Well Screened Interval (feet)
C2-MW-9	02/26/09	33.00	NM	NM	NA	25-35
	05/11/09	33.00	21.89	34.5	11.11	
	12/17/09	33.00	24.69	33.8	8.31	
	03/29/10	33.00	NM	NM	NA	
	05/25/10	33.00	NM	NM	NA	
	11/29/10	33.00	NM	NM	NA	
	03/24/11	33.00	NM	NM	NA	
	10/11/11	33.00	24.97	33.8	8.03	
	02/29/12	33.00	18.81	33.8	14.19	
	09/20/12	33.00	24.51	33.8	8.49	
	03/22/13	33.00	24.48	NM	8.52	
	09/23/13	33.00	25.50	NM	7.50	
	03/20/14	33.00	19.54	NM	13.46	
	09/02/14	32.25	24.49	NM	7.76	
	04/07/15	32.25	21.29	NM	10.96	
	09/28/15	32.25	25.68	NM	6.57	
	03/28/16	32.25	21.30	NM	10.95	
	09/11/17	32.25	25.16	NM	7.09	
	03/19/19	32.25	24.02	NM	8.23	
	09/08/20	32.25	25.88	NM	6.37	
C2-MW-10(R2)	09/28/15	33.57	28.38	35.45	5.19	20-35
	03/28/16	33.57	24.39	NM	9.18	
	09/11/17	33.57	27.96	NM	5.61	
	03/19/19	33.57	27.12	NM	6.45	
	09/08/20	33.57	28.55	NM	5.02	
C2-MW-11(R2)	09/02/14	30.80	25.23	NM	5.57	15-30
	04/07/15	30.80	21.90	NM	8.90	
	09/28/15	30.80	25.62	NM	5.18	
	03/28/16	30.80	21.58	NM	9.22	
	09/11/17	30.80	25.27	NM	5.53	
	03/19/19	30.80	24.35	NM	6.45	
	09/08/20	30.80	25.79	NM	5.01	
Cell 2 - Deeper Unconsolidated Aquifer						
C2-MW-12B	02/26/09	32.45	25.40	47.6	7.05	40-50
	05/11/09	32.45	21.81	46.7	10.64	
	12/17/09	32.45	24.73	47.4	7.72	
	03/29/10	32.45	25.39	46.8	7.06	
	05/25/10	32.45	22.82	46.7	9.63	
	11/29/10	32.45	25.21	46.8	7.24	
	03/24/11	32.45	21.02	46.8	11.43	
	10/11/11	32.45	26.24	46.8	6.21	
	02/29/12	32.45	24.05	46.8	8.40	
	09/20/12	32.45	26.39	46.8	6.06	
	03/21/13	32.45	25.82	NM	6.63	
	09/20/13	32.45	26.34	NM	6.11	
	03/20/14	32.45	20.12	NM	12.33	
	09/02/14	32.45	27.04	NM	5.41	
	04/07/15	32.45	23.00	NM	9.45	
	09/28/15	32.45	26.87	NM	5.58	
	03/28/16	32.45	21.97	NM	10.48	
	09/11/17	32.45	26.57	NM	5.88	
	03/19/19	32.45	25.88	NM	6.57	
	09/08/20	32.45	27.53	NM	4.92	

Table 2. Groundwater Elevation Results
Former Fort Vancouver Plywood Site

Well Designation	Date	Top of Casing Elevation [(a)] (feet)	Depth to Groundwater [(b)] (feet)	Total Well Depth (feet)	Groundwater Elevation (feet)	Well Screened Interval (feet)
Abandoned or Unlocatable Monitoring Wells						
Cell 1 - Shallow Zone						
C1-MW-1	02/26/09	30.23	NM	NM	NA	
	05/11/09	30.23	21.06	33.5	9.17	
	12/17/09	30.23	23.47	33.3	6.76	
	03/29/10	30.23	24.32	33.5	5.91	
	05/25/10	30.23	21.72	33.4	8.51	
	11/29/10	30.23	24.58	33.4	5.65	
	03/24/11	30.23	20.08	33.4	10.15	
	10/11/11	30.23	24.87	33.4	5.36	
	02/29/12	30.23	23.20	33.4	7.03	18-33
	09/20/12	30.23	25.05	33.4	5.18	
	03/21/13	30.23	24.97	NM	5.26	
	09/23/13	30.23	25.62	NM	4.61	
	03/20/14	30.23	19.25	NM	10.98	
	09/02/14	30.23	26.02	NM	4.21	
	04/07/15	30.23	22.05	33.6	8.18	
	09/28/15	30.23	25.80	NM	4.43	
	03/28/16	30.23	21.19	NM	9.04	
C1-MW-2	02/26/09	31.03	14.53	20.8	16.50	
	05/11/09	31.03	14.26	20.3	16.77	
	12/17/09	31.03	13.29	20.4	17.74	
	03/29/10	31.03	14.05	NM	16.98	
	05/25/10	31.03	14.27	20.4	16.76	
	11/29/10	31.03	13.57	NM	17.46	
	03/24/11	31.03	13.02	20.4	18.01	
	10/11/11	31.03	14.83	20.4	16.20	
	02/29/12	31.03	13.91	20.4	17.12	11-21
	09/20/12	31.03	15.15	20.4	15.88	
	03/21/13	31.03	14.38	NM	16.65	
	09/23/13	31.03	NM	NM	NA	
	03/20/14	31.03	14.66	NM	16.37	
	09/02/14	31.03	15.02	NM	16.01	
	04/07/15	31.03	14.26	NM	16.77	
	09/28/15	31.03	15.56	NM	15.47	
	03/28/16	31.03	13.59	NM	17.44	

Table 2. Groundwater Elevation Results
Former Fort Vancouver Plywood Site

Well Designation	Date	Top of Casing Elevation [(a)] (feet)	Depth to Groundwater [(b)] (feet)	Total Well Depth (feet)	Groundwater Elevation (feet)	Well Screened Interval (feet)
C1-MW-3	02/26/09	29.89	23.11	32.1	6.78	15-32
	05/11/09	29.89	20.45	31.5	9.44	
	12/17/09	29.89	22.78	31.5	7.11	
	03/29/10	29.89	23.17	31.6	6.72	
	05/25/10	29.89	21.12	31.1	8.77	
	11/29/10	29.89	NM	NM	NA	
	03/24/11	29.89	19.42	31.4	10.47	
	10/11/11	29.89	23.71	31.4	6.18	
	02/29/12	29.89	22.06	31.4	7.83	
	09/20/12	29.89	24.00	31.4	5.89	
	03/22/13	29.10	23.20	NM	5.90	
	09/23/13	29.10	NM	NM	NA	
	03/20/14	29.10	17.55	NM	11.55	
	09/02/14	29.10	23.93	NM	5.17	
	04/07/15	29.10	20.52	NM	8.58	
	09/28/15	29.10	24.02	NM	5.08	
	03/28/16	29.10	19.69	NM	9.41	
C1-MW-5	02/26/09	30.71	DRY	31.2	NA	16-32
	05/11/09	30.71	21.37	31.2	9.34	
	12/17/09	30.71	23.89	31.2	6.82	
	03/29/10	30.71	24.72	33.2	5.99	
	05/25/10	30.71	22.15	31.2	8.56	
	11/29/10	30.71	24.93	31.2	5.78	
	03/24/11	30.71	20.49	31.2	10.22	
	10/11/11	30.71	25.27	31.2	5.44	
	02/29/12	30.71	23.53	31.2	7.18	
	03/21/13	29.84	24.93	NM	4.91	
	09/23/13	29.84	25.49	NM	4.35	
	03/20/14	29.84	19.16	NM	10.68	
	09/02/14	29.84	NM	NM	NA	
	04/07/15	29.84	21.96	31.0	7.88	
	09/28/15	29.84	25.71	NM	4.13	
	03/28/16	29.84	21.14	NM	8.70	
C1-MW-6	02/26/09	31.66	NM	NM	NA	15-25
	05/11/09	31.66	12.13	27.1	19.53	
	12/18/09	31.66	12.19	26.9	19.47	
	03/29/10	31.66	NM	NM	NA	
	05/25/10	31.66	NM	NM	NA	
	11/29/10	31.66	11.29	26.7	20.37	
	03/24/11	31.66	10.75	26.6	20.91	
	10/11/11	31.66	NM	NM	NA	

Table 2. Groundwater Elevation Results
Former Fort Vancouver Plywood Site

Well Designation	Date	Top of Casing Elevation [(a)] (feet)	Depth to Groundwater [(b)] (feet)	Total Well Depth (feet)	Groundwater Elevation (feet)	Well Screened Interval (feet)
C1-MW-7	02/26/09	30.05	17.85	29.1	12.20	
	05/11/09	30.05	17.74	28.5	12.31	
	12/17/09	30.05	17.87	28.5	12.18	
	03/29/10	30.05	17.41	28.5	12.64	
	05/25/10	30.05	17.41	28.5	12.64	
	11/29/10	30.05	17.56	28.5	12.49	
	03/24/11	30.05	16.92	28.5	13.13	
	10/11/11	30.05	17.59	28.5	12.46	
	02/29/12	30.05	17.48	28.5	12.57	
	09/20/12	30.05	17.57	28.5	12.48	15-30
	03/21/13	30.05	17.50	NM	12.55	
	09/23/13	30.05	17.76	NM	12.29	
	03/20/14	30.05	17.02	NM	13.03	
	09/02/14	30.05	17.53	NM	12.52	
	04/07/15	30.05	17.24	NM	12.81	
	09/28/15	29.29	17.54	NM	11.75	
	03/28/16	29.29	16.77	NM	12.52	
	09/11/17	29.29	16.91	NM	12.38	
	03/19/19	29.29	17.11	NM	12.18	
C1-MW-8	02/26/09	30.43	23.54	32.7	6.89	
	05/11/09	30.43	20.74	31.9	9.69	
	12/17/09	30.43	22.84	31.9	7.59	
	03/29/10	30.43	25.63	36.2	4.80	
	05/25/10	30.43	21.10	31.9	9.33	16-31
	11/29/10	30.43	23.91	31.9	6.52	
	03/24/11	30.43	19.78	31.2	10.65	
	10/11/11	30.43	23.93	31.2	6.50	
	02/29/12	30.43	22.03	31.2	8.40	
	09/20/12	30.43	24.02	31.2	6.41	
C1-MW-8(R)	09/02/14	27.58	22.72	NM	4.86	
	04/07/15	27.58	18.85	NM	8.73	15-30
	09/28/15	27.58	22.68	NM	4.90	
	03/28/16	27.58	18.49	NM	9.09	
C1-MW-9	02/26/09	30.55	19.78	27.5	10.77	
	05/11/09	30.55	19.83	27.0	10.72	
	12/17/09	30.55	21.10	27.0	9.45	
	03/29/10	30.55	19.47	27.0	11.08	
	05/25/10	30.55	19.61	27.0	10.94	
	11/29/10	30.55	19.88	27.1	10.67	
	03/24/11	30.55	18.96	27.0	11.59	
	10/11/11	30.55	19.75	26.7	10.80	
	02/29/12	30.55	19.76	26.7	10.79	20-30
	09/20/12	30.55	19.86	26.7	10.69	
	03/21/13	30.55	18.95	NM	11.60	
	09/23/13	30.55	19.92	NM	10.63	
	03/20/14	30.55	19.37	NM	11.18	
	09/02/14	30.55	19.75	NM	10.80	
	04/07/15	30.55	19.77	NM	10.78	
	09/28/15	30.55	19.95	NM	10.60	
	03/28/16	30.55	18.80	NM	11.75	

Table 2. Groundwater Elevation Results
Former Fort Vancouver Plywood Site

Well Designation	Date	Top of Casing Elevation [(a)] (feet)	Depth to Groundwater [(b)] (feet)	Total Well Depth (feet)	Groundwater Elevation (feet)	Well Screened Interval (feet)
Cell 1 - Deeper Unconsolidated Aquifer						
C1-MW-6B	02/26/09	30.96	NM	NM	NA	52.5-62.5
	05/11/09	30.96	21.89	65.3	9.07	
	12/17/09	30.96	24.23	64.9	6.73	
	03/29/10	30.96	24.87	64.5	6.09	
	05/25/10	30.96	NM	NM	NA	
	11/29/10	30.96	NM	NM	NA	
	03/24/11	30.96	20.74	64.3	10.22	
	10/11/11	30.96	NM	NM	NA	
Cell 2 - Shallow Zone						
C2-MW-1	02/26/09	34.51	28.57	32.4	5.94	5-15
	05/11/09	34.51	NM	NM	NA	
	12/17/09	34.51	25.40	32.5	9.11	
	03/29/10	34.51	26.37	32.3	8.14	
	05/25/10	34.51	NM	NM	NA	
	11/29/10	34.51	NM	NM	NA	
	03/24/11	34.51	22.11	32.5	12.40	
	10/11/11	34.51	27.50	32.5	7.01	
	02/29/12	34.51	NM	NM	NA	
	09/23/13	34.51	NM	NM	NA	
	03/20/14	34.51	NM	NM	NA	
	09/02/14	34.51	NM	NM	NA	
	04/07/15	34.51	NM	NM	NA	
	09/28/15	NM	NM	NM	NM	
C2-MW-2	02/26/09	33.20	13.04	16.8	20.16	6-16
	05/11/09	33.20	13.45	16.5	19.75	
	12/17/09	33.20	NM	NM	NA	
	03/29/10	33.20	NM	NM	NA	
	05/25/10	33.20	NM	NM	NA	
	11/29/10	33.20	NM	NM	NA	
C2-MW-4	02/26/09	34.20	NM	NM	NA	9-19
	05/11/09	34.20	NM	NM	NA	
	12/17/09	34.20	NM	NM	NA	
	03/29/10	34.20	NM	NM	NA	
	05/25/10	34.20	NM	NM	NA	
	11/29/10	34.20	NM	NM	NA	
	03/24/11	34.20	NM	NM	NA	
	10/11/11	34.20	NM	NM	NA	
C2-MW-5	02/26/09	32.43	12.46	16.4	19.97	6-16
	05/11/09	32.43	12.86	14.9	19.57	
	12/17/09	32.43	13.22	15.2	19.21	
	03/29/10	32.43	12.00	14.8	20.43	
	05/25/10	32.43	11.92	14.9	20.51	
	11/29/10	32.43	11.99	14.9	20.44	
	03/24/11	32.43	11.17	14.9	21.26	
	10/11/11	32.43	NM	NM	NA	

Table 2. Groundwater Elevation Results
Former Fort Vancouver Plywood Site

Well Designation	Date	Top of Casing Elevation [a] (feet)	Depth to Groundwater [b] (feet)	Total Well Depth (feet)	Groundwater Elevation (feet)	Well Screened Interval (feet)
C2-MW-6	02/26/09	33.46	NM	NM	NA	
	05/11/09	33.46	NM	NM	NA	
	12/17/09	33.46	DRY	19.9	NA	
	03/29/10	33.46	DRY	19.7	NA	
	05/25/10	33.46	DRY	19.9	NA	
	11/29/10	33.46	NM	NM	NA	
	03/24/11	33.46	NM	NM	NA	
	10/11/11	33.46	19.48	19.9	13.98	15-20
	02/29/12	33.46	19.61	19.9	13.85	
	03/21/13	33.46	18.66	NM	14.80	
	09/20/13	33.46	19.35	NM	14.11	
	03/20/14	33.46	18.19	NM	15.27	
	09/02/14	33.46	18.19	NM	15.27	
	04/07/15	33.46	14.81	NM	18.65	
	09/28/15	33.46	19.51	NM	13.95	
	03/28/16	33.46	15.39	NM	18.07	
C2-MW-7	02/26/09	34.55	NM	NM	NA	
	05/11/09	34.55	19.22	28.2	15.33	
	12/17/09	34.55	NM	NM	NA	
	03/29/10	34.55	NM	NM	NA	15-25
	05/25/10	34.55	NM	NM	NA	
	11/29/10	34.55	NM	NM	NA	
	03/24/11	35.55	NM	NM	NA	
	10/11/11	35.55	NM	NM	NA	
C2-MW-8	02/26/09	31.90	NM	NM	NA	
	05/11/09	31.90	NM	NM	NA	
	12/17/09	31.90	DRY	14.9	NA	
	03/29/10	31.90	NM	NM	NA	6-16
	05/25/10	31.90	DRY	NM	NA	
	11/29/10	31.90	NM	NM	NA	
	03/24/11	31.90	DRY	14.6	NA	
	10/11/11	31.90	NM	NM	NA	
C2-MW-8A		30.80				
C2-MW-10(R)	02/26/09	34.18	25.72	36.2	8.46	
	05/11/09	34.18	22.61	36.1	11.57	
	12/17/09	34.18	25.39	36.4	8.79	
	03/29/10	34.18	25.63	36.2	8.55	
	05/25/10	34.18	23.60	36.1	10.58	
	11/29/10	34.18	25.93	36.2	8.25	
	03/24/11	34.18	21.95	36.1	12.23	
	10/11/11	34.18	25.99	36.1	8.19	15-30
	02/29/12	34.18	24.29	36.1	9.89	
	09/20/12	34.18	26.00	36.1	8.18	
	03/22/13	34.18	26.20	NM	7.98	
	09/23/13	34.18	NM	NM	NA	
	03/20/14	34.18	NM	NM	NA	
	09/02/14	34.18	NM	NM	NA	
	04/07/15	34.18	NM	NM	NA	

Table 2. Groundwater Elevation Results
Former Fort Vancouver Plywood Site

Well Designation	Date	Top of Casing Elevation [(a)] (feet)	Depth to Groundwater [(b)] (feet)	Total Well Depth (feet)	Groundwater Elevation (feet)	Well Screened Interval (feet)
C2-MW-11(R)	02/26/09	34.26	25.60	36.0	8.66	
	05/11/09	34.26	22.63	36.1	11.63	
	12/17/09	34.26	25.33	36.3	8.93	
	03/29/10	34.26	25.67	36.1	8.59	
	05/25/10	34.26	23.45	36.1	10.81	
	11/29/10	34.26	25.81	36.1	8.45	
	03/24/11	34.26	21.94	36.1	12.32	15-30
	10/11/11	34.26	25.91	36.1	8.35	
	02/29/12	34.26	24.17	36.1	10.09	
	09/20/12	34.26	25.85	36.1	8.41	
	03/22/13	34.26	25.95	NM	8.31	
	09/23/13	34.26	26.52	NM	7.74	
	03/20/14	34.26	21.15	NM	13.11	
C2-MW-15	02/26/09	33.06	21.56	24.3	11.50	
	05/11/09	33.06	20.72	23.9	12.34	
	12/17/09	33.06	21.92	23.9	11.14	
	03/29/10	33.06	NM	NM	NA	
	05/25/10	33.06	NM	NM	NA	
	11/29/10	33.06	NM	NM	NA	
	03/24/11	34.06	NM	NM	NA	
	10/11/11	34.06	NM	NM	NA	7-22
	02/29/12	34.06	NM	NM	NA	
	09/20/12	34.06	21.22	NM	12.84	
	03/21/13	34.06	20.21	NM	13.85	
	09/23/13	34.06	21.08	NM	12.98	
	03/20/14	34.06	18.50	NM	15.56	
	09/02/14	34.06	NM	NM	NA	
	04/07/15	34.06	18.70	NM	15.36	
	09/28/15	NM	NM	NM	NM	
C2-MW-16	02/26/09	33.76	NM	NM	NA	
	05/11/09	33.76	19.68	23.5	14.08	
	12/17/09	33.76	NM	NM	NA	
	03/29/10	33.76	NM	NM	NA	5-20
	05/25/10	33.76	NM	NM	NA	
	11/29/10	33.76	NM	NM	NA	
	03/24/11	33.76	NM	NM	NA	
	10/11/11	33.76	NM	NM	NA	
Cell 2 - Deeper Unconsolidated Aquifer						
C2-MW-13B	02/26/09	32.38	NM	NM	NA	
	05/11/09	32.38	NM	NM	NA	
	12/17/09	32.38	NM	NM	NA	
	03/29/10	32.38	NM	NM	NA	
	05/25/10	32.38	NM	NM	NA	47-57
	11/29/10	32.38	NM	NM	NA	
	03/24/11	32.38	21.35	54.98	11.03	
	10/11/11	32.38	NM	NM	NA	

Notes:

= Indicates a monitoring well that was either abandoned or unlocatable as paved over.

NM = Not measured because the well was inaccessible.

NA = Not applicable.

(a) = Elevation in feet relative to mean sea level based on ties to a local W&H Pacific Co. benchmark, vertical datum NGVD29(47).

(b) = Measured in feet below the top of the well casing.

Table 3. Groundwater Field Parameter Measurements
Former Fort Vancouver Plywood Site

Sample Location	Sample Date	Field Parameters				
		Temperature (°C)	Conductivity (mS/cm)	Dissolved Oxygen (mg/l)	pH	ORP (mV)
Active Monitoring Wells						
Cell 1 - Shallow Zone						
C1-MW-4	02/27/09	15.05	1.057	0.45	8.39	-
	05/12/09	15.52	1.217	1.32	6.92	-
	12/18/09	15.32	1.294	0.50	6.35	-
	03/30/10	14.71	0.515	0.88	6.36	-
	05/26/10	15.37	1.109	1.36	6.28	-
	11/30/10	14.2	1.366	1.10	6.54	-
	03/24/11	14.85	1.577	0.63	6.24	-
	10/11/11	15.19	1.149	1.39	7.93	-
	03/01/12	14.77	1.857	0.54	6.66	-
	09/20/12	15.48	1.262	0.97	6.33	-
	03/22/13	15.1	1.798	1.12	7.38	-
	09/23/13	NS	NS	NS	NS	-
	03/21/14	15.48	1.173	1.51	6.34	-54.2
	09/03/14	18.01	1.188	0.75	6.26	-45.1
	04/07/15	15.48	1.193	6.44	6.44	-92.2
	09/29/15	16.94	1.164	0.34	6.31	-53.4
	03/29/16	15.31	1.419	1.82	6.30	-58.1
	09/11/17	20.36	1.41	1.99	6.65	-34
	03/19/19	16.33	2.61	1.05	6.41	-81
	09/08/20	17.93	2.14	0.0	5.99	-40
Cell 2 - Shallow Zone						
C2-MW-3	02/26/09	14.22	0.284	1.64	7.21	-
	05/12/09	14.61	0.316	1.75	6.62	-
	12/17/09	14.92	0.404	0.53	6.39	-
	03/29/10	13.02	0.102	10.60	6.7	-
	05/26/10	14.15	0.216	1.59	6.21	-
	11/30/10	14.8	0.240	12.00	6.72	-
	03/25/11	13.58	0.236	1.04	6.56	-
	10/11/11	16.11	0.173	1.39	7.07	-
	02/29/12	12.84	0.242	2.10	6.55	-
	09/21/12	16.14	0.200	14.90	6.23	-
	03/21/13	14.04	0.257	2.92	7.49	-
	09/20/13	16.90	0.220	3.30	6.90	-
	03/21/14	14.02	0.157	2.28	6.49	80.1
	09/03/14	18.13	0.193	1.28	6.08	25.1
	04/07/15	16.26	0.190	2.33	6.36	4.0
	09/29/15	17.98	0.219	0.61	6.65	99.9
	03/29/16	12.66	0.162	3.09	6.79	67.4
	09/11/17	23.54	0.222	1.47	6.85	111
	03/19/19	13.21	0.270	2.10	6.74	109
	09/08/20	20.31	0.243	0.0	6.33	45

Table 3. Groundwater Field Parameter Measurements
Former Fort Vancouver Plywood Site

Sample Location	Sample Date	Field Parameters				
		Temperature (°C)	Conductivity (mS/cm)	Dissolved Oxygen (mg/l)	pH	ORP (mV)
C2-MW-9	02/26/09	NS	NS	NS	NS	-
	05/12/09	14.24	0.974	2.18	7.05	-
	12/18/09	14.07	0.903	0.72	6.49	-
	03/30/10	NS	NS	NS	NS	-
	05/26/10	NS	NS	NS	NS	-
	11/30/10	NS	NS	NS	NS	-
	03/25/11	13.71	0.879	0.37	6.61	-
	10/11/11	14.14	0.785	1.48	8.13	-
	05/22/12	12.91	0.870	0.71	8.00	-
	09/20/12	14.76	0.998	0.94	6.70	-
	03/22/13	12.52	1.239	1.41	6.84	-
	09/23/13	14.40	0.790	4.50	8.20	-
	03/21/14	14.41	0.697	1.11	6.49	-66.3
	09/03/14	16.34	0.726	0.82	6.33	-90.3
	04/07/15	14.14	0.720	0.69	6.39	-100.8
	09/28/15	17.08	0.744	0.44	6.49	-89.4
	03/28/16	14.15	0.179	4.27	6.62	-35.1
	09/11/17	18.93	0.725	1.62	6.74	-78
	03/19/19	14.46	1.010	1.64	6.61	-114
	09/09/20	18.45	0.774	0.45	6.41	-109
C2-MW-10(R2)	09/28/15	16.89	0.814	0.34	6.57	-91.1
	03/28/16	16.28	0.788	1.06	6.44	-75.1
	09/11/17	19.54	0.842	1.97	6.87	-73
	03/19/19	16.24	1.180	1.36	6.64	-104
	09/09/20	19.33	1.18	0.0	6.50	-100
C2-MW-11(R2)	09/03/14	20.03	0.760	1.59	6.10	-43.8
	04/07/15	13.87	0.709	0.42	6.70	-131.8
	09/28/15	16.61	0.723	0.43	6.60	-86.8
	3/28/2016	15.26	0.776	1.06	6.49	-126.3
	9/11/2017	18.04	0.774	2.35	6.81	-105
	3/19/2019	15.67	0.862	0.92	6.53	-78
	9/9/2020	23.02	0.770	0.0	6.51	-135
Cell 2 - Deeper Unconsolidated Aquifer						
C2-MW-12B	02/26/09	14.24	0.324	1.73	8.48	-
	05/12/09	15.03	0.325	1.79	7.20	-
	12/17/09	14.46	0.395	0.68	6.97	-
	03/29/10	14.47	0.167	8.57	7.09	-
	05/26/10	15.23	0.350	4.49	6.70	-
	11/30/10	11.05	0.186	8.47	7.08	-
	03/25/11	14.55	0.310	0.86	7.13	-
	10/11/11	14.69	0.281	4.11	7.30	-
	02/29/12	13.01	0.360	1.93	6.83	-
	09/21/12	14.02	0.311	33.60	5.73	-
	03/21/13	13.25	0.380	2.04	7.32	-
	09/20/13	15.10	0.340	3.10	7.60	-
	03/21/14	14.31	0.249	3.06	6.92	150.4
	09/03/14	17.09	0.263	1.61	6.95	43.4
	04/07/15	15.36	0.237	0.62	7.10	104.3
	09/29/15	14.94	0.256	0.70	7.10	37.9
	03/29/16	14.19	0.184	3.67	7.01	39.4
	09/11/17	20.16	0.298	6.23	7.32	105
	03/19/19	13.00	0.401	3.47	7.10	104
	09/09/20	16.13	0.328	2.33	6.67	89

Table 3. Groundwater Field Parameter Measurements
Former Fort Vancouver Plywood Site

Sample Location	Sample Date	Field Parameters				
		Temperature (°C)	Conductivity (mS/cm)	Dissolved Oxygen (mg/l)	pH	ORP (mV)
Abandoned or Unlocatable Monitoring Wells						
Cell 1 - Shallow Zone						
C1-MW-3	02/27/09	14.38	1.057	0.34	9.12	-
	05/12/09	14.84	1.123	1.43	7.02	-
	12/18/09	14.91	1.198	0.50	6.42	-
	03/30/10	13.5	0.455	0.93	6.45	-
	05/26/10	14.67	0.994	2.32	6.27	-
	11/30/10	NS	NS	NS	NS	-
	03/24/11	13.24	1.211	0.84	6.55	-
	10/12/11	14.5	0.920	1.62	7.56	-
	03/01/12	14.21	1.991	0.49	6.79	-
	09/20/12	15.27	0.944	0.91	6.44	-
	03/22/13	14.39	1.630	2.01	8.23	-
	09/23/13	NS	NS	NS	NS	-
	03/21/14	13.83	0.774	0.28	6.61	15.8
	09/03/14	20.28	1.094	1.16	6.10	-41.1
	04/07/15	14.79	1.103	0.57	6.41	-107.4
	09/29/15	16.96	0.855	0.30	6.19	-73.3
	03/29/16	12.41	0.701	3.31	6.49	59.1
C1-MW-6	02/26/09	NS	NS	NS	NS	-
	05/12/09	11.17	0.402	3.35	6.40	-
	12/18/09	11.80	0.540	0.61	6.65	-
	3/30/2010	NS	NS	NS	NS	-
	05/26/10	NS	NS	NS	NS	-
	11/30/10	NS	NS	NS	NS	-
	03/25/11	10.78	0.302	0.29	6.86	-
C1-MW-7	02/27/09	15.82	0.501	0.63	7.37	-
	05/12/09	15.63	0.877	1.64	6.78	-
	12/18/09	16.16	1.025	0.54	6.26	-
	03/30/10	15.45	0.383	0.79	6.35	-
	05/26/10	15.70	0.610	3.32	6.00	-
	11/30/10	14.46	0.973	1.18	6.59	-
	03/25/11	15.05	1.048	1.26	6.44	-
	10/12/11	16.01	0.906	1.48	7.43	-
	02/29/12	14.44	0.599	1.66	6.65	-
	09/20/12	16.14	0.772	0.93	6.28	-
	03/22/13	15.17	1.331	0.91	7.80	-
	09/23/13	16.10	1.300	7.00	8.20	-
	03/21/14	15.75	1.056	0.38	6.55	-130.5
	09/04/14	17.29	1.003	4.55	6.35	-80.1
	04/07/15	17.36	1.138	0.70	6.42	-127.0
	09/29/15	19.24	1.078	0.60	6.45	-94.4
	03/29/16	16.33	1.103	2.06	6.36	32.1
	09/11/17	21.32	1.19	1.52	6.62	-91
	03/19/19	15.78	1.69	1.18	6.40	-121
Cell 1 - Deeper Unconsolidated Aquifer						
C1-MW-6B	02/26/09	NS	NS	NS	NS	-
	05/12/09	13.33	0.255	2.47	6.84	-
	12/18/09	12.85	0.281	0.71	6.85	-
	03/29/10	12.43	0.116	11.22	7.1	-
	05/26/10	NS	NS	NS	NS	-
	11/30/10	NS	NS	NS	NS	-
	03/25/11	11.90	0.260	7.21	7.00	-

Table 3. Groundwater Field Parameter Measurements
Former Fort Vancouver Plywood Site

Sample Location	Sample Date	Field Parameters				
		Temperature (°C)	Conductivity (mS/cm)	Dissolved Oxygen (mg/l)	pH	ORP (mV)
Cell 2 - Shallow Zone						
C2-MW-7	02/26/09	NS	NS	NS	NS	-
	05/12/09	14.47	0.549	1.62	6.81	-
	12/17/09	NS	NS	NS	NS	-
	03/30/10	NS	NS	NS	NS	-
	05/26/10	NS	NS	NS	NS	-
	11/30/10	NS	NS	NS	NS	-
	03/25/11	13.44	0.885	0.30	6.72	-
C2-MW-10(R)	02/27/09	15.1	1.045	0.28	9.10	-
	05/12/09	14.71	1.065	1.71	6.72	-
	12/17/09	14.98	1.298	0.79	6.44	-
	03/29/10	14.98	0.480	8.24	6.75	-
	05/25/10	15.21	1.080	2.29	6.43	-
	11/30/10	14.4	1.253	16.00	6.78	-
	03/25/11	14.12	1.217	0.36	6.63	-
	10/12/11	14.77	0.966	1.37	7.30	-
	03/01/12	13.84	1.371	0.40	7.21	-
	09/20/12	14.30	0.992	0.86	6.47	-
	03/22/13	13.50	1.204	1.59	6.42	-
	09/23/13	NS	NS	NS	NS	-
	03/21/14	NS	NS	NS	NS	-
	09/03/14	NS	NS	NS	NS	-
	04/07/15	NS	NS	NS	NS	-
C2-MW-11(R)	02/27/09	14.44	0.931	0.41	8.41	-
	05/12/09	14.18	0.401	1.80	6.88	-
	12/18/09	14.28	1.108	0.50	6.5	-
	03/29/10	14.25	0.458	7.15	6.71	-
	05/26/10	14.23	0.893	2.18	6.31	-
	11/30/10	13.83	0.990	2.39	6.79	-
	03/25/11	13.33	1.184	0.45	6.60	-
	10/12/11	14.30	0.909	1.59	7.89	-
	03/01/12	13.36	1.342	0.33	7.07	-
	09/20/12	14.57	0.932	0.77	6.42	-
	03/22/13	13.23	1.073	1.23	6.36	-
	09/23/13	14.10	0.930	8.80	8.60	-
	03/21/14	14.14	0.597	0.52	6.65	-14.8
Cell 2 - Deeper Unconsolidated Aquifer						
C2-MW-13B	02/26/09	NS	NS	NS	NS	-
	05/12/09	NS	NS	NS	NS	-
	12/17/09	NS	NS	NS	NS	-
	03/29/10	NS	NS	NS	NS	-
	05/26/10	NS	NS	NS	NS	-
	11/30/10	NS	NS	NS	NS	-
	03/25/11	14.37	0.256	2.55	6.71	-

Notes:

= Indicates a monitoring well that was either abandoned or unlocatable as paved over.

- = not available to AECOM for this report.

°C = Degrees Celsius.

mS/cm = millisiemens per centimeter.

mg/l = milligrams per liter

mv = millivolts

NS = Not sampled because well was not accessible.

ORP = oxidation reduction potential

Table 4. Volatile Organic Compounds in the Deeper Unconsolidated Aquifer
Former Fort Vancouver Plywood Site

Well Location	Sample ID	Date Sampled	BTEX Compounds and MTBE							Historically Site Detected VOCs (Since 2009)											
			Benzene	Toluene	Ethylbenzene	m,p-Xylene	o-Xylene	Total Xylenes	Methyl Tertiary Butyl Ether	Acetone	Chloroethane	Chloromethane	1,1-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	Isopropylbenzene (Cumene)	Naphthalene	1,2,4-Trimethylbenzene	Trichloroethene	Trichlorofluoromethane	Vinyl Chloride
			µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
Ecology's MTCA Method A Groundwater Cleanup Levels			5.0	1,000	700	1,000	1,000	1,000	20	NE	NE	NE	NE	NE	NE	NE	160	NE	5.0	NE	0.20
Ecology's MTCA Method B Groundwater Cleanup Levels			0.795	640	800	1,600	1,600	1,600	24	7,200	NE	NE	7.68	400	16	800	160	NE	4.0	2,400	0.029
Active Monitoring Wells																					
Cell 2 - Deeper Unconsolidated Aquifer																					
C2-MW-12B	C2-MW-12B	02/26/09	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	---	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	0.20 U
	C2-MW-12B	05/12/09	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	---	1.0 U	1.0 U	1.0 U	**1.0**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.20 U
	C2-MW-12B	12/17/09	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	---	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.20 U
	C2-MW-12B	03/29/10	1.0 U	**6.8**	1.0 U	1.0 U	2.0 U	---	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.20 U
	C2-MW-12B	05/26/10	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	---	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.20 U
	C2-MW-12B	11/30/10	1.0 U	**1.0**	1.0 U	2.0 U	1.0 U	---	1.0 U	**5.9**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.20 U
	C2-MW-12B	03/25/11	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	---	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.20 U
	C2-MW-12B	10/11/11	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	---	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.20 U
	C2-MW-12B	02/29/12	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	---	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.20 U
	C2-MW-12B	09/21/12	0.10 U	0.10 U	0.10 U	0.20 U	0.10 U	---	0.10 U	1.0 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	1.0 U	0.10 U	0.10 U
	C2-MW-12B	03/21/13	0.10 U	0.10 U	0.10 U	0.20 U	0.10 U	3.0 U	0.10 U	1.0 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	1.0 U	0.10 U	0.10 U
	C2-MW-12B	09/20/13	0.24 U	0.23 U	0.24 U	0.48 U	0.24 U	---	0.50 U	10 U	0.50 U	2.0 U	0.50 U	0.24 U	0.23 U	0.50 U	2.0 U	0.50 U	0.40 U	0.13 U	0.14 U
	C2-MW-12B	03/21/14	0.060 U	0.11 U	0.10 U	0.25 U	0.13 U	---	0.18 U	5.0 U	0.17 U	1.0 U	0.14 U	0.14 U	0.16 U	0.50 U	0.20 U	0.16 U	0.13 U	0.10 U	0.11 U
	C2-MW-12B	09/03/14	0.125 U	0.500 U	0.250 U	0.500 U	0.250 U	0.500 U	0.500 U	10.0 U	5.00 U	2.50 UJ	0.250 U	0.250 U	0.250 U	0.500 U	1.00 U	0.500 U	0.250 U	1.00 U	0.100 U
	C2-MW-12B	04/07/15	0.125 U	0.500 U	0.250 U	0.500 U	0.250 U	---	0.500 U	10.0 U	5.00 U	2.50 U	0.250 U	0.250 U	0.250 U	0.500 U	1.00 U	0.500 U	0.250 U	1.00 U	0.200 U
	C2-MW-12B	09/29/15	0.125 U	0.500 U	0.250 U	0.500 U	0.250 U	---	0.500 U	10.0 U	5.00 U	2.50 UJ	0.250 U	0.250 U	0.250 U	0.500 U	1.00 U	0.500 U	0.250 U	1.00 U	0.100 U
	C2-MW-12B	03/29/16	0.125 U	0.500 U	0.250 U	0.500 U	0.200 U	---	0.500 U	10.0 U	5.00 U	2.50 U	0.250 U	0.250 U	0.250 U	0.500 U	1.00 U	0.500 U	0.250 U	1.00 U	0.250 U
	C2-MW-12B	09/11/17	0.100 U	0.500 U	0.250 U	0.500 U	0.250 U	---	0.500 U	20.0 UJ	5.00 U	2.50 U	0.250 U	0.250 U	0.250 U	0.500 U	2.00 UJ	0.500 U	0.250 U	1.00 U	0.200 U
	C2-MW-12B	03/19/19	0.100 U	0.500 U	0.250 U	0.500 U	0.250 U	---	0.500 U	10.0 U	5.00 U	2.50 U	0.200 U	0.200 U	0.200 U	0.500 U	1.00 U	0.500 U	0.200 U	1.00 U	0.100 U
	C2-MW-12B	09/09/20	0.100 U	0.500 U	0.250 U	0.500 U	0.250 U	---	0.500 U	10.0 U	5.00 U	2.50 U	0.200 U	0.200 U	0.200 U	0.500 U	2.00 U	0.500 U	**0.250 J**	1.00 U	0.100 U
Abandoned or Unlocatable Monitoring Wells																					
Cell 1 - Deeper Unconsolidated Aquifer																					
C1-MW-6B	NS	02/27/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	C1-MW-6B	05/12/09	1.0 U	1.0 U	1.0 U	---	---	3.0 U	1.0 U	---	---	---	---	---	---	---	---	---	---	---	---
	C1-MW-6B	12/18/09	1.0 U	1.0 U	1.0 U	---	---	3.0 U	1.0 U	---	---	---	---	---	---	---	---	---	---	---	---
	C1-MW-6B	03/29/10	1.0 U	1.0 U	1.0 U	---	---	3.0 U	1.0 U	---	---	---	---	---	---	---	---	---	---	---	---
	NS	05/26/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	NS	11/30/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	C1-MW-6B	03/25/11	1.0 U	1.0 U	1.0 U	---	---	3.0 U	1.0 U	---	---	---	---	---	---	---	---	---	---	---	---
Cell 2 - Deeper Unconsolidated Aquifer																					
C2-MW-13B	C2-MW-13B	03/25/11	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	---	1.0 U	5.0 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	0.20 U

Notes:
--- = Not analyzed
BTEX = benzene, toluene, ethylbenzene, and total xylenes
DUP = Duplicate sample.
J = Constituent was not positively identified; the associated value is estimated.
MTBE = methyl tertiary butyl ether
MTCA = Washington State Department of Ecology Model Toxics Control Act
NE = Not established
NS = Not sampled because well was not accessible.
µg/l = micrograms per liter
R = The sample results were rejected based on the data quality review.

Table 4. Volatile Organic Compounds in the Deeper Unconsolidated Aquifer
Former Fort Vancouver Plywood Site

U = Constituent not detected at or above the reporting limit (prior to 2014) or method detection limit (2014 to current).
UJ = Constituent was not detected above the noted limit; the limit is approximate.
VOCs = volatile organic compounds
Values in **bold** were detected above the laboratory method detection limit.
= Indicates a monitoring well that was either abandoned or unlocatable as paved over.
= Indicates the analyte was not detected; however, the reported method detection limit exceeds a screening criterion.
Ecology's MTCA values were obtained from the Washington State Department of Ecology Cleanup Level and Risk Calculations (CLARC) web site. The lower of the carcinogen and noncarcinogen MTCA Method B value is presented. https://fortress.wa.gov/ecy/clarc/CLARCHome.aspx

Table 5. Volatile Organic Compounds in the Shallow Zone
Former Fort Vancouver Plywood Site

			BTEX Compounds and MTBE							Historically Site Detected VOCs (Since 2009)											
Well Location	Sample ID	Date Sampled	Benzene µg/l	Toluene µg/l	Ethylbenzene µg/l	m,p-Xylene µg/l	o-Xylene µg/l	Total Xylenes µg/l	Methyl Tertiary Butyl Ether µg/l	Acetone µg/l	Chloroethane µg/l	Chloromethane µg/l	1,1-Dichloroethane µg/l	1,1-Dichloroethene µg/l	cis-1,2-Dichloroethene µg/l	Isopropylbenzene (Cumene) µg/l	Naphthalene µg/l	1,2,4-Trimethylbenzene µg/l	Trichloroethene µg/l	Trichlorofluoromethane µg/l	Vinyl Chloride µg/l
Ecology's MTCA Method B Surface Water Cleanup Levels			23	18,900	6,820	NE	NE	NE	NE	NE	NE	NE	NE	23,100	NE	NE	4,710	NE	13	NE	3.7
Ecology's Acute Freshwater Surface Water Quality Criteria			NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EPA's National Toxics Rule Human Health Criteria for Surface Water			1.2	6,800	3,100	NE	NE	NE	NE	NE	NE	NE	NE	0.057	NE	NE	NE	NE		NE	2
Ecology's MTCA Method A Groundwater Cleanup Levels			5.0	1,000	700	1,000	1,000	1,000	20	NE	NE	NE	NE	NE	NE	NE	160	NE	5.0	NE	0.20
Ecology's MTCA Method B Groundwater Cleanup Levels			0.795	640	800	1,600	1,600	1,600	24	7,200	NE	NE	7.68	400	16	800	160	NE	4.0	2,400	0.029
Active Monitoring Wells																					
Cell 1 - Shallow Zone																					
C1-MW-4	C1-MW-4	02/27/09	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	---	1.0 U	**1.7**	**1.7**	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	**0.37**
	C1-MW-4	05/12/09	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	---	1.0 U	1.0 U	1.0 U	1.0 U	**2.1**	1.0 U	**1.8**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**0.34**
	C1-MW-4	12/18/09	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	---	1.0 U	**1.5**	**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	**0.46**
	C1-MW-4	03/30/10	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	---	1.0 U	**1.6**	**1.6**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**0.44**
	C1-MW-4	05/26/10	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	---	1.0 U	**1.6**	**1.6**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**0.37**
	C1-MW-4	11/30/10	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	---	1.0 U	5.0 U	1.0 U	1.0 U	**1.5**	1.0 U	**1.3**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**0.62**
	C1-MW-4	03/24/11	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	---	1.0 U	5.0 U	1.0 U	1.0 U	**2.1**	1.0 U	**2.2**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**1.0**
	C1-MW-4	10/11/11	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	---	1.0 U	5.0 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	1.0 U	0.20 U
	C1-MW-4	03/01/12	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	---	1.0 U	5.0 U	1.0 U	1.0 U	**1.6**	1.0 U	**1.5**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**0.25**
	C1-MW-4	09/20/12	0.10 U	0.10 U	0.10 U	0.20 U	0.10 U	---	0.10 U	1.0 U	0.10 U	0.10 U	0.10 U	0.10 U	**1.1**	0.10 U	0.10 U	0.10 U	1.0 U	0.10 U	**0.39**
	C1-MW-4	03/22/13	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	3.0 U	1.0 U	20 U	1.0 U	1.0 U	**1.7**	1.0 U	**2.0**	1.0 U	4.0 U	1.0 U	1.0 U	1.0 U	**0.21**
	NS	09/23/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	C1-MW-4	03/21/14	0.060 U	0.11 U	0.10 U	0.25 U	0.13 U	---	0.18 U	5.0 U	0.17 U	1.0 U	**1.5**	**0.63**	**2.8**	0.50 U	0.20 U	0.16 U	**0.23 J**	0.10 U	0.11 U
	C1-MW-4	09/03/14	0.125 U	0.500 U	0.250 U	0.500 U	0.250 U	0.500 U	0.500 U	10.0 U	5.00 U	2.50 UJ	**1.12**	**0.380 J**	**1.73**	0.500 U	1.00 U	0.500 U	0.250 U	1.00 U	**0.240**
	C1-MW-4	04/08/15	0.125 U	0.500 U	0.250 U	0.500 U	0.250 U	---	0.500 U	10.0 U	5.00 U	2.50 U	**1.67**	**0.540**	**2.73**	0.500 U	1.00 U	0.500 U	**0.290 J**	1.00 U	**0.450**
	C1-MW-4	09/29/15	0.125 U	0.500 U	0.250 U	0.500 U	0.250 U	---	0.500 U	10.0 U	5.00 U	2.50 UJ	**0.820**	**0.290 J**	**1.53**	0.500 U	1.00 U	0.500 U	0.250 U	1.00 U	0.250 U
	C1-MW-4	03/29/16	0.125 U	**0.810 J**	0.250 U	0.500 U	0.200 U	---	0.500 U	10.0 U	5.00 U	2.50 U	**1.27**	**0.510**	**2.32**	0.500 U	1.00 U	0.500 U	**0.350 J**	1.00 U	**0.490 J**
	C1-MW-4	09/11/17	0.100 U	0.500 U	0.250 U	0.500 U	0.250 U	---	0.500 U	20.0 UJ	5.00 U	2.50 U	**0.540**	0.250 U	**1.18**	0.500 U	2.00 UJ	0.500 U	0.250 U	1.00 U	**0.300 J**
	C1-MW-4	03/19/19	0.100 U	0.500 U	0.250 U	0.500 U	0.250 U	---	0.500 U	10.0 U	5.00 U	2.50 U	**0.554**	0.200 U	**1.55**	0.500 U	1.00 U	0.500 U	0.200 U	1.00 U	**0.216**
	C1-MW-4	09/08/20	0.100 U	0.500 U	0.250 U	0.500 U	0.250 U	---	0.500 U	10.0 U	5.00 U	2.50 U	**0.330 J**	0.200 U	**0.820**	0.500 U	2.00 U	0.500 U	0.200 U	1.00 U	**0.170 J**
Cell 2 - Shallow Zone																					
C2-MW-3	C2-MW-3	02/26/09	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	---	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	0.20 U
	C2-MW-3	12/17/09	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	---	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.20 U
	C2-MW-3	03/29/10	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	---	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.20 U
	C2-MW-3	05/26/10	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	---	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.20 U
	C2-MW-3	11/30/10	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	---	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.20 U
	C2-MW-3	03/25/11	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	---	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.20 U

Table 5. Volatile Organic Compounds in the Shallow Zone
Former Fort Vancouver Plywood Site

Well Location	Sample ID	Date Sampled	BTEX Compounds and MTBE							Historically Site Detected VOCs (Since 2009)											
			Benzene µg/l	Toluene µg/l	Ethylbenzene µg/l	m,p-Xylene µg/l	o-Xylene µg/l	Total Xylenes µg/l	Methyl Tertiary Butyl Ether µg/l	Acetone µg/l	Chloroethane µg/l	Chloromethane µg/l	1,1-Dichloroethane µg/l	1,1-Dichloroethene µg/l	cis-1,2-Dichloroethene µg/l	Isopropylbenzene (Cumene) µg/l	Naphthalene µg/l	1,2,4-Trimethylbenzene µg/l	Trichloroethene µg/l	Trichlorofluoromethane µg/l	Vinyl Chloride µg/l
Ecology's MTCA Method B Surface Water Cleanup Levels			23	18,900	6,820	NE	NE	NE	NE	NE	NE	NE	NE	23,100	NE	NE	4,710	NE	13	NE	3.7
Ecology's Acute Freshwater Surface Water Quality Criteria			NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EPA's National Toxics Rule Human Health Criteria for Surface Water			1.2	6,800	3,100	NE	NE	NE	NE	NE	NE	NE	NE	0.057	NE	NE	NE	NE		NE	2
Ecology's MTCA Method A Groundwater Cleanup Levels			5.0	1,000	700	1,000	1,000	1,000	20	NE	NE	NE	NE	NE	NE	NE	160	NE	5.0	NE	0.20
Ecology's MTCA Method B Groundwater Cleanup Levels			0.795	640	800	1,600	1,600	1,600	24	7,200	NE	NE	7.68	400	16	800	160	NE	4.0	2,400	0.029
C2-MW-9	C2-MW-9	02/27/09	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	C2-MW-9	05/12/09	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	---	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**3.7**
	C2-MW-9	12/18/09	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	---	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**3.5**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**0.61**
	C2-MW-9	03/29/10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	C2-MW-9	05/26/10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	C2-MW-9	11/29/10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	C2-MW-9	03/25/11	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	---	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**4.1**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**1.2**
	C2-MW-9	09/20/12	0.10 U	0.10 U	0.10 U	0.20 U	0.10 U	---	0.10 U	1.0 U	0.10 U	0.10 U	0.10 U	0.10 U	**1.3**	0.10 U	0.10 U	0.10 U	1.0 U	0.10 U	**1.0**
	C2-MW-9	03/22/13	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	3.0 U	1.0 U	20 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	4.0 U	1.0 U	1.0 U	1.0 U	**0.83**
	C2-MW-9	09/23/13	0.24 U	0.23 U	0.24 U	0.48 U	0.24 U	---	0.50 U	10 U	0.50 U	2.0 U	0.50 U	0.24 U	**2.5**	0.50 U	2.0 U	0.50 U	0.40 U	0.13 U	0.14 U
	C2-MW-9	03/21/14	0.060 U	0.11 U	0.10 U	0.25 UJ	0.13 UJ	---	0.18 UJ	**8.3 J**	0.17 UJ	1.0 UJ	0.14 UJ	0.14 UJ	**0.79 J**	0.50 UJ	0.20 UJ	0.16 UJ	0.13 U	0.10 UJ	**1.3 J**
	C2-MW-9	09/03/14	0.125 U	0.500 U	0.250 U	0.500 U	0.250 U	0.500 U	0.500 U	10.0 U	5.00 U	2.50 UJ	0.250 U	0.250 U	0.250 U	0.500 U	1.00 U	0.500 U	0.250 U	1.00 U	**0.550**
	C2-MW-9	04/08/15	0.125 U	0.500 U	0.250 U	0.500 U	0.250 U	---	0.500 U	10.0 U	5.00 U	2.50 U	0.250 U	0.250 U	**0.930**	0.500 U	1.00 U	0.500 U	0.250 U	1.00 U	**0.410**
	C2-MW-9	09/28/15	0.125 U	0.500 U	0.250 U	0.500 U	0.250 U	---	0.500 U	10.0 U	5.00 U	2.50 UJ	0.250 U	0.250 U	**1.84**	0.500 U	1.00 U	0.500 U	0.250 U	1.00 U	**0.370**
	C2-MW-9	03/28/16	0.125 U	0.500 U	0.250 U	0.500 U	0.200 U	---	0.500 U	10.0 U	5.00 U	2.50 U	0.250 U	0.250 U	**0.520**	0.500 U	1.00 U	0.500 U	0.250 U	1.00 U	**0.630**
	C2-MW-9	09/11/17	0.100 U	0.500 U	0.250 U	0.500 U	0.250 U	---	0.500 U	20.0 UJ	5.00 U	2.50 U	0.250 U	0.250 U	0.250 U	0.500 U	2.00 UJ	0.500 U	0.250 U	1.00 U	**0.860**
	C2-MW-9	03/19/19	0.100 U	0.500 U	0.250 U	0.500 U	0.250 U	---	0.500 U	10.0 U	5.00 U	2.50 U	0.200 U	0.200 U	**0.956**	0.500 U	1.00 U	0.500 U	0.200 U	1.00 U	**0.453**
	C2-MW-9	09/09/20	0.100 U	0.500 U	0.250 U	0.500 U	0.250 U	---	0.500 U	10.0 U	5.00 U	2.50 U	0.200 U	0.200 U	**0.810**	0.500 U	2.00 U	0.500 U	0.200 U	1.00 U	**0.400**
C2-MW-11(R2)	C2-MW-11R	09/03/14	0.125 U	0.500 U	0.250 U	0.500 U	0.250 U	0.500 U	0.500 U	10.0 U	5.00 U	2.50 UJ	0.250 U	0.250 U	0.250 U	0.500 U	1.00 U	0.500 U	0.250 U	1.00 U	**1.08**
	C2-MW-11R	04/08/15	0.125 U	0.500 U	0.250 U	0.500 U	0.250 U	---	0.500 U	10.0 U	5.00 U	2.50 U	0.250 U	0.250 U	0.250 U	0.500 U	1.00 U	0.500 U	0.250 U	1.00 U	**1.25**
	C2-MW-11R	09/28/15	0.125 U	0.500 U	0.250 U	0.500 U	0.250 U	---	0.500 U	10.0 U	5.00 U	2.50 UJ	0.250 U	0.250 U	0.250 U	0.500 U	1.00 U	0.500 U	0.250 U	1.00 U	**1.35**
	C2-MW-11R	03/28/16	0.125 U	0.500 U	0.250 U	0.500 U	0.200 U	---	0.500 U	10.0 U	5.00 U	2.50 U	0.250 U	0.250 U	0.250 U	0.500 U	1.00 U	0.500 U	0.250 U	1.00 U	**0.940**
	C2-MW-11(R)	09/11/17	0.100 U	0.500 U	0.250 U	0.500 U	0.250 U	---	0.500 U	20.0 UJ	5.00 U	2.50 U	0.250 U	0.250 U	0.250 U	0.500 U	2.00 UJ	0.500 U	0.250 U	1.00 U	**1.13**
	C2-MW-11(R)	03/19/19	0.100 U	0.500 U	0.250 U	0.500 U	0.250 U	---	0.500 U	10.0 U	5.00 U	2.50 U	0.200 U	0.200 U	0.200 U	0.500 U	1.00 U	0.500 U	0.200 U	1.00 U	**0.159**
	C2-MW-11(R)	09/09/20	0.100 U	0.500 U	0.250 U	0.500 U	0.250 U	---	0.500 U	10.0 U	5.00 U	2.50 U	0.200 U	0.200 U	0.200 U	0.500 U	2.00 U	0.500 U	0.200 U	1.00 U	**0.610**
Abandoned or Unlocatable Monitoring Wells																					
Cell 1 - Shallow Zone																					
C1-MW-3	C1-MW-3	02/27/09	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	---	---	---	---	---	---	---	---	---	---	---	---
	C1-MW-3	05/12/09	1.0 U	1.0 U	1.0 U	---	---	3.0 U	1.0 U	---	---	---	---	---	---	---	---	---	---	---	---
	C1-MW-3	12/18/09	1.0 U	1.0 U	1.0 U	---	---	3.0 U	1.0 U	---	---	---	---	---	---	---	---	---	---	---	---
	C1-MW-3	03/30/10	1.0 U	1.0 U	1.0 U	---	---	3.0 U	1.0 U	---	---	---	---	---	---	---	---	---	---	---	---
	C1-MW-3	05/26/10	1.0 U	1.0 U	1.0 U	---	---	3.0 U	1.0 U	---	---	---	---	---	---	---	---	---	---	---	---
	C1-MW-3	11/30/10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	C1-MW-3	03/24/11	1.0 U	1.0 U	1.0 U	---	---	3.0 U	1.0 U	---	---	---	---	---	---	---	---	---	---	---	---
	C1-MW-3	10/12/11	1.0 U	1.0 U	1.0 U	---	---	3.0 U	1.0 U	---	---	---	---	---	---	---	---	---	---	---	---
	C1-MW-3	03/01/12	1.0 U	1.0 U	1.0 U	---	---	3.0 U	1.0 U	---	---	---	---	---	---	---	---	---	---	---	---
	C1-MW-3	09/20/12	0.10 U	0.10 U	0.10 U	---	---	0.30 U	0.10 U	---	---	---	---	---	---	---	---	---	---	---	---
	C1-MW-3	03/22/13	1.0 U	1.0 U	1.0 U	---	---	3.0 U	1.0 U	---	---	---	---	---	---	---	---	---	---	---	---
	NS	09/23/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	C1-MW-3	03/21/14	0.060 U	0.11 U	0.10 U	---	---	0.33 U	0.18 U	---	---	---	---	---	---	---	---	---	---	---	---
	C1-MW-3	09/03/14	0.125 U	0.500 U	0.250 U	---	---	0.750 U	0.500 U	---	---	---	---	---	---	---	---	---	---	---	---
	C1-MW-3	04/08/15	0.125 U	0.500 U	0.250 U	---	---	0.750 U	0.500 U	---	---	---	---	---	---	---	---	---	---	---	---
	C1-MW-3	09/29/15	0.125 U	0.500 U	0.250 U	---	---	0.750 U	0.500 U	---	---	---	---	---	---	---	---	---	---	---	---
	C1-MW-3	03/29/16	0.100 U	0.500 U	0.250 U	---	---	0.750 U	0.500 U	---	---	---	---	---	---	---	---	---	---	---	---

Table 5. Volatile Organic Compounds in the Shallow Zone
Former Fort Vancouver Plywood Site

Well Location	Sample ID	Date Sampled	BTEX Compounds and MTBE							Historically Site Detected VOCs (Since 2009)											
			Benzene µg/l	Toluene µg/l	Ethylbenzene µg/l	m,p-Xylene µg/l	o-Xylene µg/l	Total Xylenes µg/l	Methyl Tertiary Butyl Ether µg/l	Acetone µg/l	Chloroethane µg/l	Chloromethane µg/l	1,1-Dichloroethane µg/l	1,1-Dichloroethene µg/l	cis-1,2-Dichloroethene µg/l	Isopropylbenzene (Cumene) µg/l	Naphthalene µg/l	1,2,4-Trimethylbenzene µg/l	Trichloroethene µg/l	Trichlorofluoromethane µg/l	Vinyl Chloride µg/l
Ecology's MTCA Method B Surface Water Cleanup Levels			23	18,900	6,820	NE	NE	NE	NE	NE	NE	NE	NE	23,100	NE	NE	4,710	NE	13	NE	3.7
Ecology's Acute Freshwater Surface Water Quality Criteria			NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EPA's National Toxics Rule Human Health Criteria for Surface Water			1.2	6,800	3,100	NE	NE	NE	NE	NE	NE	NE	NE	0.057	NE	NE	NE	NE		NE	2
Ecology's MTCA Method A Groundwater Cleanup Levels			5.0	1,000	700	1,000	1,000	1,000	20	NE	NE	NE	NE	NE	NE	NE	160	NE	5.0	NE	0.20
Ecology's MTCA Method B Groundwater Cleanup Levels			0.795	640	800	1,600	1,600	1,600	24	7,200	NE	NE	7.68	400	16	800	160	NE	4.0	2,400	0.029
C1-MW-6	C1-MW-6	05/12/09	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	---	1.0 U	1.0 U	1.0 U	1.0 U	**10**	**1.7**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**4.2**	0.20 U
	C1-MW-6	12/18/09	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	---	1.0 U	1.0 U	1.0 U	1.0 U	**8.8**	**1.0**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.20 U
	NS	05/26/10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	NS	11/30/10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	C1-MW-6	03/25/11	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	---	1.0 U	5.0 U	1.0 U	1.0 U	**1.6**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**1.3**	0.20 U
C1-MW-7	C1-MW-7	02/27/09	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	**26.0**	---	---	---	---	---	---	---	---	---	---	---	---
	C1-MW-7	05/12/09	1.0 U	1.0 U	1.0 U	---	---	3.0 U	**24.3**	---	---	---	---	---	---	---	---	---	---	---	---
	C1-MW-7	12/18/09	1.0 U	1.0 U	1.0 U	---	---	3.0 U	**23.4**	---	---	---	---	---	---	---	---	---	---	---	---
	C1-MW-7	03/30/10	1.0 U	1.0 U	1.0 U	---	---	3.0 U	**24.1**	---	---	---	---	---	---	---	---	---	---	---	---
	C1-MW-7	05/26/10	1.0 U	1.0 U	1.0 U	---	---	3.0 U	**16.1**	---	---	---	---	---	---	---	---	---	---	---	---
	C1-MW-7	03/25/11	1.0 U	1.0 U	1.0 U	---	---	3.0 U	**23.7**	---	---	---	---	---	---	---	---	---	---	---	---
	C1-MW-7	10/12/11	1.0 U	1.0 U	1.0 U	---	---	3.0 U	**24.6**	---	---	---	---	---	---	---	---	---	---	---	---
	C1-MW-7	02/29/12	1.0 U	1.0 U	1.0 U	---	---	3.0 U	**3.2**	---	---	---	---	---	---	---	---	---	---	---	---
	C1-MW-7	09/20/12	0.10 U	0.10 U	0.10 U	---	---	0.30 U	**13**	---	---	---	---	---	---	---	---	---	---	---	---
	C1-MW-7	03/22/13	1.0 U	1.0 U	1.0 U	---	---	3.0 U	**11.6**	---	---	---	---	---	---	---	---	---	---	---	---
	C1-MW-7	09/23/13	0.24 U	0.23 U	0.24 U	---	---	3.0 U	**16.4**	---	---	---	---	---	---	---	---	---	---	---	---
	C1-MW-7	03/21/14	0.12 U	0.22 U	0.20 U	---	---	0.66 U	**14.0**	---	---	---	---	---	---	---	---	---	---	---	---
	C1-MW-7	09/04/14	0.125 U	0.500 U	0.250 U	---	---	0.750 U	**12.1**	---	---	---	---	---	---	---	---	---	---	---	---
	C1-MW-7	04/08/15	0.125 U	0.500 U	0.250 U	---	---	0.750 U	**17.2**	---	---	---	---	---	---	---	---	---	---	---	---
	C1-MW-7	09/29/15	0.125 U	0.500 U	0.250 U	---	---	0.750 U	**18.1**	---	---	---	---	---	---	---	---	---	---	---	---
	C1-MW-7	03/29/16	0.100 U	0.500 U	0.250 U	---	---	0.750 U	**19.3**	---	---	---	---	---	---	---	---	---	---	---	---
	C1-MW-7	09/11/17	0.100 U	0.500 U	0.250 U	---	---	0.750 U	**15.3**	---	---	---	---	---	---	---	---	---	---	---	---
	C1-MW-7	03/19/19	0.100 U	0.500 U	0.250 U	---	---	0.750 U	**17.9**	---	---	---	---	---	---	---	---	---	---	---	---
Cell 2 - Shallow Zone																					
C2-MW-7	NS	02/27/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	C2-MW-7	05/12/09	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	---	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.20 U
	C2-MW-7	12/17/09	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	NS	03/29/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	NS	05/26/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	NS	11/29/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	C2-MW-7	03/25/11	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	---	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.20 U

Table 5. Volatile Organic Compounds in the Shallow Zone
Former Fort Vancouver Plywood Site

Well Location	Sample ID	Date Sampled	BTEX Compounds and MTBE							Historically Site Detected VOCs (Since 2009)											
			Benzene µg/l	Toluene µg/l	Ethylbenzene µg/l	m,p-Xylene µg/l	o-Xylene µg/l	Total Xylenes µg/l	Methyl Tertiary Butyl Ether µg/l	Acetone µg/l	Chloroethane µg/l	Chloromethane µg/l	1,1-Dichloroethane µg/l	1,1-Dichloroethene µg/l	cis-1,2-Dichloroethene µg/l	Isopropylbenzene (Cumene) µg/l	Naphthalene µg/l	1,2,4-Trimethylbenzene µg/l	Trichloroethene µg/l	Trichlorofluoromethane µg/l	Vinyl Chloride µg/l
Ecology's MTCA Method B Surface Water Cleanup Levels			23	18,900	6,820	NE	NE	NE	NE	NE	NE	NE	NE	23,100	NE	NE	4,710	NE	13	NE	3.7
Ecology's Acute Freshwater Surface Water Quality Criteria			NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EPA's National Toxics Rule Human Health Criteria for Surface Water			1.2	6,800	3,100	NE	NE	NE	NE	NE	NE	NE	NE	0.057	NE	NE	NE	NE		NE	2
Ecology's MTCA Method A Groundwater Cleanup Levels			5.0	1,000	700	1,000	1,000	1,000	20	NE	NE	NE	NE	NE	NE	NE	160	NE	5.0	NE	0.20
Ecology's MTCA Method B Groundwater Cleanup Levels			0.795	640	800	1,600	1,600	1,600	24	7,200	NE	NE	7.68	400	16	800	160	NE	4.0	2,400	0.029
C2-MW-10(R)	C2-MW-10	02/27/09	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	---	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	**0.27**
	C2-MW-10	05/12/09	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	---	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.20 U
	C2-MW-10	12/17/09	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	---	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.20 U
	C2-MW-10	03/29/10	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	---	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.20 U
	C2-MW-10	05/25/10	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	---	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.20 U
	C2-MW-10	11/30/10	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	---	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.20 U
	C2-MW-10	03/25/11	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	---	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**0.94**
	C2-MW-10	10/12/11	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	---	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**0.28**
C2-MW-11(R)	C2-MW-11	02/27/09	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	---	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**12**	1.0 U	1.0 U	1.0 U	**1.4**
	C2-MW-11	05/12/09	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	---	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**0.50**
	C2-MW-11	12/18/09	1.0 U	1.0 U	**1.6**	**4.0**	**2.0**	---	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**1.0**	**101**	**2.7**	1.0 U	1.0 U	**0.74**
	C2-MW-11	03/29/10	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	---	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**51.4**	**1.3**	1.0 U	1.0 U	**0.73**
	C2-MW-11	05/26/10	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	---	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**63.8**	**2.3**	1.0 U	1.0 U	**0.57**
	C2-MW-11	11/30/10	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	---	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**4.9**	1.0 U	1.0 U	1.0 U	**1.5**
	C2-MW-11	03/25/11	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	---	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**16.2**	1.0 U	1.0 U	1.0 U	**1.4**
	C2-MW-11	10/12/11	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	---	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**1.6**
	C2-MW-11	03/01/12	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	---	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**5.7**	1.0 U	1.0 U	1.0 U	**1.1**
	C2-MW-11	09/20/12	0.10 U	0.10 U	0.10 U	0.20 U	0.10 U	---	0.10 U	1.0 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	1.0 U	0.10 U	**1.8**
	C2-MW-11	03/22/13	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	3.0 U	1.0 U	20 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	4.0 U	1.0 U	1.0 U	1.0 U	**1.1**
	C2-MW-11	09/23/13	0.24 U	0.23 U	0.24 U	0.48 U	0.24 U	---	0.50 U	10 U	0.50 U	2.0 U	0.50 U	0.24 U	0.23 U	0.50 U	2.0 U	0.50 U	0.40 U	0.13 U	**1.2**
	C2-MW-11	03/21/14	**0.24**	**0.23 J**	**0.61**	**1.5**	**1.2**	---	0.18 U	5.0 U	0.17 U	1.0 U	0.14 U	0.14 U	0.16 U	**0.87 J**	**130**	**4.8**	0.13 U	0.10 U	**0.28 J**

Notes:
--- = Not analyzed
BTEX = benzene, toluene, ethylbenzene, and total xylenes
DUP = Duplicate sample.
J = Constituent was not positively identified; the associated value is estimated.
MTBE = methyl tertiary butyl ether
MTCA = Washington State Department of Ecology Model Toxics Control Act
NE = Not established
NS = Not sampled because well was not accessible.
µg/l = micrograms per liter
R = The sample results were rejected based on the data quality review.
U = Constituent not detected at or above the reporting limit (prior to 2014) or method detection limit (2014 to current).
UJ = Constituent was not detected above the reporting limit (prior to 2014) or method detection limit (2014 to current); the limit is approximate.
VOCs = volatile organic compounds
Values in **bold** were detected above the laboratory method detection limit.
= Indicates a monitoring well that was either abandoned or unlocatable as paved over.
= Indicates an exceedance of a screening criterion.
= Indicates the analyte was not detected; however, the reported method detection limit exceeds a screening criterion.
Ecology's MTCA values were obtained from the Washington State Department of Ecology Cleanup Level and Risk Calculations (CLARC) web site. The lower of the carcinogen and noncarcinogen MTCA Method B value is presented. https://fortress.wa.gov/ecy/clarc/CLARCHome.aspx
Ecology's Acute Freshwater Surface Water Quality Criteria were obtained from the Washington State Legislature Washington Administrative Code web site. http://apps.leg.wa.gov/WAC/default.aspx?cite=173-201A-240
EPA's National Toxics Rule Human Health Criteria for Surface Water were obtained through the Washington State Department of Ecology web site for Toxics Standards and Criteria. http://www.ecy.wa.gov/programs/wq/swqs/toxics.html

Table 6. Total Petroleum Hydrocarbons in the Deeper Unconsolidated Aquifer
Former Fort Vancouver Plywood Site

Well ID	Sample ID	Date Sampled	TPH-Dx Diesel-Range mg/l	TPH-Dx Oil-Range mg/l	TPH-Gx Gasoline-Range mg/l
Ecology's MTCA Method A Groundwater Cleanup Levels			0.50	0.50	1.0 [(a)]
Ecology's MTCA Method B Groundwater Cleanup Levels			NE	NE	NE
Active Monitoring Wells					
Cell 2 - Deeper Unconsolidated Aquifer					
C2-MW-12B	C2-MW-12B	02/26/09	0.091 U	0.45 U	0.025 U
	C2-MW-12B	05/12/09	0.082 U	0.41 U	0.050 U
	C2-MW-12B	12/17/09	**0.13**	0.42 U	0.050 U
	C2-MW-12B	03/29/10	**2.3**	**2.6**	0.050 U
	C2-MW-12B	03/29/10	**1.3**	**1.4**	0.050 U
	C2-MW-12B	05/26/10	**0.10**	**0.44**	0.050 U
	C2-MW-12B	11/30/10	**4.0**	**6.6**	0.050 U
	C2-MW-12B	03/25/11	**0.55**	**0.66**	0.050 U
	C2-MW-12B	10/11/11	**1.6**	**2.4**	0.050 U
	C2-MW-12B	02/29/12	0.077 U	0.38 U	0.050 U
	C2-MW-12B	09/20/12	0.16 U	0.80 U	0.025 U
	C2-MW-12B	03/21/13	0.40 U	0.40 U	0.10 U
	C2-MW-12B	09/20/13	0.011 U	0.018 U	0.10 U
	C2-MW-12B	03/21/14	**0.080 J**	**0.18 J**	0.019 U
	C2-MW-12B	09/03/14	0.0943 U	**0.496**	0.0500 U
	C2-MW-12B	04/07/15	0.0952 U	0.190 U	0.0500 U
	C2-MW-12B	09/29/15	0.0943 U	0.189 U	0.0500 U
	C2-MW-12B	03/29/16	0.0980 U	**0.230 J**	0.0500 U
	C2-MW-12B	09/11/17	0.0952 U	0.190 U	0.0500 U
	C2-MW-12B	03/19/19	0.0952 U	0.190 U	0.0500 U
	C2-MW-12B	09/09/20	0.0943 U	0.189 U	0.0500 U
Abandoned or Unlocatable Monitoring Wells					
Cell 2 - Deeper Unconsolidated Aquifer					
C2-MW-13B	C2-MW-13B	03/25/11	**0.41**	**0.47**	0.050 U

Notes:
B = Constituent was detected above the laboratory reporting limit in the method blank.
DUP = Duplicate sample.
J = Constituent was not positively identified; the associated value is estimated.
mg/l = milligrams per liter
MTCA = Washington State Department of Ecology Model Toxics Control Act
NA = Not analyzed
NE = Not established
NS = Not sampled because well was not accessible.
U = Constituent not detected at or above the reporting limit (prior to 2014) or method detection limit (2014 to current).
TPH = Total Petroleum Hydrocarbons
TPH-Gx = Total Petroleum Hydrocarbons gasoline-range
TPH-Dx = Total Petroleum Hydrocarbons diesel- and oil-range
Values in **bold** were detected above the laboratory method detection limit.
= Indicates a monitoring well that was either abandoned or unlocatable as paved over.
= Indicates an exceedance of a screening criterion.
Ecology's MTCA values were obtained from the Washington State Department of Ecology Cleanup Level and Risk Calculations (CLARC) web site. The lower of the carcinogen and noncarcinogen MTCA Method B value is presented. https://fortress.wa.gov/ecy/clarc/CLARCHome.aspx
(a) = Value is for gasoline concentration when benzene is not present.

Table 7. Total Petroleum Hydrocarbons in the Shallow Zone
Former Fort Vancouver Plywood Site

Well ID	Sample ID	Date Sampled	TPH-Dx Diesel-Range mg/l	TPH-Dx Oil-Range mg/l	TPH-Gx Gasoline-Range mg/l
Ecology's MTCA Method B Surface Water Cleanup Levels			NE	NE	NE
Ecology's Acute Freshwater Surface Water Quality Criteria			NE	NE	NE
EPA's National Toxics Rule Human Health Criteria for Surface Water			NE	NE	NE
Ecology's MTCA Method A Groundwater Cleanup Levels			0.50	0.50	1.0 [(a)]
Ecology's MTCA Method B Groundwater Cleanup Levels			NE	NE	NE
Active Monitoring Wells					
Cell 2 - Deeper Unconsolidated Aquifer					
C2-MW-3	C2-MW-3	02/26/09	0.086 U	0.43 U	0.025 U
	C2-MW-3	02/26/09	**0.089 B**	0.41 U	0.025 U
	C2-MW-3	05/11/09	0.083 U	0.42 U	0.050 U
	C2-MW-3	05/11/09	0.094 U	0.47 U	0.050 U
	C2-MW-3	12/17/09	**0.093**	0.38 U	0.050 U
	C2-MW-3	12/17/09	**0.089**	0.39 U	0.050 U
	C2-MW-3	03/29/10	0.078 U	0.39 U	0.050 U
	C2-MW-3	05/26/10	0.078 U	0.39 U	0.050 U
	C2-MW-3	05/26/10	0.076 U	0.38 U	0.050 U
	C2-MW-3	11/30/10	0.082 U	0.41 U	0.050 U
	C2-MW-3	03/25/11	0.078 U	0.39 U	0.050 U
	C2-MW-3	10/11/11	0.076 U	0.38 U	0.050 U
	C2-MW-3	02/29/12	0.076 U	0.38 U	0.050 U
	C2-MW-3	09/20/12	0.16 U	0.81 U	0.025 U
	C2-MW-3	03/21/13	0.40 U	0.40 U	NA
	C2-MW-3	09/20/13	0.011 U	0.018 U	0.10 U
	C2-MW-3	03/21/14	0.028 U	0.038 U	0.019 U
	C2-MW-3	09/03/14	0.0943 U	**0.714 J**	0.0500 U
	C2-MW-3	04/07/15	0.0943 U	0.189 U	0.0500 U
	C2-MW-3	09/29/15	0.0943 U	**0.269 J**	0.0500 U
	C2-MW-3	03/29/16	0.0952 U	0.190 U	0.0500 U
	C2-MW-3	09/11/17	0.0935 U	**0.283 J**	0.0500 U
	C2-MW-3	03/19/19	0.0952 U	0.190 U	0.0500 U
	C2-MW-3	09/08/20	0.0935 U	0.187 U	0.0500 U
C2-MW-9	C2-MW-9	02/26/09	NS	NS	NS
	C2-MW-9	05/12/09	0.088 U	0.44 U	0.050 U
	C2-MW-9	12/18/09	**0.17**	0.40 U	0.050 U
	C2-MW-9	03/29/10	NS	NS	NS
	C2-MW-9	05/26/10	NS	NS	NS
	C2-MW-9	11/30/10	NS	NS	NS
	C2-MW-9	03/25/11	**0.12**	0.40 U	0.050 U
	C2-MW-9	10/11/11	**0.13**	0.38 U	0.050 U
	C2-MW-9	09/20/12	0.16 U	0.80 U	0.025 U
	C2-MW-9	03/22/13	0.41 U	0.41 U	0.10 U
	C2-MW-9	09/23/13	0.011 U	0.018 U	0.10 U
	C2-MW-9	03/21/14	**0.12**	**0.16 J**	0.019 U
	C2-MW-9	09/03/14	0.0952 U	**0.517 J**	0.0500 U
	C2-MW-9	04/08/15	0.0943 U	0.189 U	0.0500 U
	C2-MW-9	09/28/15	0.0943 U	0.189 U	0.0500 U
	C2-MW-9	03/28/16	0.0952 U	**0.311 J**	0.0500 U
	C2-MW-9	09/11/17	0.0935 U	0.187 U	0.0500 U
	C2-MW-9	03/19/19	0.0980 U	0.196 U	0.0500 U
	C2-MW-9	09/09/20	0.0935 U	0.187 U	0.0500 U

Table 7. Total Petroleum Hydrocarbons in the Shallow Zone
Former Fort Vancouver Plywood Site

Well ID	Sample ID	Date Sampled	TPH-Dx Diesel-Range mg/l	TPH-Dx Oil-Range mg/l	TPH-Gx Gasoline-Range mg/l
Ecology's MTCA Method B Surface Water Cleanup Levels			NE	NE	NE
Ecology's Acute Freshwater Surface Water Quality Criteria			NE	NE	NE
EPA's National Toxics Rule Human Health Criteria for Surface Water			NE	NE	NE
Ecology's MTCA Method A Groundwater Cleanup Levels			0.50	0.50	1.0 [(a)]
Ecology's MTCA Method B Groundwater Cleanup Levels			NE	NE	NE
C2-MW-11(R2)	C2-MW-11(R)	09/03/14	**0.110 J**	0.198 U	0.0500 U
	C2-MW-11(R)	04/08/15	0.0952 U	0.190 U	0.0500 U
	C2-MW-11(R)	09/28/15	0.0943 U	**0.286 J**	0.0500 U
	C2-MW-11R	03/28/16	0.0962 U	**0.262 J**	0.0500 U
	C2-MW-11(R)	09/11/17	0.0952 U	0.190 U	0.0500 U
	C2-MW-11(R)	03/19/19	0.0971 U	0.194 U	0.0500 U
	C2-MW-11(R)	09/09/20	**0.112 J**	0.189 U	0.0500 U
C2-MW-10(R2)	C2-MW-10(R)	09/29/15	0.0943 U	**1.55**	0.0500 U
	C2-MW-10R2	03/28/16	0.0962 U	**5.25**	**0.385**
	C2-MW-10(R2)	09/11/17	0.0952 U	**0.216 J**	0.0500 U
	C2-MW-10(R2)	03/19/19	0.0962 U	**1.10**	0.0500 U
	C2-MW-10(R2)	09/09/20	**0.328**	0.189 U	0.0500 U
Abandoned or Unlocatable Monitoring Wells					
Cell 2 - Deeper Unconsolidated Aquifer					
C2-MW-7	C2-MW-7	02/26/09	NS	NS	NS
	C2-MW-7	05/12/09	0.080 U	0.40 U	0.050 U
	C2-MW-7	12/17/09	NS	NS	NS
	C2-MW-7	03/29/10	NS	NS	NS
	C2-MW-7	05/26/10	NS	NS	NS
	C2-MW-7	11/30/10	NS	NS	NS
	C2-MW-7	03/25/11	**0.19**	**0.84**	0.050 U
C2-MW-10(R)	C2-MW-10	02/27/09	**0.82 B**	**1.6**	0.025 U
	C2-MW-10	05/12/09	**1.1**	**0.85**	0.050 U
	C2-MW-10	12/17/09	**1.5**	**1.8**	0.050 U
	C2-MW-10	03/29/10	**0.82**	**1.0**	0.050 U
	C2-MW-10	05/25/10	**0.77**	**0.99**	0.050 U
	C2-MW-10	11/30/10	**1.7**	**1.9**	0.050 U
	C2-MW-10	03/25/11	**1.4**	**1.1**	0.050 U
	C2-MW-10	10/12/11	**0.70**	**0.90**	0.050 U
	C2-MW-10	03/01/12	**1.2**	**1.1**	0.050 U
	C2-MW-10	09/20/12	**1.2**	**0.92**	0.025 U
	C2-MW-10	03/21/13	**0.90**	**1.6**	NA
	C2-MW-10	09/23/13	NS	NS	NS
	C2-MW-10	03/21/14	NS	NS	NS
	C2-MW-10	09/03/14	NS	NS	NS
	C2-MW-10	09/03/14	NS	NS	NS

Table 7. Total Petroleum Hydrocarbons in the Shallow Zone
Former Fort Vancouver Plywood Site

Well ID	Sample ID	Date Sampled	TPH-Dx Diesel-Range mg/l	TPH-Dx Oil-Range mg/l	TPH-Gx Gasoline-Range mg/l
Ecology's MTCA Method B Surface Water Cleanup Levels			NE	NE	NE
Ecology's Acute Freshwater Surface Water Quality Criteria			NE	NE	NE
EPA's National Toxics Rule Human Health Criteria for Surface Water			NE	NE	NE
Ecology's MTCA Method A Groundwater Cleanup Levels			0.50	0.50	1.0 [(a)]
Ecology's MTCA Method B Groundwater Cleanup Levels			NE	NE	NE
C2-MW-11(R)	C2-MW-11	02/27/09	**1.2 B**	**0.73**	0.025 U
	C2-MW-11	05/12/09	0.085 U	0.43 U	0.050 U
	C2-MW-11	12/18/09	**0.78**	**0.88**	**0.11**
	C2-MW-11	03/29/10	**0.56**	**0.61**	0.050 U
	C2-MW-11	05/26/10	**0.68**	**0.77**	**0.069**
	C2-MW-11	11/30/10	**0.27**	**0.39**	0.050 U
	C2-MW-11	03/25/11	**0.74**	**0.58**	**0.053**
	C2-MW-11	10/12/11	**0.19**	0.38 U	0.050 U
	C2-MW-11	03/01/12	**0.51**	**0.58**	0.050 U
	C2-MW-11	09/20/12	**0.27**	0.80 U	0.025 U
	C2-MW-11	03/22/13	0.40 U	**0.53**	0.10 U
	C2-MW-11	09/23/13	0.011 U	0.018 U	0.10 U
	C2-MW-11	03/21/14	**0.39**	**0.12 J**	**0.21**

Notes:
B = Constituent was detected above the laboratory reporting limit in the method blank.
DUP = Duplicate sample.
J = Constituent was not positively identified; the associated value is estimated.
mg/l = milligrams per liter
MTCA = Washington State Department of Ecology Model Toxics Control Act
NA = Not analyzed
NE = Not established
NS = Not sampled because well was not accessible.
U = Constituent not detected at or above the reporting limit (prior to 2014) or method detection limit (2014 to current).
TPH = Total Petroleum Hydrocarbons
TPH-Gx = Total Petroleum Hydrocarbons gasoline-range
TPH-Dx = Total Petroleum Hydrocarbons diesel- and oil-range
Values in **bold** were detected above the laboratory method detection limit.
= Indicates a monitoring well that was either abandoned or unlocatable as paved over.
= Indicates an exceedance of a screening criterion.
Ecology's MTCA values were obtained from the Washington State Department of Ecology Cleanup Level and Risk Calculations (CLARC) web site. The lower of the carcinogen and noncarcinogen MTCA Method B value is presented. https://fortress.wa.gov/ecy/clarc/CLARCHome.aspx
Ecology's Acute Freshwater Surface Water Quality Criteria were obtained from the Washington State Legislature Washington Administrative Code web site. http://apps.leg.wa.gov/WAC/default.aspx?cite=173-201A-240
EPA's National Toxics Rule Human Health Criteria for Surface Water were obtained through the Washington State Department of Ecology web site for Toxics Standards and Criteria. http://www.ecy.wa.gov/programs/wq/swqs/toxics.html
(a) = Value is for gasoline concentration when benzene is not present.

Appendix A
Field Forms

Groundwater Monitoring Field Form

AECOM

Project Information				
Project Name:	Fort Vancouver Plywood	Field Team:	MARK TAUSCHER	
Project Number:	60519969	Date:	9/8/2020	Page 1 of 1

Field Measurements and Observations

Cell #	Well ID	Time	Depth to Water (feet BTOC)	Condition Assessment • Status of each well • Replace broken lids, bolts, gaskets, caps, & locks	Aquifer	Screen Interval (feet)	Sampling Plan: Collect Sample	Sampling Method	Analytes	QC	Containers	
Cell 1	C1-MW-4	0959	24.77	needs gasket if possible. All else good	Shallow	17-32	X	PP/Bailer	VOCs		3 VOAs	-
	C1-MW-7			NA	Shallow	15-30	X	PP/Bailer	BTEX, MTBE		3 VOAs	-
Cell 2	C2-MW-3	1110	13.01	good	Shallow	6-16	X	PP/Bailer	Gx, Dx		3 VOAs	2 Ambers
	C2-MW-9	0858	25.88	good	Shallow	25-35	X	PP/Bailer	VOCs, Gx, Dx	FD**	3 VOAs 3 VOAs	2 Ambers 2 Ambers
	C2-MW-10(R2)	0738	28.55	good	Shallow	20-35	X	PP/Bailer	Gx, Dx		3 VOAs	2 Ambers
	C2-MW-11(R)	1043	25.79	good	Shallow	15-30	X	PP/Bailer	VOCs, Gx, Dx		3 VOAs	2 Ambers
	C2-MW-12B	0635	27.53	good	Deeper	40-50	X	Bladder	VOCs, Gx, Dx		3 VOAs	2 Ambers

Definitions:
BTEX = benzene, toluene, ethylbenzene, and total xylenes
Dx = diesel and heavy oil range organics
Gx = gasoline range organics
MTBE = methyl tert-butyl ether
PP/Bailer = purging conducted using peristaltic pump and then sampling conducted using a double check ball disposable bailer
QC = quality control samples
VOA = volatile organic analysis
VOC = volatile organic carbon

Sampling Schedule (18+ months):
September 2017
March 2019
September 2020
March 2022

Sampling Notes:
FD ** = Fieldd duplicate - collect field duplicate on C2-MW-9. If not accessible, collect the field duplicate on C2-MW-11 or C2-MW-12B. Run duplicate for all analyses.
Lab = Apex Labs
Drum purge water. Store drums under the 26th Ave Underpass until they are full enough for disposal.
Trip Blank - VOCs only

AECOM

Monitoring Well Sampling Field Log

Well Number: C1-MW-4

Date: 9/8/20

Project Information	
Project Name:	POV FVP
AECOM Project Number:	

Sampling Information	
Field Team:	TAUSCHER
Pump Type:	P-Pump
Purging & Sampling Method:	Bailer / LOW FLOW
Water Quality Meter: Model:	HORIBA
Serial Number:	
Purge Water Disposition:	on site tank.

Comments

DTW = 24.77

Well Construction Information

Stick-up or Flush	Well Diameter (in)	Total Depth (ft btoc)	Screen Interval (ft bgs or btoc)
FLUSH	2	32	17-32

Monitoring Information

Initial DTW (ft btoc)	Saturated Screen Interval (ft bgs or btoc)	Pump Intake Depth (ft btoc):
24.77	7'	29'

Sample Containers

Number	Type	Preservative	Analytical Parameters	Filtered?
3	VOA	HCL	VOC	N

Well Purge Data

Time	Volume Purged (L)	Purge Rate / Drawdown	DTW (feet btoc)	Temp. (°C)	Conductivity (mS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTUs)	Clarity/Color/ Remarks
0959	:Time Pump On	< 1 L/min / < 0.3 feet	Initial DTW 24.77	± 0.1 °C	± 0.01 (< 1) ± 0.02 (> 1)	± 0.05 (< 1) ± 0.2 (> 1)	± 0.1	± 10 mv	Not Established	<= Ecology Stabilization Criteria (3 readings)
1005	.5	200	25.11	17.58	2.16	0.99	6.20	-21	15.4	clear
1010	1.5	200	25.09	17.54	2.14	0.05	6.11	-31	16.1	clear
1015	2	100	25.07	17.48	2.14	0.0	6.04	-32	18.2	clear
1020	2.5	100	25.06	17.75	2.14	0.0	5.98	-34	21.4	clear
1025	3.0	100	25.06	17.88	2.14	0.0	5.98	-37	20.1	clear
1030	3.5	100	25.05	17.92	2.14	0.0	5.99	-39	19.8	clear
1035	4.0	100	25.05	17.93	2.14	0.0	5.99	-40	19.7	clear
1040	SAMPLE									

Sampling Information			
1040	Start Filling Containers	Designated for MS/MSD? (circle one) No Yes	Collected QA Sample? (circle one) No ~~Duplicate Rinsate Blank~~
1042	Finish Filling Containers	Primary Sample ID: C1-MW-4	QA Sample ID:
		Primary Sample Time 1040	QA Sample Time

Acronyms: bgs= below ground surface btoc=below top of casing DTW=depth to water
Clarity: VC=very cloudy Cl=cloudy SC=slightly cloudy AC=almost clear C=clear CC=crystal clear

AECOM

Monitoring Well Sampling Field Log

Well Number: CZ-MW-3

Date: 9/8/20

Project Information	
Project Name:	POV FVP
AECOM Project Number:	

Sampling Information	
Field Team:	TAUSCHER
Pump Type:	P-PUMP
Purging & Sampling Method:	LOW FLOW / BAILER
Water Quality Meter: Model:	HORIBA
Serial Number:	
Purge Water Disposition:	on site tank

Comments

Well Construction Information

Stick-up or Flush	Well Diameter (in)	Total Depth (ft btoc)	Screen Interval (ft bgs or btoc)
FLUSH	2	16	6-16

Monitoring Information

Initial DTW (ft btoc)	Saturated Screen Interval (ft bgs or btoc)	Pump Intake Depth (ft btoc):
13.01	3'	15'

Sample Containers

Number	Type	Preservative	Analytical Parameters	Filtered?
3	VOA	HCL	GX	
2	1L AMB	HCL	DX	

Well Purge Data

Time	Volume Purged (L)	Purge Rate / Drawdown	DTW (feet btoc)	Temp. (°C)	Conductivity (mS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTUs)	Clarity/Color/ Remarks
1110	:Time Pump On	< 1 L/min / < 0.3 feet	Initial DTW 13.01	± 0.1 °C	± 0.01 (< 1) ± 0.02 (> 1)	± 0.05 (< 1) ± 0.2 (> 1)	± 0.1	± 10 mv	Not Established	<= Ecology Stabilization Criteria (3 readings)
1115	0.5	100	13.03	19.53	0.286	0.33	6.45	28	74.9	clear
1120	1	100	13.04	19.68	0.256	0.0	6.24	44	51.9	clear
1125	1.5	100	13.04	19.75	0.253	0.0	6.25	45	47.9	clear
1130	2	100	13.05	19.75	0.249	0.0	6.26	46	42.6	clear
1135	2.5	100	13.05	19.63	0.247	0.0	6.27	46	39.2	clear
1140	3.0	100	13.04	19.99	0.245	0.0	6.29	46	37.8	clear
1145	3.5	100	13.04	20.40	0.244	0.0	6.31	45	23.1	clear
1150	4.0	100	13.04	20.31	0.243	0.0	6.33	45	24.8	
1155	SAMPLE									

Sampling Information			
1155	Start Filling Containers	Designated for MS/MSD? (circle one) No Yes	Collected QA Sample? (circle one) No Duplicate Rinsate Blank
1234	Finish Filling Containers	Primary Sample ID: CZ-MW-3	QA Sample ID:
		Primary Sample Time 1155	QA Sample Time

Acronymns: bgs= below ground surface btoc=below top of casing DTW=depth to water
Clarity: VC=very cloudy Cl=cloudy SC=slightly cloudy AC=almost clear C=clear CC=crystal clear

AECOM

Monitoring Well Sampling Field Log

Well Number: CZ-MW-9

Date: 9/9/20

Project Information	
Project Name:	POV FVP
AECOM Project Number:	

Sampling Information	
Field Team:	TAUSCHER
Pump Type:	P-PUMP
Purging & Sampling Method:	~~R-Pump~~ Bailer / LOW FLOW
Water Quality Meter: Model:	HORIBA
Serial Number:	
Purge Water Disposition:	on site tank.

Comments

Duplicate collected

Well Construction Information			
Stick-up or Flush	Well Diameter (in)	Total Depth (ft btoc)	Screen Interval (ft bgs or btoc)
FLUSH	2	35	20-35

Monitoring Information		
Initial DTW (ft btoc)	Saturated Screen Interval (ft bgs or btoc)	Pump Intake Depth (ft btoc):
25.88	~~25~~ 10'	31'

Sample Containers

Number	Type	Preservative	Analytical Parameters	Filtered?
3	VOA	HCL	VOC, Cl, X	
2	1L AMB	HCL	DX	
3	VOA	HCL	VOC, Cl, X	
2	1L AMB	HCL	DX	

Well Purge Data

Time	Volume Purged (L)	Purge Rate / Drawdown	DTW (feet btoc)	Temp. (°C)	Conductivity (mS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTUs)	Clarity/Color/ Remarks
0858	:Time Pump On	< 1 L/min / < 0.3 feet	~~Initial DTW~~ 25.88	± 0.1 °C	± 0.01 (< 1) ± 0.02 (> 1)	± 0.05 (< 1) ± 0.2 (> 1)	± 0.1	± 10 mv	Not Established	<= Ecology Stabilization Criteria (3 readings)
0900	-	220	-	20.70	0.842	1.96	6.63	-92	33.2	clear
0905	1	200	26.51	19.07	0.798	0.0	6.49	-100	22.9	clear
0910	2	200	26.66	18.46	0.773	0.0	6.43	-104	56.3	clear
0915	2.5	100	26.78	18.26	0.774	0.0	6.42	-105	67.4	clear
0920	3	100	26.77	18.41	0.772	0.0	6.41	-107	35.6	clear
0925	3.5	100	26.76	18.42	0.772	0.47	6.41	-107	30.5	clear
0930	4	100	26.76	18.42	0.772	0.46	6.41	-107	26.0	clear
0935	4.5	100	26.75	18.43	0.773	0.45	6.41	-108	25.9	clear
0940	5.0	100	26.75	18.45	0.774	0.45	6.41	-109	25.5	clear
0945	SAMPLE									

Sampling Information		Designated for MS/MSD? (circle one) No Yes	Collected QA Sample? (circle one) No Duplicate Rinsate Blank
0945	Start Filling Containers	Primary Sample ID: CZ-MW-9	QA Sample ID: CZ-MW-9-D
1013	Finish Filling Containers	Primary Sample Time 0945	QA Sample Time 0950

Acronymns: bgs= below ground surface btoc=below top of casing DTW=depth to water
Clarity: VC=very cloudy Cl=cloudy SC=slightly cloudy AC=almost clear C=clear CC=crystal clear

AECOM

Monitoring Well Sampling Field Log

Well Number: CZ-MW-10(RZ)

Date: 9/9/2020

Project Information	
Project Name:	POV FVP
AECOM Project Number:	

Sampling Information	
Field Team:	TAUSCHER
Pump Type:	Bladder pump
Purging & Sampling Method:	Low Flow / Bailer
Water Quality Meter: Model:	HORIBA
Serial Number:	
Purge Water Disposition:	on site

Comments

P-Pump not working - H_2O too low

Switched to Bladder pump for better results

Well Construction Information			
Stick-up or Flush	Well Diameter (in)	Total Depth (ft btoc)	Screen Interval (ft bgs or btoc)
FLUSH	2	35	20-35

Monitoring Information		
Initial DTW (ft btoc)	Saturated Screen Interval (ft bgs or btoc)	Pump Intake Depth (ft btoc):
28.55	6.5'	32.5'

Sample Containers

Number	Type	Preservative	Analytical Parameters	Filtered?
3	VOA	HCL	GX	
2	1 LAMB	HCL	DX	

Well Purge Data

Time	Volume Purged (L)	Purge Rate / Drawdown	DTW (feet btoc)	Temp. (°C)	Conductivity (mS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTUs)	Clarity/Color/ Remarks
0738	:Time Pump On	< 1 L/min / < 0.3 feet	Initial DTW 28.55	± 0.1 °C	± 0.01 (< 1) ± 0.02 (> 1)	± 0.05 (< 1) ± 0.2 (> 1)	± 0.1	± 10 mv	Not Established	<= Ecology Stabilization Criteria (3 readings)
0757	~~100~~ 0	100	29.01	18.91	1.18	0.0	6.46	-55	47.2	clear
0800	.5	180	29.16	18.97	1.17	0.0	6.47	-64	44.5	clear
0805	1	100	29.07	19.04	1.18	0.0	6.49	-94	27.4	clear
0810	1.5	100	29.06	19.00	1.18	0.0	6.49	-94	30.7	clear
0815	2.0	100	29.05	19.13	1.18	0.0	6.50	-96	29.7	clear
0820	2.5	100	29.05	19.26	1.18	0.0	6.50	-99	25.8	clear
0825	3.0	10.0	29.05	19.28	1.18	0.0	6.50	-99	26.8	clear
0830	3.5	100	29.05	19.33	1.18	0.0	6.50	-100	25.4	clear
0835	SAMPLE									

MT

Sampling Information		Designated for MS/MSD? (circle one) No Yes	Collected QA Sample? (circle one) No Duplicate Rinsate Blank
0835	Start Filling Containers	Primary Sample ID: CZ-MW-10(RZ)	QA Sample ID:
0849	Finish Filling Containers	Primary Sample Time 0835	QA Sample Time

Acronyms: bgs= below ground surface btoc=below top of casing DTW=depth to water
Clarity: VC=very cloudy Cl=cloudy SC=slightly cloudy AC=almost clear C=clear CC=crystal clear

AECOM

Monitoring Well Sampling Field Log

Well Number: CZ-MW-11(R)

Date: 9/9/20

Project Information	
Project Name:	POV FUP
AECOM Project Number:	
Sampling Information	
Field Team:	TAUSCHER
Pump Type:	P-PUMP
Purging & Sampling Method:	LOW FLOW
Water Quality Meter: Model:	HORIBA
Serial Number:	
Purge Water Disposition:	on site tank

Comments

Well Construction Information			
Stick-up or Flush	Well Diameter (in)	Total Depth (ft btoc)	Screen Interval (ft bgs or btoc)
FLUSH	2	30	15-30

Monitoring Information		
Initial DTW (ft btoc)	Saturated Screen Interval (ft bgs or btoc)	Pump Intake Depth (ft btoc):
25.79	4'	28

Sample Containers

Number	Type	Preservative	Analytical Parameters	Filtered?
3	VOA	HCL	VOC, CHX	
2	1L AM3	HCL	DX	

Well Purge Data

Time	Volume Purged (L)	Purge Rate / Drawdown	DTW (feet btoc)	Temp. (°C)	Conductivity (mS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTUs)	Clarity/Color/ Remarks
1043	:Time Pump On	< 1 L/min / < 0.3 feet	Initial DTW 25.79	± 0.1 °C	± 0.01 (< 1) ± 0.02 (> 1)	± 0.05 (< 1) ± 0.2 (> 1)	± 0.1	± 10 mv	Not Established	<= Ecology Stabilization Criteria (3 readings)
1045	-	220	25.86	20.81	0.778	0.0	6.42	-117	0.0	clear
1050	1	200	25.85	21.90	0.762	0.0	6.45	-128	0.0	clear
1055	2	200	25.85	21.96	0.762	0.0	6.45	-129	12.2	clear
1100	2.5	100	25.84	22.13	0.764	0.0	6.45	-130	13.0	clear
1105	3	100	25.84	22.42	0.769	0.0	6.47	-132	14.0	clear
1110	3.5	100	25.85	22.73	0.769	0.0	6.49	-134	14.9	clear
1115	4	100	25.85	22.79	0.770	0.0	6.50	-134	15.5	clear
1120	4.5	100	25.86	22.82	0.770	0.0	6.50	-134	15.0	clear
1125	5	100	25.86	23.02	0.770	0.0	6.51	-135	14.0	clear
1130	SAMPLE									

Sampling Information			
1130	Start Filling Containers	Designated for MS/MSD? (circle one) (No) Yes	Collected QA Sample? (circle one) (No) Duplicate Rinsate Blank
1143	Finish Filling Containers	Primary Sample ID: CZ-MW-11(R)	QA Sample ID:
		Primary Sample Time 1130	QA Sample Time

Acronymns: bgs= below ground surface btoc=below top of casing DTW=depth to water
Clarity: VC=very cloudy Cl=cloudy SC=slightly cloudy AC=almost clear C=clear CC=crystal clear

AECOM

Monitoring Well Sampling Field Log

Well Number: CZ-MW-12B

Date: 9/8/20

Project Information	
Project Name:	POV EVP
AECOM Project Number:	

Sampling Information	
Field Team:	TAUSCHER
Pump Type:	BLADDER
Purging & Sampling Method:	LOW FLOW / BAILER
Water Quality Meter: Model:	HORIBA
Serial Number:	
Purge Water Disposition:	on site tank

Comments

Well Construction Information

Stick-up or Flush	Well Diameter (in)	Total Depth (ft btoc)	Screen Interval (ft bgs or btoc)
FLUSH	2	50	40-50

Monitoring Information

Initial DTW (ft btoc)	Saturated Screen Interval (ft bgs or btoc)	Pump Intake Depth (ft btoc):
27.53	10'	45' BTOC

Sample Containers

Number	Type	Preservative	Analytical Parameters	Filtered?
3	VOA	HCL	Cox / VOC	
2	1L AMB	HCL	Dx	

Well Purge Data

Time	Volume Purged (L)	Purge Rate / Drawdown	DTW (feet btoc)	Temp. (°C)	Conductivity (mS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTUs)	Clarity/Color/ Remarks
0635	Time Pump On	< 1 L/min / < 0.3 feet	Initial DTW 27.53	± 0.1 °C	± 0.01 (< 1) ± 0.02 (> 1)	± 0.05 (< 1) ± 0.2 (> 1)	± 0.1	± 10 mv	Not Established	<= Ecology Stabilization Criteria (3 readings)
0639	0.25	260	27.57	16.74	0.338	4.48	6.94	96	9.3	clear
0643	1.25	250	27.56	16.44	0.333	3.18	6.83	88	5.0	clear
0647	2.25	250	27.56	16.40	0.332	3.08	6.81	88	7.1	clear
651	3.25	250	27.56	16.18	0.330	2.52	6.72	88	14.0	clear
0655	4.25	250	27.56	16.17	0.330	2.44	6.71	89	14.5	clear
0700	5.25	200	27.56	16.16	0.329	2.36	6.68	89	12.7	clear
0705	6.25	200	27.55	16.14	0.329	2.32	6.68	88	13.0	clear
0710	7.25	200	27.55	16.13	0.328	2.33	6.67	89	12.8	clear
0715	SAMPLE									

Sampling Information		Designated for MS/MSD? (circle one) No Yes	Collected QA Sample? (circle one) No Duplicate Rinsate Blank
0715	Start Filling Containers	Primary Sample ID: CZ-MW-12B	QA Sample ID:
0727	Finish Filling Containers	Primary Sample Time 0715	QA Sample Time

Acronymns: bgs= below ground surface btoc=below top of casing DTW=depth to water
Clarity: VC=very cloudy Cl=cloudy SC=slightly cloudy AC=almost clear C=clear CC=crystal clear

Appendix B
Laboratory Report and Chain-of-Custody Form

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

Thursday, September 24, 2020

Nicky Moody
AECOM
111 SW Columbia St. Ste. 1500
Portland, OR 97201

RE: A0I0248 - POV FVP - 60519969

Thank you for using Apex Laboratories. We greatly appreciate your business and strive to provide the highest quality services to the environmental industry.

Enclosed are the results of analyses for work order A0I0248, which was received by the laboratory on 9/9/2020 at 12:55:00PM.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: DAuvil@apex-labs.com, or by phone at 503-718-2323.

Please note: All samples will be disposed of within 30 days of sample receipt, unless prior arrangements have been made.

Cooler Receipt Information

(See Cooler Receipt Form for details)

Cooler #1	5.4 degC

This Final Report is the official version of the data results for this sample submission, unless superseded by a subsequent, labeled amended report.
All other deliverables derived from this data, including Electronic Data Deliverables (EDDs), CLP-like forms, client requested summary sheets, and all other products are considered secondary to this report.

Apex Laboratories

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.

Darrell Auvil, Project Manager

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

AECOM	Project: **POV FVP**	
111 SW Columbia St. Ste. 1500	Project Number: **60519969**	**Report ID:**
Portland, OR 97201	Project Manager: **Nicky Moody**	**A0I0248 - 09 24 20 1115**

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
C1-MW-4	A0I0248-01	Water	09/08/20 10:40	09/09/20 12:55
C2-MW-3	A0I0248-02	Water	09/08/20 11:55	09/09/20 12:55
C2-MW-9	A0I0248-03	Water	09/09/20 09:45	09/09/20 12:55
C2-MW-10(R2)	A0I0248-04	Water	09/09/20 08:35	09/09/20 12:55
C2-MW-11(R)	A0I0248-05	Water	09/09/20 11:30	09/09/20 12:55
C2-MW-12B	A0I0248-06	Water	09/09/20 07:15	09/09/20 12:55
C2-MW-9-D	A0I0248-07	Water	09/09/20 09:50	09/09/20 12:55
Trip Blank	A0I0248-08	Water	09/08/20 00:00	09/09/20 12:55

Apex Laboratories

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

AECOM	Project: **POV FVP**	
111 SW Columbia St. Ste. 1500	Project Number: **60519969**	**Report ID:**
Portland, OR 97201	Project Manager: **Nicky Moody**	**A0I0248 - 09 24 20 1115**

ANALYTICAL SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
C2-MW-3 (A0I0248-02)				**Matrix: Water**		**Batch: 0090432**		
Diesel	ND	0.0935	0.187	mg/L	1	09/15/20 21:29	NWTPH-Dx	
Oil	ND	0.187	0.374	mg/L	1	09/15/20 21:29	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 85 %*	*Limits: 50-150 %*		*1*	*09/15/20 21:29*	*NWTPH-Dx*	
C2-MW-9 (A0I0248-03)				**Matrix: Water**		**Batch: 0090432**		
Diesel	ND	0.0935	0.187	mg/L	1	09/15/20 21:49	NWTPH-Dx	
Oil	ND	0.187	0.374	mg/L	1	09/15/20 21:49	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 83 %*	*Limits: 50-150 %*		*1*	*09/15/20 21:49*	*NWTPH-Dx*	
C2-MW-10(R2) (A0I0248-04)				**Matrix: Water**		**Batch: 0090432**		
Diesel	**0.328**	0.0943	0.189	mg/L	1	09/15/20 22:09	NWTPH-Dx	**F-11**
Oil	ND	0.189	0.377	mg/L	1	09/15/20 22:09	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 87 %*	*Limits: 50-150 %*		*1*	*09/15/20 22:09*	*NWTPH-Dx*	
C2-MW-11(R) (A0I0248-05)				**Matrix: Water**		**Batch: 0090432**		
Diesel	**0.112**	0.0943	0.189	mg/L	1	09/15/20 22:30	NWTPH-Dx	**J**
Oil	ND	0.189	0.377	mg/L	1	09/15/20 22:30	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 81 %*	*Limits: 50-150 %*		*1*	*09/15/20 22:30*	*NWTPH-Dx*	
C2-MW-12B (A0I0248-06)				**Matrix: Water**		**Batch: 0090432**		
Diesel	ND	0.0943	0.189	mg/L	1	09/15/20 22:50	NWTPH-Dx	
Oil	ND	0.189	0.377	mg/L	1	09/15/20 22:50	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 81 %*	*Limits: 50-150 %*		*1*	*09/15/20 22:50*	*NWTPH-Dx*	
C2-MW-9-D (A0I0248-07)				**Matrix: Water**		**Batch: 0090432**		
Diesel	ND	0.0943	0.189	mg/L	1	09/15/20 23:10	NWTPH-Dx	
Oil	ND	0.189	0.377	mg/L	1	09/15/20 23:10	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 86 %*	*Limits: 50-150 %*		*1*	*09/15/20 23:10*	*NWTPH-Dx*	

Apex Laboratories

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Darrell Auvil, Project Manager

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

AECOM	Project: **POV FVP**	
111 SW Columbia St. Ste. 1500	Project Number: **60519969**	**Report ID:**
Portland, OR 97201	Project Manager: **Nicky Moody**	**A0I0248 - 09 24 20 1115**

ANALYTICAL SAMPLE RESULTS

Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
C2-MW-3 (A0I0248-02)				**Matrix: Water**		**Batch: 0090345**		
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	09/12/20 17:02	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery: 101 %*	*Limits: 50-150 %*		*1*	*09/12/20 17:02*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*107 %*	*50-150 %*	*1*	*09/12/20 17:02*	*NWTPH-Gx (MS)*	
C2-MW-9 (A0I0248-03)				**Matrix: Water**		**Batch: 0090345**		
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	09/12/20 17:29	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery: 102 %*	*Limits: 50-150 %*		*1*	*09/12/20 17:29*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*107 %*	*50-150 %*	*1*	*09/12/20 17:29*	*NWTPH-Gx (MS)*	
C2-MW-10(R2) (A0I0248-04)				**Matrix: Water**		**Batch: 0090345**		
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	09/12/20 17:56	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery: 101 %*	*Limits: 50-150 %*		*1*	*09/12/20 17:56*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*107 %*	*50-150 %*	*1*	*09/12/20 17:56*	*NWTPH-Gx (MS)*	
C2-MW-11(R) (A0I0248-05)				**Matrix: Water**		**Batch: 0090345**		
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	09/12/20 18:23	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery: 103 %*	*Limits: 50-150 %*		*1*	*09/12/20 18:23*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*106 %*	*50-150 %*	*1*	*09/12/20 18:23*	*NWTPH-Gx (MS)*	
C2-MW-12B (A0I0248-06)				**Matrix: Water**		**Batch: 0090345**		
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	09/12/20 18:50	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery: 100 %*	*Limits: 50-150 %*		*1*	*09/12/20 18:50*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*106 %*	*50-150 %*	*1*	*09/12/20 18:50*	*NWTPH-Gx (MS)*	
C2-MW-9-D (A0I0248-07)				**Matrix: Water**		**Batch: 0090345**		
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	09/12/20 19:17	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery: 101 %*	*Limits: 50-150 %*		*1*	*09/12/20 19:17*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*108 %*	*50-150 %*	*1*	*09/12/20 19:17*	*NWTPH-Gx (MS)*	

Apex Laboratories

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Darrell Auvil, Project Manager

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

AECOM	Project: **POV FVP**	
111 SW Columbia St. Ste. 1500	Project Number: **60519969**	**Report ID:**
Portland, OR 97201	Project Manager: **Nicky Moody**	**A0I0248 - 09 24 20 1115**

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
C1-MW-4 (A0I0248-01)				**Matrix: Water**		**Batch: 0090345**		
Acetone	ND	10.0	20.0	ug/L	1	09/12/20 16:35	EPA 8260D	
Benzene	ND	0.100	0.200	ug/L	1	09/12/20 16:35	EPA 8260D	
Bromobenzene	ND	0.250	0.500	ug/L	1	09/12/20 16:35	EPA 8260D	
Bromochloromethane	ND	0.500	1.00	ug/L	1	09/12/20 16:35	EPA 8260D	
Bromodichloromethane	ND	0.500	1.00	ug/L	1	09/12/20 16:35	EPA 8260D	
Bromoform	ND	0.500	1.00	ug/L	1	09/12/20 16:35	EPA 8260D	
Bromomethane	ND	5.00	5.00	ug/L	1	09/12/20 16:35	EPA 8260D	
2-Butanone (MEK)	ND	5.00	10.0	ug/L	1	09/12/20 16:35	EPA 8260D	
n-Butylbenzene	ND	0.500	1.00	ug/L	1	09/12/20 16:35	EPA 8260D	
sec-Butylbenzene	ND	0.500	1.00	ug/L	1	09/12/20 16:35	EPA 8260D	
tert-Butylbenzene	ND	0.500	1.00	ug/L	1	09/12/20 16:35	EPA 8260D	
Carbon tetrachloride	ND	0.500	1.00	ug/L	1	09/12/20 16:35	EPA 8260D	
Chlorobenzene	ND	0.250	0.500	ug/L	1	09/12/20 16:35	EPA 8260D	
Chloroethane	ND	5.00	5.00	ug/L	1	09/12/20 16:35	EPA 8260D	
Chloroform	ND	0.500	1.00	ug/L	1	09/12/20 16:35	EPA 8260D	
Chloromethane	ND	2.50	5.00	ug/L	1	09/12/20 16:35	EPA 8260D	
2-Chlorotoluene	ND	0.500	1.00	ug/L	1	09/12/20 16:35	EPA 8260D	
4-Chlorotoluene	ND	0.500	1.00	ug/L	1	09/12/20 16:35	EPA 8260D	
Dibromochloromethane	ND	0.500	1.00	ug/L	1	09/12/20 16:35	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	ug/L	1	09/12/20 16:35	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	0.250	0.500	ug/L	1	09/12/20 16:35	EPA 8260D	
Dibromomethane	ND	0.500	1.00	ug/L	1	09/12/20 16:35	EPA 8260D	
1,2-Dichlorobenzene	ND	0.250	0.500	ug/L	1	09/12/20 16:35	EPA 8260D	
1,3-Dichlorobenzene	ND	0.250	0.500	ug/L	1	09/12/20 16:35	EPA 8260D	
1,4-Dichlorobenzene	ND	0.250	0.500	ug/L	1	09/12/20 16:35	EPA 8260D	
Dichlorodifluoromethane	ND	0.500	1.00	ug/L	1	09/12/20 16:35	EPA 8260D	
1,1-Dichloroethane	**0.330**	0.200	0.400	ug/L	1	09/12/20 16:35	EPA 8260D	**J**
1,2-Dichloroethane (EDC)	ND	0.200	0.400	ug/L	1	09/12/20 16:35	EPA 8260D	
1,1-Dichloroethene	ND	0.200	0.400	ug/L	1	09/12/20 16:35	EPA 8260D	
cis-1,2-Dichloroethene	**0.820**	0.200	0.400	ug/L	1	09/12/20 16:35	EPA 8260D	
trans-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	09/12/20 16:35	EPA 8260D	
1,2-Dichloropropane	ND	0.250	0.500	ug/L	1	09/12/20 16:35	EPA 8260D	
1,3-Dichloropropane	ND	0.500	1.00	ug/L	1	09/12/20 16:35	EPA 8260D	

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Darrell Auvil, Project Manager

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

AECOM	Project: **POV FVP**	
111 SW Columbia St. Ste. 1500	Project Number: **60519969**	**Report ID:**
Portland, OR 97201	Project Manager: **Nicky Moody**	**A0I0248 - 09 24 20 1115**

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
C1-MW-4 (A0I0248-01)				**Matrix: Water**		**Batch: 0090345**		
2,2-Dichloropropane	ND	0.500	1.00	ug/L	1	09/12/20 16:35	EPA 8260D	
1,1-Dichloropropene	ND	0.500	1.00	ug/L	1	09/12/20 16:35	EPA 8260D	
cis-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	09/12/20 16:35	EPA 8260D	
trans-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	09/12/20 16:35	EPA 8260D	
Ethylbenzene	ND	0.250	0.500	ug/L	1	09/12/20 16:35	EPA 8260D	
Hexachlorobutadiene	ND	2.50	5.00	ug/L	1	09/12/20 16:35	EPA 8260D	
2-Hexanone	ND	5.00	10.0	ug/L	1	09/12/20 16:35	EPA 8260D	
Isopropylbenzene	ND	0.500	1.00	ug/L	1	09/12/20 16:35	EPA 8260D	
4-Isopropyltoluene	ND	1.00	2.00	ug/L	1	09/12/20 16:35	EPA 8260D	
Methylene chloride	ND	5.00	10.0	ug/L	1	09/12/20 16:35	EPA 8260D	
4-Methyl-2-pentanone (MiBK)	ND	5.00	10.0	ug/L	1	09/12/20 16:35	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND	0.500	1.00	ug/L	1	09/12/20 16:35	EPA 8260D	
Naphthalene	ND	2.00	4.00	ug/L	1	09/12/20 16:35	EPA 8260D	
n-Propylbenzene	ND	0.250	0.500	ug/L	1	09/12/20 16:35	EPA 8260D	
Styrene	ND	0.500	1.00	ug/L	1	09/12/20 16:35	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	0.200	0.400	ug/L	1	09/12/20 16:35	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	0.250	0.500	ug/L	1	09/12/20 16:35	EPA 8260D	
Tetrachloroethene (PCE)	ND	0.200	0.400	ug/L	1	09/12/20 16:35	EPA 8260D	
Toluene	ND	0.500	1.00	ug/L	1	09/12/20 16:35	EPA 8260D	
1,2,3-Trichlorobenzene	ND	1.00	2.00	ug/L	1	09/12/20 16:35	EPA 8260D	
1,2,4-Trichlorobenzene	ND	1.00	2.00	ug/L	1	09/12/20 16:35	EPA 8260D	
1,1,1-Trichloroethane	ND	0.200	0.400	ug/L	1	09/12/20 16:35	EPA 8260D	
1,1,2-Trichloroethane	ND	0.250	0.500	ug/L	1	09/12/20 16:35	EPA 8260D	
Trichloroethene (TCE)	ND	0.200	0.400	ug/L	1	09/12/20 16:35	EPA 8260D	
Trichlorofluoromethane	ND	1.00	2.00	ug/L	1	09/12/20 16:35	EPA 8260D	
1,2,3-Trichloropropane	ND	0.500	1.00	ug/L	1	09/12/20 16:35	EPA 8260D	
1,2,4-Trimethylbenzene	ND	0.500	1.00	ug/L	1	09/12/20 16:35	EPA 8260D	
1,3,5-Trimethylbenzene	ND	0.500	1.00	ug/L	1	09/12/20 16:35	EPA 8260D	
Vinyl chloride	**0.170**	0.100	0.200	ug/L	1	09/12/20 16:35	EPA 8260D	**J**
m,p-Xylene	ND	0.500	1.00	ug/L	1	09/12/20 16:35	EPA 8260D	
o-Xylene	ND	0.250	0.500	ug/L	1	09/12/20 16:35	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*108 %*	*Limits: 80-120 %*	*1*	*09/12/20 16:35*	*EPA 8260D*	
Toluene-d8 (Surr)			*101 %*	*80-120 %*	*1*	*09/12/20 16:35*	*EPA 8260D*	

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Darrell Auvil, Project Manager

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

AECOM	Project: **POV FVP**	
111 SW Columbia St. Ste. 1500	Project Number: **60519969**	**Report ID:**
Portland, OR 97201	Project Manager: **Nicky Moody**	**A0I0248 - 09 24 20 1115**

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
C1-MW-4 (A0I0248-01)				**Matrix: Water**		**Batch: 0090345**		
Surrogate: 4-Bromofluorobenzene (Surr)		*Recovery: 103 %*	*Limits: 80-120 %*		*1*	*09/12/20 16:35*	*EPA 8260D*	
C2-MW-9 (A0I0248-03)				**Matrix: Water**		**Batch: 0090345**		
Acetone	ND	10.0	20.0	ug/L	1	09/12/20 17:29	EPA 8260D	
Benzene	ND	0.100	0.200	ug/L	1	09/12/20 17:29	EPA 8260D	
Bromobenzene	ND	0.250	0.500	ug/L	1	09/12/20 17:29	EPA 8260D	
Bromochloromethane	ND	0.500	1.00	ug/L	1	09/12/20 17:29	EPA 8260D	
Bromodichloromethane	ND	0.500	1.00	ug/L	1	09/12/20 17:29	EPA 8260D	
Bromoform	ND	0.500	1.00	ug/L	1	09/12/20 17:29	EPA 8260D	
Bromomethane	ND	5.00	5.00	ug/L	1	09/12/20 17:29	EPA 8260D	
2-Butanone (MEK)	ND	5.00	10.0	ug/L	1	09/12/20 17:29	EPA 8260D	
n-Butylbenzene	ND	0.500	1.00	ug/L	1	09/12/20 17:29	EPA 8260D	
sec-Butylbenzene	ND	0.500	1.00	ug/L	1	09/12/20 17:29	EPA 8260D	
tert-Butylbenzene	ND	0.500	1.00	ug/L	1	09/12/20 17:29	EPA 8260D	
Carbon tetrachloride	ND	0.500	1.00	ug/L	1	09/12/20 17:29	EPA 8260D	
Chlorobenzene	ND	0.250	0.500	ug/L	1	09/12/20 17:29	EPA 8260D	
Chloroethane	ND	5.00	5.00	ug/L	1	09/12/20 17:29	EPA 8260D	
Chloroform	ND	0.500	1.00	ug/L	1	09/12/20 17:29	EPA 8260D	
Chloromethane	ND	2.50	5.00	ug/L	1	09/12/20 17:29	EPA 8260D	
2-Chlorotoluene	ND	0.500	1.00	ug/L	1	09/12/20 17:29	EPA 8260D	
4-Chlorotoluene	ND	0.500	1.00	ug/L	1	09/12/20 17:29	EPA 8260D	
Dibromochloromethane	ND	0.500	1.00	ug/L	1	09/12/20 17:29	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	ug/L	1	09/12/20 17:29	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	0.250	0.500	ug/L	1	09/12/20 17:29	EPA 8260D	
Dibromomethane	ND	0.500	1.00	ug/L	1	09/12/20 17:29	EPA 8260D	
1,2-Dichlorobenzene	ND	0.250	0.500	ug/L	1	09/12/20 17:29	EPA 8260D	
1,3-Dichlorobenzene	ND	0.250	0.500	ug/L	1	09/12/20 17:29	EPA 8260D	
1,4-Dichlorobenzene	ND	0.250	0.500	ug/L	1	09/12/20 17:29	EPA 8260D	
Dichlorodifluoromethane	ND	0.500	1.00	ug/L	1	09/12/20 17:29	EPA 8260D	
1,1-Dichloroethane	ND	0.200	0.400	ug/L	1	09/12/20 17:29	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	0.200	0.400	ug/L	1	09/12/20 17:29	EPA 8260D	
1,1-Dichloroethene	ND	0.200	0.400	ug/L	1	09/12/20 17:29	EPA 8260D	
cis-1,2-Dichloroethene	**0.810**	0.200	0.400	ug/L	1	09/12/20 17:29	EPA 8260D	
trans-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	09/12/20 17:29	EPA 8260D	

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Darrell Auvil, Project Manager

Apex Laboratories, LLC
6700 S.W. Sandburg Street
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503-718-2323
ORELAP ID: **OR100062**

AECOM	Project: **POV FVP**	
111 SW Columbia St. Ste. 1500	Project Number: **60519969**	**Report ID:**
Portland, OR 97201	Project Manager: **Nicky Moody**	**A0I0248 - 09 24 20 1115**

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
C2-MW-9 (A0I0248-03)				**Matrix: Water**		**Batch: 0090345**		
1,2-Dichloropropane	ND	0.250	0.500	ug/L	1	09/12/20 17:29	EPA 8260D	
1,3-Dichloropropane	ND	0.500	1.00	ug/L	1	09/12/20 17:29	EPA 8260D	
2,2-Dichloropropane	ND	0.500	1.00	ug/L	1	09/12/20 17:29	EPA 8260D	
1,1-Dichloropropene	ND	0.500	1.00	ug/L	1	09/12/20 17:29	EPA 8260D	
cis-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	09/12/20 17:29	EPA 8260D	
trans-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	09/12/20 17:29	EPA 8260D	
Ethylbenzene	ND	0.250	0.500	ug/L	1	09/12/20 17:29	EPA 8260D	
Hexachlorobutadiene	ND	2.50	5.00	ug/L	1	09/12/20 17:29	EPA 8260D	
2-Hexanone	ND	5.00	10.0	ug/L	1	09/12/20 17:29	EPA 8260D	
Isopropylbenzene	ND	0.500	1.00	ug/L	1	09/12/20 17:29	EPA 8260D	
4-Isopropyltoluene	ND	1.00	2.00	ug/L	1	09/12/20 17:29	EPA 8260D	
Methylene chloride	ND	5.00	10.0	ug/L	1	09/12/20 17:29	EPA 8260D	
4-Methyl-2-pentanone (MiBK)	ND	5.00	10.0	ug/L	1	09/12/20 17:29	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND	0.500	1.00	ug/L	1	09/12/20 17:29	EPA 8260D	
Naphthalene	ND	2.00	4.00	ug/L	1	09/12/20 17:29	EPA 8260D	
n-Propylbenzene	ND	0.250	0.500	ug/L	1	09/12/20 17:29	EPA 8260D	
Styrene	ND	0.500	1.00	ug/L	1	09/12/20 17:29	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	0.200	0.400	ug/L	1	09/12/20 17:29	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	0.250	0.500	ug/L	1	09/12/20 17:29	EPA 8260D	
Tetrachloroethene (PCE)	ND	0.200	0.400	ug/L	1	09/12/20 17:29	EPA 8260D	
Toluene	ND	0.500	1.00	ug/L	1	09/12/20 17:29	EPA 8260D	
1,2,3-Trichlorobenzene	ND	1.00	2.00	ug/L	1	09/12/20 17:29	EPA 8260D	
1,2,4-Trichlorobenzene	ND	1.00	2.00	ug/L	1	09/12/20 17:29	EPA 8260D	
1,1,1-Trichloroethane	ND	0.200	0.400	ug/L	1	09/12/20 17:29	EPA 8260D	
1,1,2-Trichloroethane	ND	0.250	0.500	ug/L	1	09/12/20 17:29	EPA 8260D	
Trichloroethene (TCE)	ND	0.200	0.400	ug/L	1	09/12/20 17:29	EPA 8260D	
Trichlorofluoromethane	ND	1.00	2.00	ug/L	1	09/12/20 17:29	EPA 8260D	
1,2,3-Trichloropropane	ND	0.500	1.00	ug/L	1	09/12/20 17:29	EPA 8260D	
1,2,4-Trimethylbenzene	ND	0.500	1.00	ug/L	1	09/12/20 17:29	EPA 8260D	
1,3,5-Trimethylbenzene	ND	0.500	1.00	ug/L	1	09/12/20 17:29	EPA 8260D	
Vinyl chloride	**0.400**	0.100	0.200	ug/L	1	09/12/20 17:29	EPA 8260D	
m,p-Xylene	ND	0.500	1.00	ug/L	1	09/12/20 17:29	EPA 8260D	
o-Xylene	ND	0.250	0.500	ug/L	1	09/12/20 17:29	EPA 8260D	

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

AECOM	Project: **POV FVP**	
111 SW Columbia St. Ste. 1500	Project Number: **60519969**	**Report ID:**
Portland, OR 97201	Project Manager: **Nicky Moody**	**A0I0248 - 09 24 20 1115**

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
C2-MW-9 (A0I0248-03)				**Matrix: Water**		**Batch: 0090345**		
Surrogate: 1,4-Difluorobenzene (Surr)			*Recovery: 106 %*	*Limits: 80-120 %*	*1*	*09/12/20 17:29*	*EPA 8260D*	
Toluene-d8 (Surr)			*101 %*	*80-120 %*	*1*	*09/12/20 17:29*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*103 %*	*80-120 %*	*1*	*09/12/20 17:29*	*EPA 8260D*	
C2-MW-11(R) (A0I0248-05)				**Matrix: Water**		**Batch: 0090345**		
Acetone	ND	10.0	20.0	ug/L	1	09/12/20 18:23	EPA 8260D	
Benzene	ND	0.100	0.200	ug/L	1	09/12/20 18:23	EPA 8260D	
Bromobenzene	ND	0.250	0.500	ug/L	1	09/12/20 18:23	EPA 8260D	
Bromochloromethane	ND	0.500	1.00	ug/L	1	09/12/20 18:23	EPA 8260D	
Bromodichloromethane	ND	0.500	1.00	ug/L	1	09/12/20 18:23	EPA 8260D	
Bromoform	ND	0.500	1.00	ug/L	1	09/12/20 18:23	EPA 8260D	
Bromomethane	ND	5.00	5.00	ug/L	1	09/12/20 18:23	EPA 8260D	
2-Butanone (MEK)	ND	5.00	10.0	ug/L	1	09/12/20 18:23	EPA 8260D	
n-Butylbenzene	ND	0.500	1.00	ug/L	1	09/12/20 18:23	EPA 8260D	
sec-Butylbenzene	ND	0.500	1.00	ug/L	1	09/12/20 18:23	EPA 8260D	
tert-Butylbenzene	ND	0.500	1.00	ug/L	1	09/12/20 18:23	EPA 8260D	
Carbon tetrachloride	ND	0.500	1.00	ug/L	1	09/12/20 18:23	EPA 8260D	
Chlorobenzene	ND	0.250	0.500	ug/L	1	09/12/20 18:23	EPA 8260D	
Chloroethane	ND	5.00	5.00	ug/L	1	09/12/20 18:23	EPA 8260D	
Chloroform	ND	0.500	1.00	ug/L	1	09/12/20 18:23	EPA 8260D	
Chloromethane	ND	2.50	5.00	ug/L	1	09/12/20 18:23	EPA 8260D	
2-Chlorotoluene	ND	0.500	1.00	ug/L	1	09/12/20 18:23	EPA 8260D	
4-Chlorotoluene	ND	0.500	1.00	ug/L	1	09/12/20 18:23	EPA 8260D	
Dibromochloromethane	ND	0.500	1.00	ug/L	1	09/12/20 18:23	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	ug/L	1	09/12/20 18:23	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	0.250	0.500	ug/L	1	09/12/20 18:23	EPA 8260D	
Dibromomethane	ND	0.500	1.00	ug/L	1	09/12/20 18:23	EPA 8260D	
1,2-Dichlorobenzene	ND	0.250	0.500	ug/L	1	09/12/20 18:23	EPA 8260D	
1,3-Dichlorobenzene	ND	0.250	0.500	ug/L	1	09/12/20 18:23	EPA 8260D	
1,4-Dichlorobenzene	ND	0.250	0.500	ug/L	1	09/12/20 18:23	EPA 8260D	
Dichlorodifluoromethane	ND	0.500	1.00	ug/L	1	09/12/20 18:23	EPA 8260D	
1,1-Dichloroethane	ND	0.200	0.400	ug/L	1	09/12/20 18:23	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	0.200	0.400	ug/L	1	09/12/20 18:23	EPA 8260D	
1,1-Dichloroethene	ND	0.200	0.400	ug/L	1	09/12/20 18:23	EPA 8260D	

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

6700 S.W. Sandburg Street
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503-718-2323
ORELAP ID: **OR100062**

AECOM	Project: **POV FVP**	
111 SW Columbia St. Ste. 1500	Project Number: **60519969**	**Report ID:**
Portland, OR 97201	Project Manager: **Nicky Moody**	**A0I0248 - 09 24 20 1115**

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
C2-MW-11(R) (A0I0248-05)				**Matrix: Water**		**Batch: 0090345**		
cis-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	09/12/20 18:23	EPA 8260D	
trans-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	09/12/20 18:23	EPA 8260D	
1,2-Dichloropropane	ND	0.250	0.500	ug/L	1	09/12/20 18:23	EPA 8260D	
1,3-Dichloropropane	ND	0.500	1.00	ug/L	1	09/12/20 18:23	EPA 8260D	
2,2-Dichloropropane	ND	0.500	1.00	ug/L	1	09/12/20 18:23	EPA 8260D	
1,1-Dichloropropene	ND	0.500	1.00	ug/L	1	09/12/20 18:23	EPA 8260D	
cis-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	09/12/20 18:23	EPA 8260D	
trans-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	09/12/20 18:23	EPA 8260D	
Ethylbenzene	ND	0.250	0.500	ug/L	1	09/12/20 18:23	EPA 8260D	
Hexachlorobutadiene	ND	2.50	5.00	ug/L	1	09/12/20 18:23	EPA 8260D	
2-Hexanone	ND	5.00	10.0	ug/L	1	09/12/20 18:23	EPA 8260D	
Isopropylbenzene	ND	0.500	1.00	ug/L	1	09/12/20 18:23	EPA 8260D	
4-Isopropyltoluene	ND	1.00	2.00	ug/L	1	09/12/20 18:23	EPA 8260D	
Methylene chloride	ND	5.00	10.0	ug/L	1	09/12/20 18:23	EPA 8260D	
4-Methyl-2-pentanone (MiBK)	ND	5.00	10.0	ug/L	1	09/12/20 18:23	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND	0.500	1.00	ug/L	1	09/12/20 18:23	EPA 8260D	
Naphthalene	ND	2.00	4.00	ug/L	1	09/12/20 18:23	EPA 8260D	
n-Propylbenzene	ND	0.250	0.500	ug/L	1	09/12/20 18:23	EPA 8260D	
Styrene	ND	0.500	1.00	ug/L	1	09/12/20 18:23	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	0.200	0.400	ug/L	1	09/12/20 18:23	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	0.250	0.500	ug/L	1	09/12/20 18:23	EPA 8260D	
Tetrachloroethene (PCE)	ND	0.200	0.400	ug/L	1	09/12/20 18:23	EPA 8260D	
Toluene	ND	0.500	1.00	ug/L	1	09/12/20 18:23	EPA 8260D	
1,2,3-Trichlorobenzene	ND	1.00	2.00	ug/L	1	09/12/20 18:23	EPA 8260D	
1,2,4-Trichlorobenzene	ND	1.00	2.00	ug/L	1	09/12/20 18:23	EPA 8260D	
1,1,1-Trichloroethane	ND	0.200	0.400	ug/L	1	09/12/20 18:23	EPA 8260D	
1,1,2-Trichloroethane	ND	0.250	0.500	ug/L	1	09/12/20 18:23	EPA 8260D	
Trichloroethene (TCE)	ND	0.200	0.400	ug/L	1	09/12/20 18:23	EPA 8260D	
Trichlorofluoromethane	ND	1.00	2.00	ug/L	1	09/12/20 18:23	EPA 8260D	
1,2,3-Trichloropropane	ND	0.500	1.00	ug/L	1	09/12/20 18:23	EPA 8260D	
1,2,4-Trimethylbenzene	ND	0.500	1.00	ug/L	1	09/12/20 18:23	EPA 8260D	
1,3,5-Trimethylbenzene	ND	0.500	1.00	ug/L	1	09/12/20 18:23	EPA 8260D	
Vinyl chloride	**0.610**	0.100	0.200	ug/L	1	09/12/20 18:23	EPA 8260D	

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

AECOM	Project: **POV FVP**	
111 SW Columbia St. Ste. 1500	Project Number: **60519969**	**Report ID:**
Portland, OR 97201	Project Manager: **Nicky Moody**	**A0I0248 - 09 24 20 1115**

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
C2-MW-11(R) (A0I0248-05)				**Matrix: Water**		**Batch: 0090345**		
m,p-Xylene	ND	0.500	1.00	ug/L	1	09/12/20 18:23	EPA 8260D	
o-Xylene	ND	0.250	0.500	ug/L	1	09/12/20 18:23	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*106 %*	*Limits: 80-120 %*	*1*	*09/12/20 18:23*	*EPA 8260D*	
Toluene-d8 (Surr)			*100 %*	*80-120 %*	*1*	*09/12/20 18:23*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*103 %*	*80-120 %*	*1*	*09/12/20 18:23*	*EPA 8260D*	
C2-MW-12B (A0I0248-06)				**Matrix: Water**		**Batch: 0090345**		
Acetone	ND	10.0	20.0	ug/L	1	09/12/20 18:50	EPA 8260D	
Benzene	ND	0.100	0.200	ug/L	1	09/12/20 18:50	EPA 8260D	
Bromobenzene	ND	0.250	0.500	ug/L	1	09/12/20 18:50	EPA 8260D	
Bromochloromethane	ND	0.500	1.00	ug/L	1	09/12/20 18:50	EPA 8260D	
Bromodichloromethane	ND	0.500	1.00	ug/L	1	09/12/20 18:50	EPA 8260D	
Bromoform	ND	0.500	1.00	ug/L	1	09/12/20 18:50	EPA 8260D	
Bromomethane	ND	5.00	5.00	ug/L	1	09/12/20 18:50	EPA 8260D	
2-Butanone (MEK)	ND	5.00	10.0	ug/L	1	09/12/20 18:50	EPA 8260D	
n-Butylbenzene	ND	0.500	1.00	ug/L	1	09/12/20 18:50	EPA 8260D	
sec-Butylbenzene	ND	0.500	1.00	ug/L	1	09/12/20 18:50	EPA 8260D	
tert-Butylbenzene	ND	0.500	1.00	ug/L	1	09/12/20 18:50	EPA 8260D	
Carbon tetrachloride	ND	0.500	1.00	ug/L	1	09/12/20 18:50	EPA 8260D	
Chlorobenzene	ND	0.250	0.500	ug/L	1	09/12/20 18:50	EPA 8260D	
Chloroethane	ND	5.00	5.00	ug/L	1	09/12/20 18:50	EPA 8260D	
Chloroform	ND	0.500	1.00	ug/L	1	09/12/20 18:50	EPA 8260D	
Chloromethane	ND	2.50	5.00	ug/L	1	09/12/20 18:50	EPA 8260D	
2-Chlorotoluene	ND	0.500	1.00	ug/L	1	09/12/20 18:50	EPA 8260D	
4-Chlorotoluene	ND	0.500	1.00	ug/L	1	09/12/20 18:50	EPA 8260D	
Dibromochloromethane	ND	0.500	1.00	ug/L	1	09/12/20 18:50	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	ug/L	1	09/12/20 18:50	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	0.250	0.500	ug/L	1	09/12/20 18:50	EPA 8260D	
Dibromomethane	ND	0.500	1.00	ug/L	1	09/12/20 18:50	EPA 8260D	
1,2-Dichlorobenzene	ND	0.250	0.500	ug/L	1	09/12/20 18:50	EPA 8260D	
1,3-Dichlorobenzene	ND	0.250	0.500	ug/L	1	09/12/20 18:50	EPA 8260D	
1,4-Dichlorobenzene	ND	0.250	0.500	ug/L	1	09/12/20 18:50	EPA 8260D	
Dichlorodifluoromethane	ND	0.500	1.00	ug/L	1	09/12/20 18:50	EPA 8260D	
1,1-Dichloroethane	ND	0.200	0.400	ug/L	1	09/12/20 18:50	EPA 8260D	

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Darrell Auvil, Project Manager

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

AECOM	Project: **POV FVP**	
111 SW Columbia St. Ste. 1500	Project Number: **60519969**	**Report ID:**
Portland, OR 97201	Project Manager: **Nicky Moody**	**A0I0248 - 09 24 20 1115**

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
C2-MW-12B (A0I0248-06)				**Matrix: Water**		**Batch: 0090345**		
1,2-Dichloroethane (EDC)	ND	0.200	0.400	ug/L	1	09/12/20 18:50	EPA 8260D	
1,1-Dichloroethene	ND	0.200	0.400	ug/L	1	09/12/20 18:50	EPA 8260D	
cis-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	09/12/20 18:50	EPA 8260D	
trans-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	09/12/20 18:50	EPA 8260D	
1,2-Dichloropropane	ND	0.250	0.500	ug/L	1	09/12/20 18:50	EPA 8260D	
1,3-Dichloropropane	ND	0.500	1.00	ug/L	1	09/12/20 18:50	EPA 8260D	
2,2-Dichloropropane	ND	0.500	1.00	ug/L	1	09/12/20 18:50	EPA 8260D	
1,1-Dichloropropene	ND	0.500	1.00	ug/L	1	09/12/20 18:50	EPA 8260D	
cis-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	09/12/20 18:50	EPA 8260D	
trans-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	09/12/20 18:50	EPA 8260D	
Ethylbenzene	ND	0.250	0.500	ug/L	1	09/12/20 18:50	EPA 8260D	
Hexachlorobutadiene	ND	2.50	5.00	ug/L	1	09/12/20 18:50	EPA 8260D	
2-Hexanone	ND	5.00	10.0	ug/L	1	09/12/20 18:50	EPA 8260D	
Isopropylbenzene	ND	0.500	1.00	ug/L	1	09/12/20 18:50	EPA 8260D	
4-Isopropyltoluene	ND	1.00	2.00	ug/L	1	09/12/20 18:50	EPA 8260D	
Methylene chloride	ND	5.00	10.0	ug/L	1	09/12/20 18:50	EPA 8260D	
4-Methyl-2-pentanone (MiBK)	ND	5.00	10.0	ug/L	1	09/12/20 18:50	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND	0.500	1.00	ug/L	1	09/12/20 18:50	EPA 8260D	
Naphthalene	ND	2.00	4.00	ug/L	1	09/12/20 18:50	EPA 8260D	
n-Propylbenzene	ND	0.250	0.500	ug/L	1	09/12/20 18:50	EPA 8260D	
Styrene	ND	0.500	1.00	ug/L	1	09/12/20 18:50	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	0.200	0.400	ug/L	1	09/12/20 18:50	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	0.250	0.500	ug/L	1	09/12/20 18:50	EPA 8260D	
Tetrachloroethene (PCE)	ND	0.200	0.400	ug/L	1	09/12/20 18:50	EPA 8260D	
Toluene	ND	0.500	1.00	ug/L	1	09/12/20 18:50	EPA 8260D	
1,2,3-Trichlorobenzene	ND	1.00	2.00	ug/L	1	09/12/20 18:50	EPA 8260D	
1,2,4-Trichlorobenzene	ND	1.00	2.00	ug/L	1	09/12/20 18:50	EPA 8260D	
1,1,1-Trichloroethane	ND	0.200	0.400	ug/L	1	09/12/20 18:50	EPA 8260D	
1,1,2-Trichloroethane	ND	0.250	0.500	ug/L	1	09/12/20 18:50	EPA 8260D	
Trichloroethene (TCE)	**0.250**	0.200	0.400	ug/L	1	09/12/20 18:50	EPA 8260D	**J**
Trichlorofluoromethane	ND	1.00	2.00	ug/L	1	09/12/20 18:50	EPA 8260D	
1,2,3-Trichloropropane	ND	0.500	1.00	ug/L	1	09/12/20 18:50	EPA 8260D	
1,2,4-Trimethylbenzene	ND	0.500	1.00	ug/L	1	09/12/20 18:50	EPA 8260D	

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Darrell Auvil, Project Manager

Apex Laboratories, LLC
6700 S.W. Sandburg Street
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503-718-2323
ORELAP ID: **OR100062**

AECOM	Project: **POV FVP**	
111 SW Columbia St. Ste. 1500	Project Number: **60519969**	**Report ID:**
Portland, OR 97201	Project Manager: **Nicky Moody**	**A0I0248 - 09 24 20 1115**

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
C2-MW-12B (A0I0248-06)				**Matrix: Water**		**Batch: 0090345**		
1,3,5-Trimethylbenzene	ND	0.500	1.00	ug/L	1	09/12/20 18:50	EPA 8260D	
Vinyl chloride	ND	0.100	0.200	ug/L	1	09/12/20 18:50	EPA 8260D	
m,p-Xylene	ND	0.500	1.00	ug/L	1	09/12/20 18:50	EPA 8260D	
o-Xylene	ND	0.250	0.500	ug/L	1	09/12/20 18:50	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*107 %*	*Limits: 80-120 %*	*1*	*09/12/20 18:50*	*EPA 8260D*	
Toluene-d8 (Surr)			*101 %*	*80-120 %*	*1*	*09/12/20 18:50*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*105 %*	*80-120 %*	*1*	*09/12/20 18:50*	*EPA 8260D*	
C2-MW-9-D (A0I0248-07)				**Matrix: Water**		**Batch: 0090345**		
Acetone	ND	10.0	20.0	ug/L	1	09/12/20 19:17	EPA 8260D	
Benzene	ND	0.100	0.200	ug/L	1	09/12/20 19:17	EPA 8260D	
Bromobenzene	ND	0.250	0.500	ug/L	1	09/12/20 19:17	EPA 8260D	
Bromochloromethane	ND	0.500	1.00	ug/L	1	09/12/20 19:17	EPA 8260D	
Bromodichloromethane	ND	0.500	1.00	ug/L	1	09/12/20 19:17	EPA 8260D	
Bromoform	ND	0.500	1.00	ug/L	1	09/12/20 19:17	EPA 8260D	
Bromomethane	ND	5.00	5.00	ug/L	1	09/12/20 19:17	EPA 8260D	
2-Butanone (MEK)	ND	5.00	10.0	ug/L	1	09/12/20 19:17	EPA 8260D	
n-Butylbenzene	ND	0.500	1.00	ug/L	1	09/12/20 19:17	EPA 8260D	
sec-Butylbenzene	ND	0.500	1.00	ug/L	1	09/12/20 19:17	EPA 8260D	
tert-Butylbenzene	ND	0.500	1.00	ug/L	1	09/12/20 19:17	EPA 8260D	
Carbon tetrachloride	ND	0.500	1.00	ug/L	1	09/12/20 19:17	EPA 8260D	
Chlorobenzene	ND	0.250	0.500	ug/L	1	09/12/20 19:17	EPA 8260D	
Chloroethane	ND	5.00	5.00	ug/L	1	09/12/20 19:17	EPA 8260D	
Chloroform	ND	0.500	1.00	ug/L	1	09/12/20 19:17	EPA 8260D	
Chloromethane	ND	2.50	5.00	ug/L	1	09/12/20 19:17	EPA 8260D	
2-Chlorotoluene	ND	0.500	1.00	ug/L	1	09/12/20 19:17	EPA 8260D	
4-Chlorotoluene	ND	0.500	1.00	ug/L	1	09/12/20 19:17	EPA 8260D	
Dibromochloromethane	ND	0.500	1.00	ug/L	1	09/12/20 19:17	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	ug/L	1	09/12/20 19:17	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	0.250	0.500	ug/L	1	09/12/20 19:17	EPA 8260D	
Dibromomethane	ND	0.500	1.00	ug/L	1	09/12/20 19:17	EPA 8260D	
1,2-Dichlorobenzene	ND	0.250	0.500	ug/L	1	09/12/20 19:17	EPA 8260D	
1,3-Dichlorobenzene	ND	0.250	0.500	ug/L	1	09/12/20 19:17	EPA 8260D	
1,4-Dichlorobenzene	ND	0.250	0.500	ug/L	1	09/12/20 19:17	EPA 8260D	

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Darrell Auvil, Project Manager

Apex Laboratories, LLC
6700 S.W. Sandburg Street
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503-718-2323
ORELAP ID: **OR100062**

AECOM	Project: **POV FVP**	
111 SW Columbia St. Ste. 1500	Project Number: **60519969**	**Report ID:**
Portland, OR 97201	Project Manager: **Nicky Moody**	**A0I0248 - 09 24 20 1115**

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
C2-MW-9-D (A0I0248-07)				**Matrix: Water**		**Batch: 0090345**		
Dichlorodifluoromethane	ND	0.500	1.00	ug/L	1	09/12/20 19:17	EPA 8260D	
1,1-Dichloroethane	ND	0.200	0.400	ug/L	1	09/12/20 19:17	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	0.200	0.400	ug/L	1	09/12/20 19:17	EPA 8260D	
1,1-Dichloroethene	ND	0.200	0.400	ug/L	1	09/12/20 19:17	EPA 8260D	
cis-1,2-Dichloroethene	**0.760**	0.200	0.400	ug/L	1	09/12/20 19:17	EPA 8260D	
trans-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	09/12/20 19:17	EPA 8260D	
1,2-Dichloropropane	ND	0.250	0.500	ug/L	1	09/12/20 19:17	EPA 8260D	
1,3-Dichloropropane	ND	0.500	1.00	ug/L	1	09/12/20 19:17	EPA 8260D	
2,2-Dichloropropane	ND	0.500	1.00	ug/L	1	09/12/20 19:17	EPA 8260D	
1,1-Dichloropropene	ND	0.500	1.00	ug/L	1	09/12/20 19:17	EPA 8260D	
cis-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	09/12/20 19:17	EPA 8260D	
trans-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	09/12/20 19:17	EPA 8260D	
Ethylbenzene	ND	0.250	0.500	ug/L	1	09/12/20 19:17	EPA 8260D	
Hexachlorobutadiene	ND	2.50	5.00	ug/L	1	09/12/20 19:17	EPA 8260D	
2-Hexanone	ND	5.00	10.0	ug/L	1	09/12/20 19:17	EPA 8260D	
Isopropylbenzene	ND	0.500	1.00	ug/L	1	09/12/20 19:17	EPA 8260D	
4-Isopropyltoluene	ND	1.00	2.00	ug/L	1	09/12/20 19:17	EPA 8260D	
Methylene chloride	ND	5.00	10.0	ug/L	1	09/12/20 19:17	EPA 8260D	
4-Methyl-2-pentanone (MiBK)	ND	5.00	10.0	ug/L	1	09/12/20 19:17	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND	0.500	1.00	ug/L	1	09/12/20 19:17	EPA 8260D	
Naphthalene	ND	2.00	4.00	ug/L	1	09/12/20 19:17	EPA 8260D	
n-Propylbenzene	ND	0.250	0.500	ug/L	1	09/12/20 19:17	EPA 8260D	
Styrene	ND	0.500	1.00	ug/L	1	09/12/20 19:17	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	0.200	0.400	ug/L	1	09/12/20 19:17	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	0.250	0.500	ug/L	1	09/12/20 19:17	EPA 8260D	
Tetrachloroethene (PCE)	ND	0.200	0.400	ug/L	1	09/12/20 19:17	EPA 8260D	
Toluene	ND	0.500	1.00	ug/L	1	09/12/20 19:17	EPA 8260D	
1,2,3-Trichlorobenzene	ND	1.00	2.00	ug/L	1	09/12/20 19:17	EPA 8260D	
1,2,4-Trichlorobenzene	ND	1.00	2.00	ug/L	1	09/12/20 19:17	EPA 8260D	
1,1,1-Trichloroethane	ND	0.200	0.400	ug/L	1	09/12/20 19:17	EPA 8260D	
1,1,2-Trichloroethane	ND	0.250	0.500	ug/L	1	09/12/20 19:17	EPA 8260D	
Trichloroethene (TCE)	ND	0.200	0.400	ug/L	1	09/12/20 19:17	EPA 8260D	
Trichlorofluoromethane	ND	1.00	2.00	ug/L	1	09/12/20 19:17	EPA 8260D	

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Darrell Auvil, Project Manager

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

AECOM	Project: **POV FVP**	
111 SW Columbia St. Ste. 1500	Project Number: **60519969**	**Report ID:**
Portland, OR 97201	Project Manager: **Nicky Moody**	**A0I0248 - 09 24 20 1115**

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
C2-MW-9-D (A0I0248-07)				**Matrix: Water**		**Batch: 0090345**		
1,2,3-Trichloropropane	ND	0.500	1.00	ug/L	1	09/12/20 19:17	EPA 8260D	
1,2,4-Trimethylbenzene	ND	0.500	1.00	ug/L	1	09/12/20 19:17	EPA 8260D	
1,3,5-Trimethylbenzene	ND	0.500	1.00	ug/L	1	09/12/20 19:17	EPA 8260D	
Vinyl chloride	**0.320**	0.100	0.200	ug/L	1	09/12/20 19:17	EPA 8260D	
m,p-Xylene	ND	0.500	1.00	ug/L	1	09/12/20 19:17	EPA 8260D	
o-Xylene	ND	0.250	0.500	ug/L	1	09/12/20 19:17	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*106 %*	*Limits: 80-120 %*	*1*	*09/12/20 19:17*	*EPA 8260D*	
Toluene-d8 (Surr)			*101 %*	*80-120 %*	*1*	*09/12/20 19:17*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*103 %*	*80-120 %*	*1*	*09/12/20 19:17*	*EPA 8260D*	
Trip Blank (A0I0248-08)				**Matrix: Water**		**Batch: 0090345**		
Acetone	ND	10.0	20.0	ug/L	1	09/12/20 16:08	EPA 8260D	
Benzene	ND	0.100	0.200	ug/L	1	09/12/20 16:08	EPA 8260D	
Bromobenzene	ND	0.250	0.500	ug/L	1	09/12/20 16:08	EPA 8260D	
Bromochloromethane	ND	0.500	1.00	ug/L	1	09/12/20 16:08	EPA 8260D	
Bromodichloromethane	ND	0.500	1.00	ug/L	1	09/12/20 16:08	EPA 8260D	
Bromoform	ND	0.500	1.00	ug/L	1	09/12/20 16:08	EPA 8260D	
Bromomethane	ND	5.00	5.00	ug/L	1	09/12/20 16:08	EPA 8260D	
2-Butanone (MEK)	ND	5.00	10.0	ug/L	1	09/12/20 16:08	EPA 8260D	
n-Butylbenzene	ND	0.500	1.00	ug/L	1	09/12/20 16:08	EPA 8260D	
sec-Butylbenzene	ND	0.500	1.00	ug/L	1	09/12/20 16:08	EPA 8260D	
tert-Butylbenzene	ND	0.500	1.00	ug/L	1	09/12/20 16:08	EPA 8260D	
Carbon tetrachloride	ND	0.500	1.00	ug/L	1	09/12/20 16:08	EPA 8260D	
Chlorobenzene	ND	0.250	0.500	ug/L	1	09/12/20 16:08	EPA 8260D	
Chloroethane	ND	5.00	5.00	ug/L	1	09/12/20 16:08	EPA 8260D	
Chloroform	ND	0.500	1.00	ug/L	1	09/12/20 16:08	EPA 8260D	
Chloromethane	ND	2.50	5.00	ug/L	1	09/12/20 16:08	EPA 8260D	
2-Chlorotoluene	ND	0.500	1.00	ug/L	1	09/12/20 16:08	EPA 8260D	
4-Chlorotoluene	ND	0.500	1.00	ug/L	1	09/12/20 16:08	EPA 8260D	
Dibromochloromethane	ND	0.500	1.00	ug/L	1	09/12/20 16:08	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	ug/L	1	09/12/20 16:08	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	0.250	0.500	ug/L	1	09/12/20 16:08	EPA 8260D	
Dibromomethane	ND	0.500	1.00	ug/L	1	09/12/20 16:08	EPA 8260D	
1,2-Dichlorobenzene	ND	0.250	0.500	ug/L	1	09/12/20 16:08	EPA 8260D	

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

AECOM	Project: **POV FVP**	
111 SW Columbia St. Ste. 1500	Project Number: **60519969**	**Report ID:**
Portland, OR 97201	Project Manager: **Nicky Moody**	**A0I0248 - 09 24 20 1115**

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
Trip Blank (A0I0248-08)				**Matrix: Water**		**Batch: 0090345**		
1,3-Dichlorobenzene	ND	0.250	0.500	ug/L	1	09/12/20 16:08	EPA 8260D	
1,4-Dichlorobenzene	ND	0.250	0.500	ug/L	1	09/12/20 16:08	EPA 8260D	
Dichlorodifluoromethane	ND	0.500	1.00	ug/L	1	09/12/20 16:08	EPA 8260D	
1,1-Dichloroethane	ND	0.200	0.400	ug/L	1	09/12/20 16:08	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	0.200	0.400	ug/L	1	09/12/20 16:08	EPA 8260D	
1,1-Dichloroethene	ND	0.200	0.400	ug/L	1	09/12/20 16:08	EPA 8260D	
cis-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	09/12/20 16:08	EPA 8260D	
trans-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	09/12/20 16:08	EPA 8260D	
1,2-Dichloropropane	ND	0.250	0.500	ug/L	1	09/12/20 16:08	EPA 8260D	
1,3-Dichloropropane	ND	0.500	1.00	ug/L	1	09/12/20 16:08	EPA 8260D	
2,2-Dichloropropane	ND	0.500	1.00	ug/L	1	09/12/20 16:08	EPA 8260D	
1,1-Dichloropropene	ND	0.500	1.00	ug/L	1	09/12/20 16:08	EPA 8260D	
cis-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	09/12/20 16:08	EPA 8260D	
trans-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	09/12/20 16:08	EPA 8260D	
Ethylbenzene	ND	0.250	0.500	ug/L	1	09/12/20 16:08	EPA 8260D	
Hexachlorobutadiene	ND	2.50	5.00	ug/L	1	09/12/20 16:08	EPA 8260D	
2-Hexanone	ND	5.00	10.0	ug/L	1	09/12/20 16:08	EPA 8260D	
Isopropylbenzene	ND	0.500	1.00	ug/L	1	09/12/20 16:08	EPA 8260D	
4-Isopropyltoluene	ND	1.00	2.00	ug/L	1	09/12/20 16:08	EPA 8260D	
Methylene chloride	ND	5.00	10.0	ug/L	1	09/12/20 16:08	EPA 8260D	
4-Methyl-2-pentanone (MiBK)	ND	5.00	10.0	ug/L	1	09/12/20 16:08	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND	0.500	1.00	ug/L	1	09/12/20 16:08	EPA 8260D	
Naphthalene	ND	2.00	4.00	ug/L	1	09/12/20 16:08	EPA 8260D	
n-Propylbenzene	ND	0.250	0.500	ug/L	1	09/12/20 16:08	EPA 8260D	
Styrene	ND	0.500	1.00	ug/L	1	09/12/20 16:08	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	0.200	0.400	ug/L	1	09/12/20 16:08	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	0.250	0.500	ug/L	1	09/12/20 16:08	EPA 8260D	
Tetrachloroethene (PCE)	ND	0.200	0.400	ug/L	1	09/12/20 16:08	EPA 8260D	
Toluene	ND	0.500	1.00	ug/L	1	09/12/20 16:08	EPA 8260D	
1,2,3-Trichlorobenzene	ND	1.00	2.00	ug/L	1	09/12/20 16:08	EPA 8260D	
1,2,4-Trichlorobenzene	ND	1.00	2.00	ug/L	1	09/12/20 16:08	EPA 8260D	
1,1,1-Trichloroethane	ND	0.200	0.400	ug/L	1	09/12/20 16:08	EPA 8260D	
1,1,2-Trichloroethane	ND	0.250	0.500	ug/L	1	09/12/20 16:08	EPA 8260D	

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

AECOM	Project: **POV FVP**	
111 SW Columbia St. Ste. 1500	Project Number: **60519969**	**Report ID:**
Portland, OR 97201	Project Manager: **Nicky Moody**	**A0I0248 - 09 24 20 1115**

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
Trip Blank (A0I0248-08)				**Matrix: Water**		**Batch: 0090345**		
Trichloroethene (TCE)	ND	0.200	0.400	ug/L	1	09/12/20 16:08	EPA 8260D	
Trichlorofluoromethane	ND	1.00	2.00	ug/L	1	09/12/20 16:08	EPA 8260D	
1,2,3-Trichloropropane	ND	0.500	1.00	ug/L	1	09/12/20 16:08	EPA 8260D	
1,2,4-Trimethylbenzene	ND	0.500	1.00	ug/L	1	09/12/20 16:08	EPA 8260D	
1,3,5-Trimethylbenzene	ND	0.500	1.00	ug/L	1	09/12/20 16:08	EPA 8260D	
Vinyl chloride	ND	0.100	0.200	ug/L	1	09/12/20 16:08	EPA 8260D	
m,p-Xylene	ND	0.500	1.00	ug/L	1	09/12/20 16:08	EPA 8260D	
o-Xylene	ND	0.250	0.500	ug/L	1	09/12/20 16:08	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*108 %*	*Limits:* *80-120 %*	*1*	*09/12/20 16:08*	*EPA 8260D*	
Toluene-d8 (Surr)			*102 %*	*80-120 %*	*1*	*09/12/20 16:08*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*103 %*	*80-120 %*	*1*	*09/12/20 16:08*	*EPA 8260D*	

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

6700 S.W. Sandburg Street
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ORELAP ID: **OR100062**

AECOM	Project: **POV FVP**	
111 SW Columbia St. Ste. 1500	Project Number: **60519969**	**Report ID:**
Portland, OR 97201	Project Manager: **Nicky Moody**	**A0I0248 - 09 24 20 1115**

QUALITY CONTROL (QC) SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0090432 - EPA 3510C (Fuels/Acid Ext.)									**Water**			
Blank (0090432-BLK1)			Prepared: 09/15/20 12:46		Analyzed: 09/15/20 20:28							
NWTPH-Dx												
Diesel	ND	0.0909	0.182	mg/L	1	---	---	---	---	---	---	
Oil	ND	0.182	0.364	mg/L	1	---	---	---	---	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 87 %*		*Limits: 50-150 %*		*Dilution: 1x*					
LCS (0090432-BS1)			Prepared: 09/15/20 12:46		Analyzed: 09/15/20 20:48							
NWTPH-Dx												
Diesel	1.01	0.100	0.200	mg/L	1	1.25	---	81	59-115%	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 88 %*		*Limits: 50-150 %*		*Dilution: 1x*					
LCS Dup (0090432-BSD1)			Prepared: 09/15/20 12:46		Analyzed: 09/15/20 21:08							**Q-19**
NWTPH-Dx												
Diesel	1.09	0.100	0.200	mg/L	1	1.25	---	87	59-115%	7	30%	
Surr: o-Terphenyl (Surr)			*Recovery: 87 %*		*Limits: 50-150 %*		*Dilution: 1x*					

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ORELAP ID: **OR100062**

AECOM	Project: **POV FVP**	
111 SW Columbia St. Ste. 1500	Project Number: **60519969**	**Report ID:**
Portland, OR 97201	Project Manager: **Nicky Moody**	**A0I0248 - 09 24 20 1115**

QUALITY CONTROL (QC) SAMPLE RESULTS

Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0090345 - EPA 5030B									Water			
Blank (0090345-BLK1)			Prepared: 09/12/20 08:00		Analyzed: 09/12/20 10:11							
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	---	---	---	---	---	---	
Surr: 4-Bromofluorobenzene (Sur)			*Recovery: 98 %*		*Limits: 50-150 %*				*Dilution: 1x*			
1,4-Difluorobenzene (Sur)			*106 %*		*50-150 %*				*"*			
LCS (0090345-BS2)			Prepared: 09/12/20 08:00		Analyzed: 09/12/20 09:44							
NWTPH-Gx (MS)												
Gasoline Range Organics	0.535	0.0500	0.100	mg/L	1	0.500	---	107	80-120%	---	---	
Surr: 4-Bromofluorobenzene (Sur)			*Recovery: 98 %*		*Limits: 50-150 %*				*Dilution: 1x*			
1,4-Difluorobenzene (Sur)			*96 %*		*50-150 %*				*"*			
Duplicate (0090345-DUP1)			Prepared: 09/12/20 10:10		Analyzed: 09/12/20 19:44							
QC Source Sample: C2-MW-9-D (A0I0248-07)												
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	---	ND	---	---	---	30%	
Surr: 4-Bromofluorobenzene (Sur)			*Recovery: 100 %*		*Limits: 50-150 %*				*Dilution: 1x*			
1,4-Difluorobenzene (Sur)			*107 %*		*50-150 %*				*"*			

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Darrell Auvil, Project Manager

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

AECOM	Project: **POV FVP**	
111 SW Columbia St. Ste. 1500	Project Number: **60519969**	**Report ID:**
Portland, OR 97201	Project Manager: **Nicky Moody**	**A0I0248 - 09 24 20 1115**

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0090345 - EPA 5030B							**Water**					
Blank (0090345-BLK1)			Prepared: 09/12/20 08:00 Analyzed: 09/12/20 10:11									
EPA 8260D												
Acetone	ND	10.0	20.0	ug/L	1	---	---	---	---	---	---	
Acrylonitrile	ND	1.00	2.00	ug/L	1	---	---	---	---	---	---	
Benzene	ND	0.100	0.200	ug/L	1	---	---	---	---	---	---	
Bromobenzene	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
Bromochloromethane	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Bromodichloromethane	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Bromoform	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Bromomethane	ND	5.00	5.00	ug/L	1	---	---	---	---	---	---	
2-Butanone (MEK)	ND	5.00	10.0	ug/L	1	---	---	---	---	---	---	
n-Butylbenzene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
sec-Butylbenzene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
tert-Butylbenzene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Carbon disulfide	ND	5.00	10.0	ug/L	1	---	---	---	---	---	---	
Carbon tetrachloride	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Chlorobenzene	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
Chloroethane	ND	5.00	5.00	ug/L	1	---	---	---	---	---	---	
Chloroform	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Chloromethane	ND	2.50	5.00	ug/L	1	---	---	---	---	---	---	
2-Chlorotoluene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
4-Chlorotoluene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Dibromochloromethane	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	ug/L	1	---	---	---	---	---	---	
1,2-Dibromoethane (EDB)	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
Dibromomethane	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
Dichlorodifluoromethane	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
1,1-Dichloroethane	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
1,2-Dichloroethane (EDC)	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
1,1-Dichloroethene	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
cis-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
trans-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	

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Darrell Auvil, Project Manager

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

AECOM	Project: **POV FVP**	
111 SW Columbia St. Ste. 1500	Project Number: **60519969**	**Report ID:**
Portland, OR 97201	Project Manager: **Nicky Moody**	**A0I0248 - 09 24 20 1115**

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0090345 - EPA 5030B							**Water**					
Blank (0090345-BLK1)			Prepared: 09/12/20 08:00		Analyzed: 09/12/20 10:11							
1,2-Dichloropropane	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
1,3-Dichloropropane	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
2,2-Dichloropropane	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
1,1-Dichloropropene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
cis-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
trans-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Ethylbenzene	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
Hexachlorobutadiene	ND	2.50	5.00	ug/L	1	---	---	---	---	---	---	
2-Hexanone	ND	5.00	10.0	ug/L	1	---	---	---	---	---	---	
Isopropylbenzene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
4-Isopropyltoluene	ND	1.00	2.00	ug/L	1	---	---	---	---	---	---	
Methylene chloride	ND	5.00	10.0	ug/L	1	---	---	---	---	---	---	
4-Methyl-2-pentanone (MiBK)	ND	5.00	10.0	ug/L	1	---	---	---	---	---	---	
Methyl tert-butyl ether (MTBE)	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Naphthalene	ND	2.00	4.00	ug/L	1	---	---	---	---	---	---	
n-Propylbenzene	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
Styrene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
1,1,1,2-Tetrachloroethane	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
1,1,2,2-Tetrachloroethane	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
Tetrachloroethene (PCE)	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
Toluene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
1,2,3-Trichlorobenzene	ND	1.00	2.00	ug/L	1	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	1.00	2.00	ug/L	1	---	---	---	---	---	---	
1,1,1-Trichloroethane	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
1,1,2-Trichloroethane	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
Trichloroethene (TCE)	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
Trichlorofluoromethane	ND	1.00	2.00	ug/L	1	---	---	---	---	---	---	
1,2,3-Trichloropropane	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
1,2,4-Trimethylbenzene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
1,3,5-Trimethylbenzene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Vinyl chloride	ND	0.100	0.200	ug/L	1	---	---	---	---	---	---	
m,p-Xylene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
o-Xylene	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	

Surr: 1,4-Difluorobenzene (Surr) *Recovery: 105 %* *Limits: 80-120 %* *Dilution: 1x*

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Darrell Auvil, Project Manager

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ORELAP ID: **OR100062**

AECOM	Project: **POV FVP**	
111 SW Columbia St. Ste. 1500	Project Number: **60519969**	**Report ID:**
Portland, OR 97201	Project Manager: **Nicky Moody**	**A0I0248 - 09 24 20 1115**

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0090345 - EPA 5030B												**Water**
Blank (0090345-BLK1)					Prepared: 09/12/20 08:00 Analyzed: 09/12/20 10:11							
Surr: Toluene-d8 (Surr)			*Recovery: 102 %*	*Limits: 80-120 %*				*Dilution: 1x*				
4-Bromofluorobenzene (Surr)			*103 %*	*80-120 %*				*"*				
LCS (0090345-BS1)					Prepared: 09/12/20 08:00 Analyzed: 09/12/20 09:17							
EPA 8260D												
Acetone	35.4	10.0	20.0	ug/L	1	40.0	---	88	80-120%	---	---	
Acrylonitrile	19.0	1.00	2.00	ug/L	1	20.0	---	95	80-120%	---	---	
Benzene	21.0	0.100	0.200	ug/L	1	20.0	---	105	80-120%	---	---	
Bromobenzene	20.2	0.250	0.500	ug/L	1	20.0	---	101	80-120%	---	---	
Bromochloromethane	19.9	0.500	1.00	ug/L	1	20.0	---	99	80-120%	---	---	
Bromodichloromethane	21.2	0.500	1.00	ug/L	1	20.0	---	106	80-120%	---	---	
Bromoform	19.6	0.500	1.00	ug/L	1	20.0	---	98	80-120%	---	---	
Bromomethane	21.6	5.00	5.00	ug/L	1	20.0	---	108	80-120%	---	---	
2-Butanone (MEK)	38.5	5.00	10.0	ug/L	1	40.0	---	96	80-120%	---	---	
n-Butylbenzene	20.7	0.500	1.00	ug/L	1	20.0	---	103	80-120%	---	---	
sec-Butylbenzene	21.0	0.500	1.00	ug/L	1	20.0	---	105	80-120%	---	---	
tert-Butylbenzene	22.0	0.500	1.00	ug/L	1	20.0	---	110	80-120%	---	---	
Carbon disulfide	21.3	5.00	10.0	ug/L	1	20.0	---	107	80-120%	---	---	
Carbon tetrachloride	23.2	0.500	1.00	ug/L	1	20.0	---	116	80-120%	---	---	
Chlorobenzene	20.3	0.250	0.500	ug/L	1	20.0	---	102	80-120%	---	---	
Chloroethane	18.1	5.00	5.00	ug/L	1	20.0	---	90	80-120%	---	---	
Chloroform	20.3	0.500	1.00	ug/L	1	20.0	---	101	80-120%	---	---	
Chloromethane	19.0	2.50	5.00	ug/L	1	20.0	---	95	80-120%	---	---	
2-Chlorotoluene	22.0	0.500	1.00	ug/L	1	20.0	---	110	80-120%	---	---	
4-Chlorotoluene	22.2	0.500	1.00	ug/L	1	20.0	---	111	80-120%	---	---	
Dibromochloromethane	21.6	0.500	1.00	ug/L	1	20.0	---	108	80-120%	---	---	
1,2-Dibromo-3-chloropropane	18.8	2.50	5.00	ug/L	1	20.0	---	94	80-120%	---	---	
1,2-Dibromoethane (EDB)	21.6	0.250	0.500	ug/L	1	20.0	---	108	80-120%	---	---	
Dibromomethane	21.0	0.500	1.00	ug/L	1	20.0	---	105	80-120%	---	---	
1,2-Dichlorobenzene	22.1	0.250	0.500	ug/L	1	20.0	---	110	80-120%	---	---	
1,3-Dichlorobenzene	21.7	0.250	0.500	ug/L	1	20.0	---	108	80-120%	---	---	
1,4-Dichlorobenzene	20.3	0.250	0.500	ug/L	1	20.0	---	102	80-120%	---	---	
Dichlorodifluoromethane	21.8	0.500	1.00	ug/L	1	20.0	---	109	80-120%	---	---	
1,1-Dichloroethane	19.8	0.200	0.400	ug/L	1	20.0	---	99	80-120%	---	---	

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Darrell Auvil, Project Manager

Apex Laboratories, LLC
6700 S.W. Sandburg Street
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ORELAP ID: **OR100062**

AECOM	Project: **POV FVP**	
111 SW Columbia St. Ste. 1500	Project Number: **60519969**	**Report ID:**
Portland, OR 97201	Project Manager: **Nicky Moody**	**A0I0248 - 09 24 20 1115**

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0090345 - EPA 5030B							**Water**					
LCS (0090345-BS1)			Prepared: 09/12/20 08:00		Analyzed: 09/12/20 09:17							
1,2-Dichloroethane (EDC)	20.5	0.200	0.400	ug/L	1	20.0	---	102	80-120%	---	---	
1,1-Dichloroethene	20.9	0.200	0.400	ug/L	1	20.0	---	105	80-120%	---	---	
cis-1,2-Dichloroethene	21.6	0.200	0.400	ug/L	1	20.0	---	108	80-120%	---	---	
trans-1,2-Dichloroethene	20.5	0.200	0.400	ug/L	1	20.0	---	102	80-120%	---	---	
1,2-Dichloropropane	19.0	0.250	0.500	ug/L	1	20.0	---	95	80-120%	---	---	
1,3-Dichloropropane	21.0	0.500	1.00	ug/L	1	20.0	---	105	80-120%	---	---	
2,2-Dichloropropane	28.6	0.500	1.00	ug/L	1	20.0	---	**143**	**80-120%**	---	---	Q-56
1,1-Dichloropropene	22.9	0.500	1.00	ug/L	1	20.0	---	114	80-120%	---	---	
cis-1,3-Dichloropropene	20.4	0.500	1.00	ug/L	1	20.0	---	102	80-120%	---	---	
trans-1,3-Dichloropropene	20.2	0.500	1.00	ug/L	1	20.0	---	101	80-120%	---	---	
Ethylbenzene	22.7	0.250	0.500	ug/L	1	20.0	---	114	80-120%	---	---	
Hexachlorobutadiene	24.4	2.50	5.00	ug/L	1	20.0	---	**122**	**80-120%**	---	---	Q-56
2-Hexanone	37.5	5.00	10.0	ug/L	1	40.0	---	94	80-120%	---	---	
Isopropylbenzene	20.6	0.500	1.00	ug/L	1	20.0	---	103	80-120%	---	---	
4-Isopropyltoluene	20.2	1.00	2.00	ug/L	1	20.0	---	101	80-120%	---	---	
Methylene chloride	20.6	5.00	10.0	ug/L	1	20.0	---	103	80-120%	---	---	
4-Methyl-2-pentanone (MiBK)	39.9	5.00	10.0	ug/L	1	40.0	---	100	80-120%	---	---	
Methyl tert-butyl ether (MTBE)	22.0	0.500	1.00	ug/L	1	20.0	---	110	80-120%	---	---	
Naphthalene	16.4	2.00	4.00	ug/L	1	20.0	---	82	80-120%	---	---	
n-Propylbenzene	21.2	0.250	0.500	ug/L	1	20.0	---	106	80-120%	---	---	
Styrene	20.6	0.500	1.00	ug/L	1	20.0	---	103	80-120%	---	---	
1,1,1,2-Tetrachloroethane	22.6	0.200	0.400	ug/L	1	20.0	---	113	80-120%	---	---	
1,1,2,2-Tetrachloroethane	20.9	0.250	0.500	ug/L	1	20.0	---	105	80-120%	---	---	
Tetrachloroethene (PCE)	21.4	0.200	0.400	ug/L	1	20.0	---	107	80-120%	---	---	
Toluene	20.5	0.500	1.00	ug/L	1	20.0	---	103	80-120%	---	---	
1,2,3-Trichlorobenzene	19.6	1.00	2.00	ug/L	1	20.0	---	98	80-120%	---	---	
1,2,4-Trichlorobenzene	18.8	1.00	2.00	ug/L	1	20.0	---	94	80-120%	---	---	
1,1,1-Trichloroethane	22.5	0.200	0.400	ug/L	1	20.0	---	113	80-120%	---	---	
1,1,2-Trichloroethane	20.7	0.250	0.500	ug/L	1	20.0	---	104	80-120%	---	---	
Trichloroethene (TCE)	19.9	0.200	0.400	ug/L	1	20.0	---	100	80-120%	---	---	
Trichlorofluoromethane	22.3	1.00	2.00	ug/L	1	20.0	---	111	80-120%	---	---	
1,2,3-Trichloropropane	19.9	0.500	1.00	ug/L	1	20.0	---	99	80-120%	---	---	
1,2,4-Trimethylbenzene	20.8	0.500	1.00	ug/L	1	20.0	---	104	80-120%	---	---	
1,3,5-Trimethylbenzene	23.3	0.500	1.00	ug/L	1	20.0	---	116	80-120%	---	---	

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Darrell Auvil, Project Manager

AECOM	Project: **POV FVP**	
111 SW Columbia St. Ste. 1500	Project Number: **60519969**	**Report ID:**
Portland, OR 97201	Project Manager: **Nicky Moody**	A0I0248 - 09 24 20 1115

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0090345 - EPA 5030B							**Water**					
LCS (0090345-BS1)			Prepared: 09/12/20 08:00	Analyzed: 09/12/20 09:17								
Vinyl chloride	19.6	0.100	0.200	ug/L	1	20.0	---	98	80-120%	---	---	
m,p-Xylene	41.8	0.500	1.00	ug/L	1	40.0	---	104	80-120%	---	---	
o-Xylene	20.1	0.250	0.500	ug/L	1	20.0	---	100	80-120%	---	---	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery:*	*97 %*	*Limits:*	*80-120 %*		*Dilution: 1x*					
Toluene-d8 (Surr)			*99 %*		*80-120 %*		*"*					
4-Bromofluorobenzene (Surr)			*95 %*		*80-120 %*		*"*					
Duplicate (0090345-DUP1)			Prepared: 09/12/20 10:10	Analyzed: 09/12/20 19:44								
QC Source Sample: C2-MW-9-D (A0I0248-07)												
EPA 8260D												
Acetone	ND	10.0	20.0	ug/L	1	---	ND	---	---	---	30%	
Acrylonitrile	ND	1.00	2.00	ug/L	1	---	ND	---	---	---	30%	
Benzene	ND	0.100	0.200	ug/L	1	---	ND	---	---	---	30%	
Bromobenzene	ND	0.250	0.500	ug/L	1	---	ND	---	---	---	30%	
Bromochloromethane	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
Bromodichloromethane	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
Bromoform	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
Bromomethane	ND	5.00	5.00	ug/L	1	---	ND	---	---	---	30%	
2-Butanone (MEK)	ND	5.00	10.0	ug/L	1	---	ND	---	---	---	30%	
n-Butylbenzene	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
sec-Butylbenzene	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
tert-Butylbenzene	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
Carbon disulfide	ND	5.00	10.0	ug/L	1	---	ND	---	---	---	30%	
Carbon tetrachloride	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
Chlorobenzene	ND	0.250	0.500	ug/L	1	---	ND	---	---	---	30%	
Chloroethane	ND	5.00	5.00	ug/L	1	---	ND	---	---	---	30%	
Chloroform	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
Chloromethane	ND	2.50	5.00	ug/L	1	---	ND	---	---	---	30%	
2-Chlorotoluene	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
4-Chlorotoluene	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
Dibromochloromethane	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	ug/L	1	---	ND	---	---	---	30%	
1,2-Dibromoethane (EDB)	ND	0.250	0.500	ug/L	1	---	ND	---	---	---	30%	
Dibromomethane	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	

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AECOM	Project: **POV FVP**	
111 SW Columbia St. Ste. 1500	Project Number: **60519969**	**Report ID:**
Portland, OR 97201	Project Manager: **Nicky Moody**	**A0I0248 - 09 24 20 1115**

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0090345 - EPA 5030B							**Water**					
Duplicate (0090345-DUP1)				Prepared: 09/12/20 10:10		Analyzed: 09/12/20 19:44						
QC Source Sample: C2-MW-9-D (A0I0248-07)												
1,2-Dichlorobenzene	ND	0.250	0.500	ug/L	1	---	ND	---	---	---	30%	
1,3-Dichlorobenzene	ND	0.250	0.500	ug/L	1	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	0.250	0.500	ug/L	1	---	ND	---	---	---	30%	
Dichlorodifluoromethane	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
1,1-Dichloroethane	ND	0.200	0.400	ug/L	1	---	ND	---	---	---	30%	
1,2-Dichloroethane (EDC)	ND	0.200	0.400	ug/L	1	---	ND	---	---	---	30%	
1,1-Dichloroethene	ND	0.200	0.400	ug/L	1	---	ND	---	---	---	30%	
cis-1,2-Dichloroethene	**0.760**	0.200	0.400	ug/L	1	---	0.760	---	---	0	30%	
trans-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	---	ND	---	---	---	30%	
1,2-Dichloropropane	ND	0.250	0.500	ug/L	1	---	ND	---	---	---	30%	
1,3-Dichloropropane	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
2,2-Dichloropropane	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
1,1-Dichloropropene	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
cis-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
trans-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
Ethylbenzene	ND	0.250	0.500	ug/L	1	---	ND	---	---	---	30%	
Hexachlorobutadiene	ND	2.50	5.00	ug/L	1	---	ND	---	---	---	30%	
2-Hexanone	ND	5.00	10.0	ug/L	1	---	ND	---	---	---	30%	
Isopropylbenzene	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
4-Isopropyltoluene	ND	1.00	2.00	ug/L	1	---	ND	---	---	---	30%	
Methylene chloride	ND	5.00	10.0	ug/L	1	---	ND	---	---	---	30%	
4-Methyl-2-pentanone (MiBK)	ND	5.00	10.0	ug/L	1	---	ND	---	---	---	30%	
Methyl tert-butyl ether (MTBE)	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
Naphthalene	ND	2.00	4.00	ug/L	1	---	ND	---	---	---	30%	
n-Propylbenzene	ND	0.250	0.500	ug/L	1	---	ND	---	---	---	30%	
Styrene	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
1,1,1,2-Tetrachloroethane	ND	0.200	0.400	ug/L	1	---	ND	---	---	---	30%	
1,1,2,2-Tetrachloroethane	ND	0.250	0.500	ug/L	1	---	ND	---	---	---	30%	
Tetrachloroethene (PCE)	ND	0.200	0.400	ug/L	1	---	ND	---	---	---	30%	
Toluene	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
1,2,3-Trichlorobenzene	ND	1.00	2.00	ug/L	1	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	1.00	2.00	ug/L	1	---	ND	---	---	---	30%	
1,1,1-Trichloroethane	ND	0.200	0.400	ug/L	1	---	ND	---	---	---	30%	

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Darrell Auvil, Project Manager

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ORELAP ID: **OR100062**

AECOM	Project: **POV FVP**	
111 SW Columbia St. Ste. 1500	Project Number: **60519969**	**Report ID:**
Portland, OR 97201	Project Manager: **Nicky Moody**	**A0I0248 - 09 24 20 1115**

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0090345 - EPA 5030B							**Water**					
Duplicate (0090345-DUP1)			Prepared: 09/12/20 10:10 Analyzed: 09/12/20 19:44									
QC Source Sample: C2-MW-9-D (A0I0248-07)												
1,1,2-Trichloroethane	ND	0.250	0.500	ug/L	1	---	ND	---	---	---	30%	
Trichloroethene (TCE)	ND	0.200	0.400	ug/L	1	---	ND	---	---	---	30%	
Trichlorofluoromethane	ND	1.00	2.00	ug/L	1	---	ND	---	---	---	30%	
1,2,3-Trichloropropane	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
1,2,4-Trimethylbenzene	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
1,3,5-Trimethylbenzene	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
Vinyl chloride	**0.360**	0.100	0.200	ug/L	1	---	0.320	---	---	12	30%	
m,p-Xylene	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
o-Xylene	ND	0.250	0.500	ug/L	1	---	ND	---	---	---	30%	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 107 %*		*Limits: 80-120 %*				*Dilution: 1x*			
Toluene-d8 (Surr)			*101 %*		*80-120 %*				*"*			
4-Bromofluorobenzene (Surr)			*101 %*		*80-120 %*				*"*			
Matrix Spike (0090345-MS1)			Prepared: 09/12/20 10:10 Analyzed: 09/12/20 14:46									
QC Source Sample: Non-SDG (A0I0220-01)												
EPA 8260D												
Acetone	49.5	10.0	20.0	ug/L	1	40.0	ND	87	39-160%	---	---	
Acrylonitrile	19.5	1.00	2.00	ug/L	1	20.0	ND	98	63-135%	---	---	
Benzene	20.9	0.100	0.200	ug/L	1	20.0	ND	105	79-120%	---	---	
Bromobenzene	19.6	0.250	0.500	ug/L	1	20.0	ND	98	80-120%	---	---	
Bromochloromethane	20.1	0.500	1.00	ug/L	1	20.0	ND	101	78-123%	---	---	
Bromodichloromethane	21.5	0.500	1.00	ug/L	1	20.0	ND	107	79-125%	---	---	
Bromoform	18.9	0.500	1.00	ug/L	1	20.0	ND	94	66-130%	---	---	
Bromomethane	22.2	5.00	5.00	ug/L	1	20.0	ND	111	53-141%	---	---	
2-Butanone (MEK)	42.3	5.00	10.0	ug/L	1	40.0	ND	106	56-143%	---	---	
n-Butylbenzene	20.6	0.500	1.00	ug/L	1	20.0	ND	103	75-128%	---	---	
sec-Butylbenzene	21.1	0.500	1.00	ug/L	1	20.0	ND	106	77-126%	---	---	
tert-Butylbenzene	22.5	0.500	1.00	ug/L	1	20.0	ND	112	78-124%	---	---	
Carbon disulfide	21.7	5.00	10.0	ug/L	1	20.0	ND	108	64-133%	---	---	
Carbon tetrachloride	23.6	0.500	1.00	ug/L	1	20.0	ND	118	72-136%	---	---	
Chlorobenzene	20.0	0.250	0.500	ug/L	1	20.0	ND	100	80-120%	---	---	
Chloroethane	18.4	5.00	5.00	ug/L	1	20.0	ND	92	60-138%	---	---	
Chloroform	20.3	0.500	1.00	ug/L	1	20.0	ND	101	79-124%	---	---	

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Darrell Auvil, Project Manager

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ORELAP ID: **OR100062**

AECOM	Project: **POV FVP**	
111 SW Columbia St. Ste. 1500	Project Number: **60519969**	**Report ID:**
Portland, OR 97201	Project Manager: **Nicky Moody**	**A0I0248 - 09 24 20 1115**

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0090345 - EPA 5030B							**Water**					
Matrix Spike (0090345-MS1)			Prepared: 09/12/20 10:10		Analyzed: 09/12/20 14:46							
QC Source Sample: Non-SDG (A0I0220-01)												
Chloromethane	19.2	2.50	5.00	ug/L	1	20.0	ND	96	50-139%	---	---	
2-Chlorotoluene	21.3	0.500	1.00	ug/L	1	20.0	ND	107	79-122%	---	---	
4-Chlorotoluene	22.2	0.500	1.00	ug/L	1	20.0	ND	111	78-122%	---	---	
Dibromochloromethane	20.7	0.500	1.00	ug/L	1	20.0	ND	104	74-126%	---	---	
1,2-Dibromo-3-chloropropane	18.3	2.50	5.00	ug/L	1	20.0	ND	92	62-128%	---	---	
1,2-Dibromoethane (EDB)	21.6	0.250	0.500	ug/L	1	20.0	ND	108	77-121%	---	---	
Dibromomethane	21.2	0.500	1.00	ug/L	1	20.0	ND	106	79-123%	---	---	
1,2-Dichlorobenzene	21.6	0.250	0.500	ug/L	1	20.0	ND	108	80-120%	---	---	
1,3-Dichlorobenzene	21.4	0.250	0.500	ug/L	1	20.0	ND	107	80-120%	---	---	
1,4-Dichlorobenzene	20.0	0.250	0.500	ug/L	1	20.0	ND	100	79-120%	---	---	
Dichlorodifluoromethane	22.7	0.500	1.00	ug/L	1	20.0	ND	114	32-152%	---	---	
1,1-Dichloroethane	19.7	0.200	0.400	ug/L	1	20.0	ND	99	77-125%	---	---	
1,2-Dichloroethane (EDC)	20.3	0.200	0.400	ug/L	1	20.0	ND	102	73-128%	---	---	
1,1-Dichloroethene	21.5	0.200	0.400	ug/L	1	20.0	ND	108	71-131%	---	---	
cis-1,2-Dichloroethene	21.8	0.200	0.400	ug/L	1	20.0	ND	109	78-123%	---	---	
trans-1,2-Dichloroethene	20.8	0.200	0.400	ug/L	1	20.0	ND	104	75-124%	---	---	
1,2-Dichloropropane	19.4	0.250	0.500	ug/L	1	20.0	ND	97	78-122%	---	---	
1,3-Dichloropropane	20.9	0.500	1.00	ug/L	1	20.0	ND	104	80-120%	---	---	
2,2-Dichloropropane	26.2	0.500	1.00	ug/L	1	20.0	ND	131	60-139%	---	---	Q-54a
1,1-Dichloropropene	23.4	0.500	1.00	ug/L	1	20.0	ND	117	79-125%	---	---	
cis-1,3-Dichloropropene	17.4	0.500	1.00	ug/L	1	20.0	ND	87	75-124%	---	---	
trans-1,3-Dichloropropene	19.7	0.500	1.00	ug/L	1	20.0	ND	99	73-127%	---	---	
Ethylbenzene	22.4	0.250	0.500	ug/L	1	20.0	ND	112	79-121%	---	---	
Hexachlorobutadiene	23.8	2.50	5.00	ug/L	1	20.0	ND	119	66-134%	---	---	Q-54
2-Hexanone	39.7	5.00	10.0	ug/L	1	40.0	ND	99	57-139%	---	---	
Isopropylbenzene	20.6	0.500	1.00	ug/L	1	20.0	ND	103	72-131%	---	---	
4-Isopropyltoluene	20.2	1.00	2.00	ug/L	1	20.0	ND	101	77-127%	---	---	
Methylene chloride	19.6	5.00	10.0	ug/L	1	20.0	ND	98	74-124%	---	---	
4-Methyl-2-pentanone (MiBK)	41.1	5.00	10.0	ug/L	1	40.0	ND	103	67-130%	---	---	
Methyl tert-butyl ether (MTBE)	21.0	0.500	1.00	ug/L	1	20.0	ND	105	71-124%	---	---	
Naphthalene	16.9	2.00	4.00	ug/L	1	20.0	ND	84	61-128%	---	---	
n-Propylbenzene	21.4	0.250	0.500	ug/L	1	20.0	ND	107	76-126%	---	---	
Styrene	20.5	0.500	1.00	ug/L	1	20.0	ND	102	78-123%	---	---	

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Darrell Auvil, Project Manager

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

AECOM	Project: **POV FVP**	
111 SW Columbia St. Ste. 1500	Project Number: **60519969**	**Report ID:**
Portland, OR 97201	Project Manager: **Nicky Moody**	**A0I0248 - 09 24 20 1115**

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0090345 - EPA 5030B							**Water**					
Matrix Spike (0090345-MS1)			Prepared: 09/12/20 10:10		Analyzed: 09/12/20 14:46							
QC Source Sample: Non-SDG (A0I0220-01)												
1,1,1,2-Tetrachloroethane	22.4	0.200	0.400	ug/L	1	20.0	ND	112	78-124%	---	---	
1,1,2,2-Tetrachloroethane	21.0	0.250	0.500	ug/L	1	20.0	ND	105	71-121%	---	---	
Tetrachloroethene (PCE)	20.8	0.200	0.400	ug/L	1	20.0	ND	104	74-129%	---	---	
Toluene	20.5	0.500	1.00	ug/L	1	20.0	ND	103	80-121%	---	---	
1,2,3-Trichlorobenzene	19.8	1.00	2.00	ug/L	1	20.0	ND	99	69-129%	---	---	
1,2,4-Trichlorobenzene	18.7	1.00	2.00	ug/L	1	20.0	ND	93	69-130%	---	---	
1,1,1-Trichloroethane	22.6	0.200	0.400	ug/L	1	20.0	ND	113	74-131%	---	---	
1,1,2-Trichloroethane	20.2	0.250	0.500	ug/L	1	20.0	ND	101	80-120%	---	---	
Trichloroethene (TCE)	19.8	0.200	0.400	ug/L	1	20.0	ND	99	79-123%	---	---	
Trichlorofluoromethane	22.7	1.00	2.00	ug/L	1	20.0	ND	114	65-141%	---	---	
1,2,3-Trichloropropane	19.5	0.500	1.00	ug/L	1	20.0	ND	98	73-122%	---	---	
1,2,4-Trimethylbenzene	21.0	0.500	1.00	ug/L	1	20.0	ND	105	76-124%	---	---	
1,3,5-Trimethylbenzene	23.1	0.500	1.00	ug/L	1	20.0	ND	116	75-124%	---	---	
Vinyl chloride	20.6	0.100	0.200	ug/L	1	20.0	ND	103	58-137%	---	---	
m,p-Xylene	42.3	0.500	1.00	ug/L	1	40.0	ND	106	80-121%	---	---	
o-Xylene	20.0	0.250	0.500	ug/L	1	20.0	ND	100	78-122%	---	---	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 97 %*		*Limits: 80-120 %*			*Dilution: 1x*				
Toluene-d8 (Surr)			*98 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*96 %*		*80-120 %*			*"*				

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111 SW Columbia St. Ste. 1500	Project Number: **60519969**	**Report ID:**
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SAMPLE PREPARATION INFORMATION

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Prep: EPA 3510C (Fuels/Acid Ext.)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 0090432							
A0I0248-02	Water	NWTPH-Dx	09/08/20 11:55	09/15/20 12:46	1070mL/5mL	1000mL/5mL	0.94
A0I0248-03	Water	NWTPH-Dx	09/09/20 09:45	09/15/20 12:46	1070mL/5mL	1000mL/5mL	0.94
A0I0248-04	Water	NWTPH-Dx	09/09/20 08:35	09/15/20 12:46	1060mL/5mL	1000mL/5mL	0.94
A0I0248-05	Water	NWTPH-Dx	09/09/20 11:30	09/15/20 12:46	1060mL/5mL	1000mL/5mL	0.94
A0I0248-06	Water	NWTPH-Dx	09/09/20 07:15	09/15/20 12:46	1060mL/5mL	1000mL/5mL	0.94
A0I0248-07	Water	NWTPH-Dx	09/09/20 09:50	09/15/20 12:46	1060mL/5mL	1000mL/5mL	0.94

Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

Prep: EPA 5030B

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 0090345							
A0I0248-02	Water	NWTPH-Gx (MS)	09/08/20 11:55	09/12/20 10:10	5mL/5mL	5mL/5mL	1.00
A0I0248-03	Water	NWTPH-Gx (MS)	09/09/20 09:45	09/12/20 10:10	5mL/5mL	5mL/5mL	1.00
A0I0248-04	Water	NWTPH-Gx (MS)	09/09/20 08:35	09/12/20 10:10	5mL/5mL	5mL/5mL	1.00
A0I0248-05	Water	NWTPH-Gx (MS)	09/09/20 11:30	09/12/20 10:10	5mL/5mL	5mL/5mL	1.00
A0I0248-06	Water	NWTPH-Gx (MS)	09/09/20 07:15	09/12/20 10:10	5mL/5mL	5mL/5mL	1.00
A0I0248-07	Water	NWTPH-Gx (MS)	09/09/20 09:50	09/12/20 10:10	5mL/5mL	5mL/5mL	1.00

Volatile Organic Compounds by EPA 8260D

Prep: EPA 5030B

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 0090345							
A0I0248-01	Water	EPA 8260D	09/08/20 10:40	09/12/20 10:10	5mL/5mL	5mL/5mL	1.00
A0I0248-03	Water	EPA 8260D	09/09/20 09:45	09/12/20 10:10	5mL/5mL	5mL/5mL	1.00
A0I0248-05	Water	EPA 8260D	09/09/20 11:30	09/12/20 10:10	5mL/5mL	5mL/5mL	1.00
A0I0248-06	Water	EPA 8260D	09/09/20 07:15	09/12/20 10:10	5mL/5mL	5mL/5mL	1.00
A0I0248-07	Water	EPA 8260D	09/09/20 09:50	09/12/20 10:10	5mL/5mL	5mL/5mL	1.00
A0I0248-08	Water	EPA 8260D	09/08/20 00:00	09/12/20 10:10	5mL/5mL	5mL/5mL	1.00

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Darrell Auvil, Project Manager

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503-718-2323
ORELAP ID: **OR100062**

AECOM	Project: **POV FVP**	
111 SW Columbia St. Ste. 1500	Project Number: **60519969**	**Report ID:**
Portland, OR 97201	Project Manager: **Nicky Moody**	**A0I0248 - 09 24 20 1115**

QUALIFIER DEFINITIONS

Client Sample and Quality Control (QC) Sample Qualifier Definitions:

Apex Laboratories

F-11	The hydrocarbon pattern indicates possible weathered diesel, mineral oil, or a contribution from a related component.
J	Estimated Result. Result detected below the lowest point of the calibration curve, but above the specified MDL.
Q-19	Blank Spike Duplicate (BSD) sample analyzed in place of Matrix Spike/Duplicate samples due to limited sample amount available for analysis.
Q-54	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +2%. The results are reported as Estimated Values.
Q-54a	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +23%. The results are reported as Estimated Values.
Q-56	Daily CCV/LCS recovery for this analyte was above the +/-20% criteria listed in EPA 8260

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Portland, OR 97201	Project Manager: **Nicky Moody**	**A0I0248 - 09 24 20 1115**

REPORTING NOTES AND CONVENTIONS:

Abbreviations:

DET Analyte DETECTED at or above the detection or reporting limit.

ND Analyte NOT DETECTED at or above the detection or reporting limit.

NR Result Not Reported

RPD Relative Percent Difference. RPDs for Matrix Spikes and Matrix Spike Duplicates are based on concentration, not recovery.

Detection Limits: Limit of Detection (LOD)

Limits of Detection (LODs) are normally set at a level of one half the validated Limit of Quantitation (LOQ).
If no value is listed ('-----'), then the data has not been evaluated below the Reporting Limit.

Reporting Limits: Limit of Quantitation (LOQ)

Validated Limits of Quantitation (LOQs) are reported as the Reporting Limits for all analyses where the LOQ, MRL, PQL or CRL are requested. The LOQ represents a level at or above the low point of the calibration curve, that has been validated according to Apex Laboratories' comprehensive LOQ policies and procedures.

Reporting Conventions:

Basis: Results for soil samples are generally reported on a 100% dry weight basis.
The Result Basis is listed following the units as " dry", " wet", or " " (blank) designation.

" dry" Sample results and Reporting Limits are reported on a dry weight basis. (i.e. "ug/kg dry")
See Percent Solids section for details of dry weight analysis.

" wet" Sample results and Reporting Limits for this analysis are normally dry weight corrected, but have not been modified in this case.

" " Results without 'wet' or 'dry' designation are not normally dry weight corrected. These results are considered 'As Received'.

QC Source:

In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) may be analyzed to demonstrate accuracy and precision of the extraction batch.

Non-Client Batch QC Samples (Duplicates and Matrix Spike/Duplicates) may not be included in this report. Please request a Full QC report if this data is required.

Miscellaneous Notes:

" --- " QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.

" *** " Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

Blanks:

Standard practice is to evaluate the results from Blank QC Samples down to a level equal to ½ the Reporting Limit (RL).
-For Blank hits falling between ½ the RL and the RL (J flagged hits), the associated sample and QC data will receive a 'B-02' qualifier.
-For Blank hits above the RL, the associated sample and QC data will receive a 'B' qualifier, per Apex Laboratories' Blank Policy.
For further details, please request a copy of this document.

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AECOM	Project: **POV FVP**	
111 SW Columbia St. Ste. 1500	Project Number: **60519969**	**Report ID:**
Portland, OR 97201	Project Manager: **Nicky Moody**	**A0I0248 - 09 24 20 1115**

REPORTING NOTES AND CONVENTIONS (Cont.):

Blanks (Cont.):

Sample results flagged with a 'B' or 'B-02' qualifier are potentially biased high if the sample results are less than ten times the level found in the blank for inorganic analyses, or less than five times the level found in the blank for organic analyses.

'B' and 'B-02' qualifications are only applied to sample results detected above the Reporting Level.

Preparation Notes:

Mixed Matrix Samples:

Water Samples:

Water samples containing significant amounts of sediment are decanted or separated prior to extraction, and only the water portion analyzed, unless otherwise directed by the client.

Soil and Sediment Samples:

Soil and Sediment samples containing significant amounts of water are decanted prior to extraction, and only the solid portion analyzed, unless otherwise directed by the client.

Sampling and Preservation Notes:

Certain regulatory programs, such as National Pollutant Discharge Elimination System (NPDES), require that activities such as sample filtration (for dissolved metals, orthophosphate, hexavalent chromium, etc.) and testing of short hold analytes (pH, Dissolved Oxygen, etc.) be performed in the field (on-site) within a short time window. In addition, sample matrix spikes are required for some analyses, and sufficient volume must be provided, and billable site specific QC requested, if this is required. All regulatory permits should be reviewed to ensure that these requirements are being met.

Data users should be aware of which regulations pertain to the samples they submit for testing. If related sample collection activities are not approved for a particular regulatory program, results should be considered estimates. Apex Laboratories will qualify these analytes according to the most stringent requirements, however results for samples that are for non-regulatory purposes may be acceptable.

Samples that have been filtered and preserved at Apex Laboratories per client request are listed in the preparation section of the report with the date and time of filtration listed.

Apex Laboratories maintains detailed records on sample receipt, including client label verification, cooler temperature, sample preservation, hold time compliance and field filtration. Data is qualified as necessary, and the lack of qualification indicates compliance with required parameters.

Apex Laboratories

Darrell Auvil, Project Manager

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Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

AECOM	Project: **POV FVP**	
111 SW Columbia St. Ste. 1500	Project Number: **60519969**	**Report ID:**
Portland, OR 97201	Project Manager: **Nicky Moody**	**A0I0248 - 09 24 20 1115**

LABORATORY ACCREDITATION INFORMATION

ORELAP Certification ID: OR100062 (Primary Accreditation) -
EPA ID: OR01039

All methods and analytes reported from work performed at Apex Laboratories are included on Apex Laboratories' ORELAP Scope of Certification, with the exception of any analyte(s) listed below:

Apex Laboratories

Matrix	Analysis	TNI_ID	Analyte	TNI_ID	Accreditation

All reported analytes are included in Apex Laboratories' current ORELAP scope.

Secondary Accreditations

Apex Laboratories also maintains reciprocal accreditation with non-TNI states (Washington DOE), as well as other state specific accreditations not listed here.

Subcontract Laboratory Accreditations

Subcontracted data falls outside of Apex Laboratories' Scope of Accreditation.
Please see the Subcontract Laboratory report for full details, or contact your Project Manager for more information.

Field Testing Parameters

Results for Field Tested data are provded by the client or sampler, and fall outside of Apex Laboratories' Scope of Accreditation.

Apex Laboratories

Darrell Auvil, Project Manager

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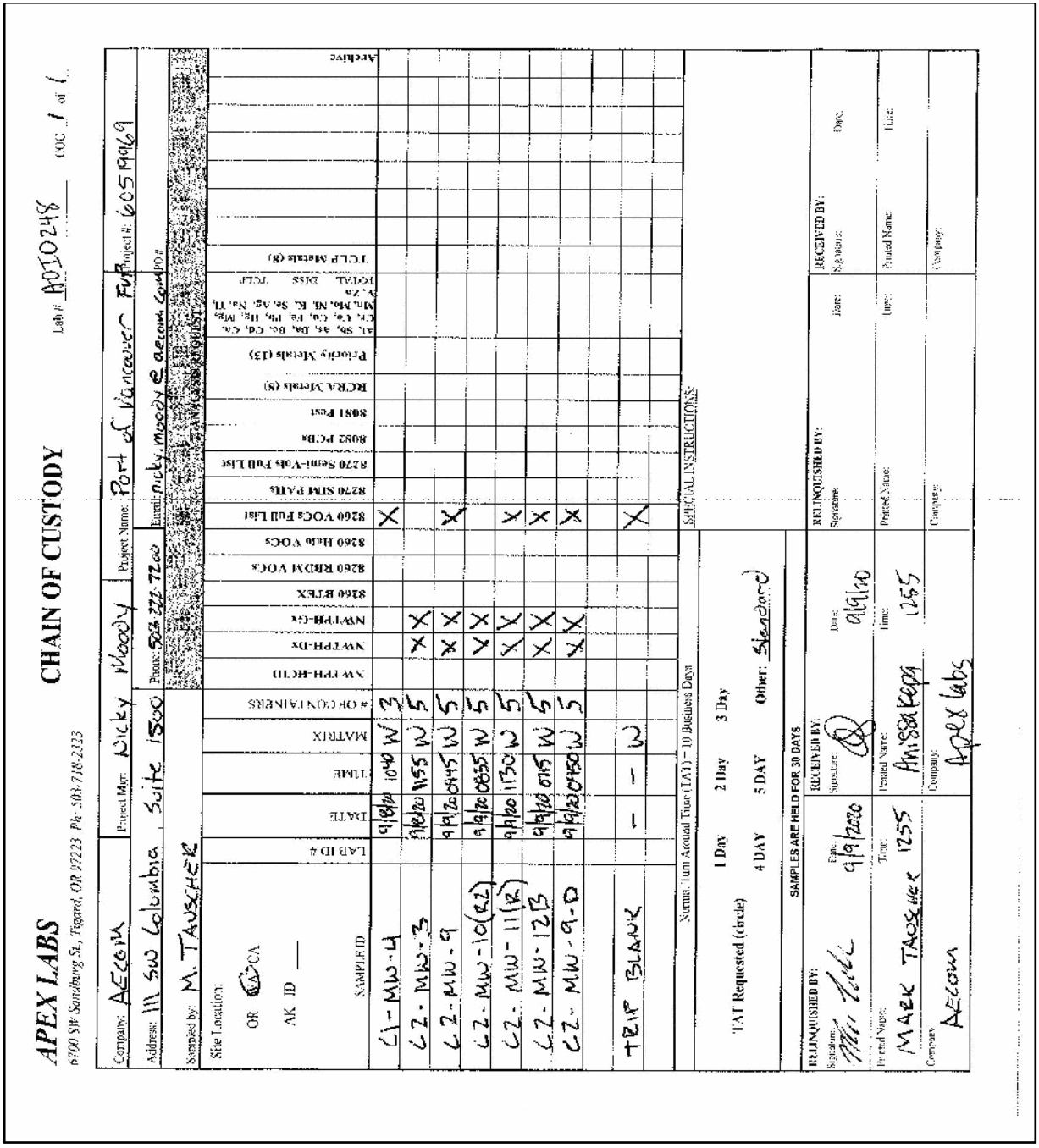
111 SW Columbia St. Ste. 1500	Project Number: **60519969**	**Report ID:**
Portland, OR 97201	Project Manager: **Nicky Moody**	**A0I0248 - 09 24 20 1115**



APEX LABS
6700 SW Sandburg St., Tigard, OR 97223 Ph: 503-718-2323

CHAIN OF CUSTODY

Lab # A0I0248 COC 1 of 1

Company: AECOM | Project Mgr: Nicky Moody | Project Name: Port of Vancouver FVP | Project #: 60519969
Address: 111 SW Columbia, Suite 1500 | Phone: 503 222 7266 | Email: nicky.moody@aecom.com | PO #
Sampled by: M. TAUSCHER

Site Location: OR CA AK ID

SAMPLE ID	LAB ID #	DATE	TIME	MATRIX	# OF CONTAINERS	NWTPH-HCID	NWTPH-Dx	NWTPH-Gx	8260 BTEX	8260 BRDM VOCs	8260 Halo VOCs	8260 VOCs Full List	8270 SIM PAHs	8270 Semi-Vols Full List	8082 PCBs	8081 Pest	RCRA Metals (8)	Priority Metals (13)	Al, Sb, As, Ba, Be, Ca, Co, Cr, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Tl, V, Zn	TOTAL DISS TCLP	TCLP Metals (8)	Archive
CL-MW-4		9/8/20	1040	W	5		X					X									
CL-MW-3		9/8/20	1155	W	5		X	X													
CL-MW-9		9/9/20	0645	W	5		X	X				X									
CL-MW-10(CL)		9/9/20	0835	W	5		X	X													
CL-MW-11(R)		9/9/20	1130	W	5		X	X				X									
CL-MW-12S		9/9/20	0115	W	5		X	X				X									
CL-MW-9-D		9/9/20	0950	W	5		X	X				X									
TRIP BLANK		-	-	W	2							X									

Normal Turn Around Time (TAT) = 10 Business Days

TAT Requested (circle): 1 Day 2 Day 3 Day 4 DAY 5 DAY Other: Standard

SPECIAL INSTRUCTIONS:

SAMPLES ARE HELD FOR 30 DAYS

RELINQUISHED BY: Signature: Date: 9/9/2020 Time: 1255 Printed Name: MARK TAUSCHER Company: AECOM

RECEIVED BY: Signature: Date: 9/9/20 Time: 1255 Printed Name: ANISSA KEPA Company: Apex Labs

RELINQUISHED BY: Signature: Date: Time: Printed Name: Company:

RECEIVED BY: Signature: Date: Time: Printed Name: Company:

Apex Laboratories

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ORELAP ID: **OR100062**

AECOM	Project: **POV FVP**	
111 SW Columbia St. Ste. 1500	Project Number: **60519969**	**Report ID:**
Portland, OR 97201	Project Manager: **Nicky Moody**	**A0I0248 - 09 24 20 1115**

APEX LABS COOLER RECEIPT FORM

Client: AECOM Element WO#: A0I0248

Project/Project #: Port of Vancouver FVP #60519969

Delivery Info:

Date/time received: 9/9/20 @ 1255 By: AKK

Delivered by: Apex____Client X ESS____FedEx____UPS____Swift____Senvoy____SDS____Other____

Cooler Inspection Date/time inspected: 9/9/20 @ 1300 By: AKK

Chain of Custody included? Yes X No ___ Custody seals? Yes____ No X

Signed/dated by client? Yes X No ___

Signed/dated by Apex? Yes X No ___

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (°C)	5.4						
Received on ice? (Y/N)	Y						
Temp. blanks? (Y/N)	Y						
Ice type: (Gel/Real/Other)	Gel & Real						
Condition:	Good						

Cooler out of temp? (Y/N) Possible reason why:

If some coolers are in temp and some out, were green dots applied to out of temperature samples? Yes/No/NA

Out of temperature samples form initiated? Yes/No/NA

Samples Inspection: Date/time inspected: 9/9/20 @ 1632 By: AKK

All samples intact? Yes X No ___ Comments:

Bottle labels/COCs agree? Yes X No ___ Comments: TB #2409

COC/container discrepancies form initiated? Yes ___ No X

Containers/volumes received appropriate for analysis? Yes X No ___ Comments:

Do VOA vials have visible headspace? Yes ___ No X NA ____

Comments

Water samples: pH checked: Yes X No___NA___ pH appropriate? Yes X No___NA____

Comments:

Additional information:

Labeled by: AKK Witness: JM Cooler Inspected by: AKK See Project Contact Form: Y

Apex Laboratories

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.

Darrell Auvil, Project Manager

Appendix C
Data Quality Review Report

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Data Quality Review Report

The data quality review of the six primary groundwater samples, one field duplicate groundwater sample, and one trip blank sample collected on September 8 and 9, 2020, at the Former Fort Vancouver Plywood Site in Vancouver, Washington has been completed. Samples were submitted to Apex Laboratories (Apex) of Tigard, Oregon, and were analyzed for volatile organic compounds (VOCs) by US Environmental Protection Agency [EPA] Method 8260D), gasoline-range hydrocarbons (Method NWTPH-Gx), and/or diesel-range and oil-range hydrocarbons (Method NWTPH-Dx).

This review included the analytical data presented in Apex report A0I0248. The data was reviewed based on *USEPA National Functional Guidelines for Organic Superfund Methods Data Review, January 2017*, and laboratory quality control criteria. Items reviewed included: chain-of-custody (COC) records and sample condition, hold times, surrogate recoveries, laboratory control and laboratory control duplicate results, laboratory duplicate results, field duplicate results, method blank results, trip blank results, and matrix spike results. Qualifiers assigned as a result of this review are included in Table 1. The following criteria were evaluated during the review:

- COC Records – Acceptable
- Temperature – Acceptable
- Preservation – Acceptable
- Holding Times – Acceptable
- Trip Blanks – Acceptable where applicable
- Method Blanks – Acceptable
- Surrogates – Acceptable
- Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) – Acceptable with the following exception:
    - VOCs by EPA Method 8260D – The percent recoveries for 2,2-dichloropropane (143%) and hexachlorobutadiene (122%) in the LCS associated with analytical batch 0090345 exceeded the control limits of 80-120%. 2,2-Dichloropropane and hexachlorobutadiene were not detected in the associated samples; therefore, data were not qualified based on these elevated LCS results.
- Matrix Spike – Acceptable where applicable
    - VOCs by EPA Method 8260C – A matrix spike was performed using a sample from a project unrelated to the Port of Vancouver Former Fort Vancouver Plywood Site. Results were acceptable.
- Laboratory Duplicate – Acceptable where applicable
    - VOCs by EPA Method 8260C – A laboratory duplicate was performed using C2-MW-9-D. Results were comparable.
    - NWTPH-Gx - A laboratory duplicate was performed using C2-MW-9-D. Results were comparable.

- Field Duplicate – Acceptable where applicable
    - Sample C2-MW-9-D (A0I0248-07) was submitted as a field duplicate of sample C2-MW-9 (A0I0248-03). Relative percent difference calculations were not performed as all sample results were less than five times the reporting limits.
- Reporting Limits – Acceptable
- Laboratory Notes and Qualifiers
    - Multiple VOC results and one diesel-range TPH result were flagged 'J' by the laboratory to indicate that the sample concentrations were less than the laboratory reporting limits but above the method detection limits. As there are greater levels of uncertainty with these results, the results are considered estimated.
    - The laboratory noted that the diesel hydrocarbon pattern for C2-MW-10(R2) indicates possible weathered diesel, mineral oil, or a contribution from a related component. Data were not qualified based on TPH pattern identification.

Overall Assessment of Data

The completeness of the analytical report for this groundwater monitoring event is 100%. The usefulness of the data is based on the EPA guidance documents referenced in the introduction of this report. Upon consideration of the information presented above, the data are considered usable. The data qualifiers assigned by the laboratory are shown on the laboratory reports.

Data Qualifier Definitions

U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J 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 above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria.

DNR Do Not Report. Another result is available that is more reliable.

References

USEPA, 2017. National Functional Guidelines for Organic Superfund Methods Data Review, January 2017.

Table 1. Sample Qualification Summary

AECOM Sample ID	Laboratory Sample ID	Analyte	Qualifier	Rationale
No data qualifiers were assigned to the results reported in A0I0248 based on this data validation.				

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