

## **Electronic Copy**

#### STATE OF WASHINGTON DEPARTMENT OF ECOLOGY

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July 29, 2020

Jennifer Sedlacheck, Project Manager Exxon Mobil Environmental Services 2555 West 190<sup>th</sup> Street Torrance, CA 90504 **jennifer.c.sedlachek@exxonmobil.com** 

# Re: Opinion pursuant to WAC 173-340-515(5) on Remedial Action for the following Hazardous Waste Site:

- Site Name: Mobil 19183
- Site Address: 801 Alabama Street, Bellingham, Washington
- Facility/Site No.: 19131
- VCP No.: NW2895
- Cleanup Site ID No.: 11811

Dear Jennifer Sedlacheck:

The Washington State Department of Ecology (Ecology) received your request for an opinion on a closure request for the **Mobil 19183** facility (Site). The Site is enrolled in the Voluntary Cleanup Program (VCP) as project number NW2895. This letter provides our opinion. We are providing this opinion under the authority of the Model Toxics Control Act (MTCA), Chapter 70.105D RCW. This opinion applies only to the Site described below.

#### **Description of the Site**

The Site is defined by the nature and extent of contamination associated with the following releases:

- Total petroleum hydrocarbons in the gasoline (TPH-G), diesel (TPH-D) and heavy oil (TPH-O) ranges, benzene, toluene, ethylbenzene and xylenes (BTEX) and lead into the Soil
- TPH-G, TPH-D, TPH-O, BTEX and lead into the Ground Water

**Enclosure A** includes a detailed description and diagrams of the Site, as currently known to Ecology.

Please note a parcel of real property can be affected by multiple sites. At this time, we have no information that the parcel associated with this Site is affected by other sites.

#### **Basis for the Opinion**

This opinion is based on the information contained in the following documents:

- 1. Kleinfelder, 2020. Soil and Groundwater Confirmation Sampling Report and Closure Request, Former Mobil Service Station 19183, 801 Alabama Street, Bellingham, Washington. May 20.
- 2. Kleinfelder, 2018. Groundwater Monitoring Report 2018, Former Mobil Station 19183, 801 Alabama Street, Bellingham, Washington. October 15.
- 3. Kleinfelder, 2017. Groundwater Monitoring Report Third Quarter 2017, Former Mobil Station 19183, 801 Alabama Street, Bellingham, Washington. October 11.
- 4. Kleinfelder, 2016. Groundwater Monitoring Report Third Quarter 2016, Former Mobil Station 19183, 801 Alabama Street, Bellingham, Washington. January 25.
- 5. Cardno ERI, 2016. *Groundwater Monitoring Report 3rd Quarter 2016, Former Mobil Station 19183.* January 25.
- 6. Cardno ERI, 2016. *Groundwater Monitoring Report 2<sup>nd</sup> Quarter 2016, Former Mobil Station 19183.* June 27.
- Cardno ERI, 2016. Groundwater Monitoring Report 1<sup>st</sup> Quarter 2016, Former Mobil Station 19183. May 2.
- 8. Cardno ERI, 2016. *Limited Soil and Groundwater Investigation and Groundwater Sampling and Monitoring Report, Former Mobil Station 19183.* February 12.
- 9. Cardno ERI, 2016. *Revised MW3 and MW4 Pumping Test and Potability Evaluation, Former Mobil Station 19183.* January 4.
- 10. Cardno ERI, 2015. MW3 and MW4 Pumping Test and Potability Evaluation, Former Mobil Station 19183. January 27.

- 11. Cardno ERI, 2014. Site Summary and Voluntary Cleanup Program Application, Former Mobil Station 19183. May 14.
- 12. Cardno ERI, 2014. Remedial Excavation Report, Former Mobil Station 19183. May 13.
- 13. Cardno ERI, 2013. *Groundwater Monitoring Report, Former Mobil Station 19183*. July 29.
- 14. Cardno ERI, 2013. *Groundwater Monitoring Report, Former Mobil Station 19183*. May 3.
- 15. Cardno ERI, 2013. *Groundwater Monitoring Report, Former Mobil Station 19183*. February 13.
- 16. Cardno ERI, 2013. Monitoring Well Installation and Sampling Report, Former Mobil Station 19183. July 29.
- 17. Cardno ERI, 2012. Tank Excavation and Soil Assessment Report, Former Mobil Station 19183. February 16.
- 18. Cardno ERI, 2011. Subsurface Investigation and Well Installation Report, Former Mobil Station 19183. September 1.
- 19. Cardno ERI, 2011. Subsurface Investigation and Soil Assessment Report, Former Mobil Station 19183. August 26.
- 20. Cardno ERI, 2011. Subsurface Investigation and Soil Assessment Report, Former Mobil Station 19183. June 30.

In addition to the above documents, Ecology issued written opinions for this Site in letters dated September 22, 2014, April 29, 2015 and June 7, 2019.

A number of these documents are accessible in electronic format from the Site web page<sup>[1]</sup>. The complete records are kept in the Central Files of the Northwest Regional Office of Ecology (NWRO) for review by appointment only. Visit our <u>Public Records Request page<sup>[2]</sup></u> to submit a public records request or get more information about the process. If you require assistance with this process, you may contact the Public Records Officer at <u>publicrecordsofficer@ecy.wa.gov</u> or (360) 407-6040.

<sup>&</sup>lt;sup>[1]</sup> <u>https://apps.ecology.wa.gov/gsp/Sitepage.aspx?csid=11811</u>

<sup>&</sup>lt;sup>[2]</sup> <u>https://ecology.wa.gov/publicrecords</u>

This opinion is void if any of the information contained in those documents is materially false or misleading.

#### Opinion

Based on a review of the *Soil and Groundwater Confirmation Sampling Report and Closure Request* (report) dated May 20, 2020, Ecology has determined:

There is still information needed to document the condition of soil and groundwater at this Site before Ecology can consider a No Further Action determination. The following comments provide what is still needed to document current Site conditions.

- Confirmation soil borings should have targeted the exact location and depth of previously collected samples of soil left in place that contained Site contaminants at the highest concentrations exceeding cleanup levels. The report text should explain in detail the objectives of the confirmation soil borings and the siting rationale. Information provided in a spreadsheet named 'Sampling Plan' emailed to Ecology on 7/1/19 needs to be added as a table to the report. In the 'Rationale' column, the depth and results of the previous soil boring sample being confirmed need to be added for clear comparison.
- According to Figure 3, some of the KLF-series borings were advanced into excavation backfill. The table should indicate if the planned KLF borings in backfill are sited to confirm soil below the bottom of the former excavation.
- Three soil confirmation samples (from soil borings KLF-5, KLF-6 and KLF-7) were analyzed selectively for TPH-G. The text needs to explain why the other samples were omitted for this analysis and why the sample from soil boring KLF-7 was the only soil sample not analyzed for BTEX. All Site contaminants should be analyzed for consistently.
- Benzene has been detected on the Site at concentrations up to 26.1 mg/kg; the Method A cleanup level for TPH-G in soil is 30 milligrams per kilogram. TPH-G detected in soil sample KLF-6 (200 mg/kg) is more than twice the cleanup level so a statistical evaluation is not possible for soil exceedances at this Site.
- Table 2 Ground water analytical data in the final quarterly monitoring (May 2019 to March 2020) has several qualifiers that were not present in earlier data. The data qualifiers and what they are attributable to should be explained in the text.
- Figure 3 The KLF- series borings should be shown in a different color and symbol from previous sampling locations on the Site. The figure should be similar to a figure 'Confirmation Sampling Locations' in pdf format emailed to Ecology on 5/20/19 for

better comparison. Please revise the definition of the blue dot symbol in the legend for clarification.

- Figures 4A through 4D There is insufficient data using triangulation for any of the ground water elevation contour maps to have curved contour lines. The maps need to be revised to accurately show the elevation contours.
- Appendix F No field data sheets were included for the May 2019 ground water sampling round. The field data sheets provided for the other three sampling rounds do not contain data that demonstrates the stabilization of water quality parameters prior to ground water sample collection. Temperature data recorded in the August and November 2019 sampling events suggest that the ground water samples were collected with limited or no purging. Please refer to Ecology's 2018 publication: *Purging and Sampling Monitoring Wells for General Chemistry Parameters* (https://fortress.wa.gov/ecy/publications/documents/1803214.pdf) for information on recommended ground water sampling procedures.

Ecology requires current, representative ground water data from the Site. Without following these procedures, the data is not acceptable for compliance.

- Ground water elevation data appear to have been collected as sampling proceeded rather than in a single synoptic event separate from and prior to the initiation of any purging or pumping related to sampling. This does not ensure an accurate measurement of static ground water levels in the three Site monitoring wells.
- Please provide a figure that enlarges the east excavation and confirmation soil sampling. The figure should use colored symbols to designate the timing of removals and the related confirmation soil sampling for ease of comparison and to document the conditions.
- Please generate at least two geologic cross-sections that illustrate the Site geologic conditions to better describe the conceptual site model for the site.

#### Limitations of the Opinion

1. Opinion does not settle liability with the state.

Liable persons are strictly liable, jointly and severally, for all remedial action costs and for all natural resource damages resulting from the release or releases of hazardous substances at the Site. This opinion **does not**:

• Resolve or alter a person's liability to the state.

• Protect liable persons from contribution claims by third parties.

To settle liability with the state and obtain protection from contribution claims, a person must enter into a consent decree with Ecology under RCW 70.105D.040(4).

#### 2. Opinion does not constitute a determination of substantial equivalence.

To recover remedial action costs from other liable persons under MTCA, one must demonstrate that the action is the substantial equivalent of an Ecology-conducted or Ecology-supervised action. This opinion does not determine whether the action you performed is substantially equivalent. Courts make that determination. *See* RCW 70.105D.080 and WAC 173-340-545.

#### 3. State is immune from liability.

The state, Ecology, and its officers and employees are immune from all liability, and no cause of action of any nature may arise from any act or omission in providing this opinion. *See* RCW 70.105D.030(1)(i).

#### **Contact Information**

Thank you for choosing to clean up the Site under the Voluntary Cleanup Program (VCP). After you have addressed our concerns, you may request another review of your cleanup. Please do not hesitate to request additional services as your cleanup progresses. We look forward to working with you.

For more information about the VCP and the cleanup process, please visit our web site: <u>www.ecy.wa.gov/vcp</u>. If you have any questions about this opinion, please contact me at (425) 649-7064 or heather.vick@ecy.wa.gov.

Sincerely,

Hentheltik

Heather Vick, LHg NWRO Toxics Cleanup Program

Enclosure (1): A – Description and Diagrams of the Site

ecc: Wesley Willow, Kleinfelder, Inc., <u>wwillow@kleinfelder.com</u>

### **Enclosure** A

### **Description and Diagrams of the Site**

### **Site Description**

This section provides Ecology's understanding and interpretation of Site conditions, and is the basis for the opinions expressed in the body of the letter.

**Site:** The Site is defined as total petroleum hydrocarbons in the gasoline (TPH-G), diesel (TPH-D) and heavy oil (TPH-O) ranges, benzene, toluene, ethylbenzene and xylenes (BTEX) and lead in soil and ground water at 801 Alabama Street in Bellingham, Washington (Property) (**Figure** 1). The Property corresponds to Whatcom County Property ID number 64037 which is 0.2009 acre in size.

<u>Area and Property Description</u>: The Property is located in the northeastern corner of the intersection of Alabama and James Streets. Land use in the vicinity of the Property consists of commercial and residential purposes. To the north of the Property are Vision Plus and Cummins Orthodontics; to the east are residential properties and King Street; to the south are Alabama Street and a commercial property; and to the west are James Street and West Edge Credit Union.

**Property History and Current Use:** The Property was the location of a Mobil-branded gasoline station that was in operation from 1956 to 1976. The Mobil station had two gasoline underground storage tanks (USTs) (4,000- and 6,000-gallon capacities) which were reportedly pumped out when the station closed in 1976 (**Figure 2**). However, no tank decommissioning records are available for the two USTs. After 1976, the Property was redeveloped as a parking lot for an adjacent commercial building. The Property is currently used as a parking lot for the Vision Plus clinic which is on adjoining property to the north.

**Sources of Contamination:** The potential sources of contamination on the Property are the two former gasoline USTs described above, fuel pump islands and related piping. In addition, a 300-gallon waste oil tank and a 500-gallon heating oil tank were also present on the Property. All of these USTs were reportedly installed in 1956 when Mobil service station 19183 was constructed. No official documentation exists on removal of the two gasoline USTs but the former tank pit was empty when it was excavated in 2012. The waste oil UST and delineated contaminated soil were removed in 2011; the heating oil UST and a sump were removed in 2013 (**Figure 3**).

**Physiographic Setting:** Western Whatcom County and the Bellingham area are part of the Fraser-Whatcom Lowlands, broadly characterized as a north-south trending structural and topographic depression bounded to the west by the complex tectonics of the San Juan and Canadian Gulf and Vancouver Islands, and to the east by the Cascade uplift. The Fraser-Whatcom Lowlands typically feature extensive sequences of consolidated and unconsolidated sediments, typically dominated near the surface by geologically recent glacial deposition.

The elevation of the Property is approximately 110 feet above mean sea level; the land surface of the Property slopes to the south toward Whatcom Creek.

<u>Surface/Storm Water System</u>: The surface water body closest to the Site is Whatcom Creek, located approximately 0.6 mile south of the Site. Storm water runoff on and in the vicinity of the Property disperses via sheet flow to catch basins connected to the City of Bellingham's storm water system.

**Ecological Setting:** Most of the Property is paved with concrete and asphalt. The Site area is heavily developed with commercial properties, arterial streets and Interstate 5. There is little terrestrial habitat in the immediate vicinity of the Site that would tend to attract wildlife.

**Geology:** The Site is underlain by a thin layer of Quaternary alluvium and colluvium which overlie Eocene-aged bedrock consisting of the Bellingham Bay Member of the Chuckanut Formation. The Bellingham Bay Member consists of a thick, strongly-folded series of sandstone, mudstone and conglomerate beds with locally present coal.

Soil borings drilled on the Site encountered silt and sandy silt to approximately 15 feet below the ground surface. A silty clay underlies the silt to a depth of at least 35 feet bgs, the maximum depth explored (soil boring B-2). Bedrock has not been encountered by any borings advanced to date on the Site.

**Ground Water:** Ground water first occurs as a perched zone in the Quaternary sediments at depths of 7 to 11 feet below the ground surface (bgs). Site boring logs indicate that a shallow silty clay layer occurs at 15 to 20 feet bgs which acts as an aquitard. Shallow perched ground water occurs above the silty clay. Based on borings drilled on the Property, the aquitard is at least 25 feet thick. The ground water flow direction in the perched zone, based on several rounds of ground water elevation measurements, is to the west-southwest. Ground water elevation contours for data collected on May 23, 2019 are shown in **Figure 4A**.

**Water Supply:** The Site area is supplied with drinking water by the City of Bellingham. The source of water is from Lake Whatcom which draws from rainwater in the Lake Whatcom watershed. Water is also obtained from meltwater of the Deming Glacier on Mount Baker which flows to the middle fork of the Nooksack River.

**<u>Release and Extent of Soil and Ground Water Contamination</u>:** Soil and ground water investigations have been conducted on the Site since 2011.

*Soil:* In March 2011, a surface geophysical survey using ground penetrating radar (GPR) was conducted in an effort to identify subsurface features related to former gasoline service station operations. Five geophysical anomalies were identified as potential USTs; three on the west side of the Property and two on the east side.

Soil borings B1 through B23 were also advanced in 2011 to a maximum depth of 8 feet. The

anomalies on the west side of the Property were investigated with soil borings B3, B4, B5 and B23 to maximum depth of 5 feet bgs; no USTs were encountered. The anomalies on the east side of the Property were not investigated with soil borings due to subsurface concrete obstructions or temporal constraints.

Selected soil samples collected from the borings were analyzed for petroleum hydrocarbons and BTEX. TPH-G and BTEX were detected at concentrations above cleanup levels in soil samples collected from borings B6, B7 and B22 (**Figure 5**).

In June 2011, an additional GPR survey was conducted which confirmed the five previously detected geophysical anomalies. In addition, soil borings B24 through B39 were advanced to a maximum depth of 41.5 feet bgs in order to collect soil samples and investigate the previously detected geophysical anomalies. No USTs were identified. Six of 24 soil samples collected contained concentrations of petroleum hydrocarbons above cleanup levels. Soil boring B27 was completed as monitoring well MW1, a 4-inch diameter well screened from 4 to 19 feet bgs.

Also in August 2011, soil borings B40 through B44 were advanced to a maximum depth of 12 feet bgs; only the soil sample collected in B42 at 5 feet bgs contained TPH-G and benzene above Method A cleanup levels. Monitoring well MW1 was installed in the borehole drilled for soil boring B27.

In November 2011, the 300-gallon waste oil UST and associated product piping were removed from the Property. Soil surrounding the UST was also removed to an approximate maximum depth of 6 feet bgs. Approximately 22 tons of petroleum-contaminated soil and debris were also excavated and removed from the Property. Approximately 250 gallons of petroleum-contaminated water were removed from the excavation. Soil samples were collected at the excavation limits. The excavation was backfilled with controlled density fill and resurfaced with asphalt to match the surrounding grade.

In August 2012, soil borings B45 through B47 were advanced to 20 feet bgs and soil samples were collected. Only the soil sample collected in boring B46 at 5 feet bgs contained TPH-G above the Method A cleanup level. Monitoring wells MW2 through MW4 were installed in the three boreholes respectively.

Soil samples collected from the UST and piping excavations were analyzed for petroleum hydrocarbons, BTEX, methyl-tert butyl ether (MTBE), ethylene dibromide (EDB), ethylene dichloride (EDC), naphthalene, halogenated volatile organic compounds, polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls and RCRA metals. The samples only contained non-detectable levels of petroleum hydrocarbons, with the exception of one bottom sample, T1B1, which contained 0.433 mg/kg TPH-G, 715 mg/kg TPH-D and 2,010 mg/kg TPH-O, which exceeded the Method A cleanup level for TPH-O of 2,000 mg/kg.

In August and September 2013, eastern and western portions of the Site were excavated. A total of 117 confirmation soil samples were analyzed for TPH-G, TPH-D, TPH-O, BTEX and lead. The western excavation area was approximately 2,800 square feet in size and extended to depths of 10 to 17 feet bgs. Soil samples collected from the excavation indicated that soil containing TPH-G and BTEX at concentrations exceeding Method A cleanup levels remained inside the south and west Property lines.

The eastern excavation was 760 square feet in area on the eastern perimeter of the Site to depths ranging from 2.5 to 8.5 feet bgs. During the excavation, a sump, a 300-gallon UST and associated piping were discovered, exposed and removed from the Property. Soil samples were collected from the bottom and sidewalls of the excavation. None of the confirmation samples contained detectable petroleum hydrocarbons or BTEX; however, one sidewall sample and the bottom samples contained detectable PAHs at concentrations below the Method A cleanup level.

In September 2013, a geosynthetic clay liner was installed along the western and southern walls of the western excavation, to aid in limiting ground water flow to and from that portion of the Site. The liner consisted of reinforced geosynthetic clay with two carrier geotextiles surrounding a layer of sodium bentonite. The western excavation was then backfilled with 2½-inch-minus rock, followed by approximately 2 feet of 5/8-inch crushed rock which was compacted using a roller to a tested 95% compaction.

The eastern excavation was backfilled with 5/8-inch diameter crushed rock which was compacted to 95%.

In October 2015, soil sampling was conducted to obtain analytical data for potential cleanup level calculations. Soil borings B48 through B51 were advanced to a depth of 5 feet bgs, except B51, which was advanced to 2.5 feet bgs. Soil samples were analyzed for TPH-G, TPH-D, TPH-O, BTEX, carcinogenic PAHs and total lead. In addition, selected soil samples were analyzed for EDB, EDC, HVOCs, MTBE, naphthalene, volatile petroleum hydrocarbons and extractable petroleum hydrocarbons.

Soil samples collected at depths of 2.5 and 5 feet bgs from the borings were analyzed for petroleum hydrocarbons, BTEX and lead. Soil sample S-5-B49 contained TPH-G and benzene at concentrations of 1,010 and 0.218 mg/kg, respectively. Soil sample S-2.5-B50 contained TPH-G at a concentration of 580 mg/kg.

In December 2019, eight confirmation soil borings (KLF-1 through KLF-8) were advanced to a maximum depth of 12 feet bgs. The borings were pre-cleared by hand auger to 4 feet bgs and completed using hollow stem auger drilling methods. The borings were sited to confirm that contamination left in place is no longer above cleanup levels. Soil samples from the borings were analyzed selectively for petroleum hydrocarbons, BTEX, PAHs and VOCs (**Figure 3**).

*Ground Water:* In March 2011, three temporary wells were installed in soil borings B6, B7 and B22 from which ground water samples were collected and analyzed. All of the ground water samples contained petroleum hydrocarbons above MTCA Method A cleanup levels, as described below. Concentrations of TPH-G in the temporary wells ranged from 1,370 to 1,810 micrograms per liter ( $\mu$ g/L), TPH-D ranged from 1,110 to 4,680  $\mu$ g/L, TPH-O ranged from 244 to 667  $\mu$ g/L and benzene ranged from 2.14 to 312  $\mu$ g/L. Total lead was detected at concentrations up to 60.7  $\mu$ g/L which exceeds the Method A cleanup level (15  $\mu$ g/L). Dissolved lead was detected at a concentration of 25.3  $\mu$ g/L in one of the samples, exceeding the Method A cleanup level (15  $\mu$ g/L).

In June 2011, monitoring well MW1 was installed in soil boring B27 (just northeast of soil boring B7), screened from 4 to 19 feet bgs. MW1 was sampled in November 2011 and contained: 40,700  $\mu$ g/L TPH-G, 3,770  $\mu$ g/L TPH-D, 3,230  $\mu$ g/L benzene, 1,160  $\mu$ g/L toluene, 1,550  $\mu$ g/L ethylbenzene, 5,230  $\mu$ g/L total xylenes and 13.4  $\mu$ g/L dissolved lead.

In August 2012, soil borings B45 through B47 were completed as monitoring wells MW2, MW3 and MW4, respectively. These monitoring wells were screened from 4.5 to 19.5 feet bgs or 5 to 20 feet bgs.

Periodic ground water sampling in monitoring wells MW1 through MW4 was conducted at the Site from August 2012 to June 2013.

Between 2011 and 2013, concentrations of the above-listed contaminants decreased in MW1. MW1 was last sampled in June 2013 and contained: 8,110  $\mu$ g/L TPH-G, 1,410  $\mu$ g/L TPH-D, 1,120  $\mu$ g/L benzene, 31.6  $\mu$ g/L toluene, 175  $\mu$ g/L ethylbenzene, 5,230  $\mu$ g/L total xylenes and non-detectable levels of lead. Monitoring well MW1 was decommissioned in August 2013 prior to a remedial excavation on the Site.

In MW2 through MW4, no TPH-G was detected at concentrations exceeding the Method A cleanup level. However, TPH-D and TPH-O were detected above Method A cleanup levels in the March and June 2013 sampling rounds. In 2012 and 2013, benzene was detected in MW2 and MW3 at concentrations above the Method A cleanup level.

In October 2014, constant rate pumping tests were performed on the Site using monitoring wells MW3 and MW4, which were the only wells available on the Site. The pumping test was conducted to demonstrate the non-potability of the uppermost water-bearing zone, a shallow perched layer occurring at approximately 7 to 11 feet bgs.

On October 22, 2014, MW4 was pumped at an approximate rate of 0.25 gallons per minute (gpm) until the well was dry. The pumping rate was measured using a graduated cylinder and the pump was adjusted as needed to maintain the constant rate. MW4, which is screened from 5

to 20 feet bgs, was pumped at 0.25 gpm to dryness (water level below pump intake at bottom of well) in 17 minutes.

On October 23, 2014, the pumping test was repeated using monitoring well MW3. The static water level was 8.58 feet bgs. The well was pumped at a rate of 0.25 gpm and went dry after approximately 8 minutes.

In October, 2015, ground water samples were collected from on-Site monitoring wells MW3 and MW4 as well as off-Property well MW2. The samples were analyzed for petroleum hydrocarbons, BTEX, cPAHs, VOCs, EDB and total and dissolved lead.

Although samples from MW2 and MW4 contained petroleum hydrocarbons at concentrations below Method A cleanup levels, benzene was detected in MW3 at a concentration of 8.53  $\mu$ g/L exceeding the Method A cleanup level of 5  $\mu$ g/L.

In 2016, a revised pumping test evaluation was conducted to determine non-potability of ground water on the Site. Analysis of both extraction and recovery data using MW3 as the observation well and MW4 as the pumping well. The hydraulic conductivities estimated using the recovery test data were 1 to 2 orders of magnitude higher than those calculated with the pumping test data. This suggested that the extraction rate during the pumping tests was higher than 0.25 gallon per minute.

Both MW3 and MW4 are adjacent to the former excavation which was backfilled with compacted materials. MW3 is south of a geosynthetic liner, placed vertically in the south and west walls of the excavation, which extends well below the water table. MW4 is adjacent to the backfilled eastern excavation area. It is unknown what hydrogeological effects are related to these subsurface alternations near the two monitoring wells used for the non-potability demonstration.

Ecology concluded in an opinion letter dated June 7, 2019 that it is unlikely that ground water on the Site would be considered non-potable based on the physical and chemical characteristics of the contaminant sources, potential connectivity of deeper aquifer zones and other hydrogeological characteristics of the Site.

In December 2019, no ground water samples were collected from soil borings KLF-1 through KLF-8.

### **Site Diagrams**







