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# THIRD AND FOURTH QUARTER 2021 GROUNDWATER MONITORING AND TREATMENT SYSTEM OPERATION AND MAINTENANCE REPORT

**CHS AUBURN SITE**
**AUBURN, WASHINGTON**

**Submitted by:**
**Farallon Consulting, L.L.C.**
**Cornwall Plaza Building**
**1201 Cornwall Avenue, Suite 105**
**Bellingham, Washington 98225**

**Farallon PN: 301-004**

**For:**
**CHS Inc.**
**763 Willoughby Lane**
**Stevensville, Montana 59870**

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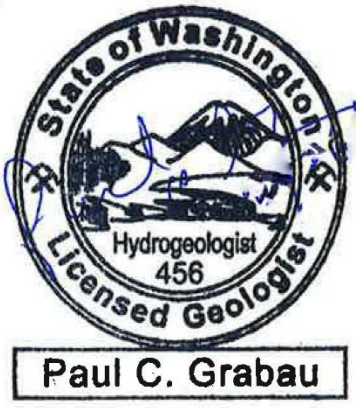
Prepared by:


Javan Ruark, L.G.
Associate Geologist

Reviewed by:




Paul C. Grabau, L.G., L.H.G.
Principal Hydrogeologist

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# 1.0 INTRODUCTION

Farallon Consulting, L.L.C. (Farallon) has prepared this report on behalf of CHS Inc. (CHS) to document air sparge (AS) and soil vapor extraction (SVE) system routine operation and maintenance (O&M) and optimization activities for the period from June 16, 2021 through November 16, 2021 (herein referred to as the reporting period) for the central portion of the CHS Auburn site in Auburn, Washington (herein referred to as the Site), and groundwater monitoring activities conducted on November 29 and 30, 2021 at the Site. For the purpose of this report, the groundwater monitoring and sampling activities conducted on November 29 and 30, 2021 are referred to herein as the November 2021 monitoring event. A Site vicinity map is provided on Figure 1, and a Site plan on Figure 2. The Site is listed in the Washington State Department of Ecology (Ecology) Confirmed and Suspected Contaminated Sites List database as Cenex Valley Supply Coop, and it has been assigned Site Identification No. 2487.

A Remedial Investigation/Feasibility Study for the Site was conducted in accordance with the Washington State Model Toxics Control Act Cleanup Regulation (MTCA), as established in Chapter 173-340 of the Washington Administrative Code, and pursuant to the requirements of Agreed Order No. 4033 entered into between CHS and Ecology on June 12, 2007. The Remedial Investigation Report was submitted to Ecology on July 20, 2011 (Farallon 2011). A Feasibility Study for the Site was submitted to Ecology on August 6, 2014 (Farallon 2014). A working draft of the Draft Cleanup Action Plan was submitted for Ecology review on May 28, 2015 (Farallon 2015). The public review and comment period for the Draft Cleanup Action Plan and for Draft Consent Decree No. 18-2-15430-8 issued by Ecology was completed on May 7, 2018. The *Final Cleanup Action Plan, CHS Auburn Site, 238 8th Street Southeast and Contiguous Areas, Auburn, Washington, Agreed Order No. 4033, Facility Site No. 2487* dated May 8, 2018 issued by Ecology (2018) (Final Cleanup Action Plan) was included as Exhibit B of Consent Decree No. 18-2-15430-8 between Ecology and CHS, with an effective date of June 20, 2018.

The scope of work for the November 2021 monitoring event and the AS/SVE system O&M and optimization activities was conducted in accordance with the *Performance Monitoring Plan, CHS Auburn Site, Auburn, Washington, Facility Site No. 2487, Consent Decree No. 18-2-15430-8* dated February 15, 2019 prepared by Farallon (2019) (Performance Monitoring Plan) that was approved by Ecology (2019).

This report is organized into the following sections:

- **Section 2**, **Treatment System Operation, Maintenance, and Optimization**, provides details on the operation, maintenance, and optimization of the AS/SVE system.
- **Section 3**, **Groundwater Monitoring Methods**, describes the sampling protocols and the selected monitoring wells and analyses for the November 2021 monitoring event.
- **Section 4**, **Groundwater Monitoring Results**, presents groundwater elevations and Site-wide analytical results from the November 2021 monitoring event, and the data validation conducted.

- **Section 5**, **Discussion**, presents a summary of contaminant distribution in groundwater at the Site prior to and after start-up of the reconfigured AS/SVE system in June 2019.
- **Section 6**, **Ongoing and Planned Activities**, discusses planned activities for the third semiannual 2022 groundwater monitoring event scheduled for May 2022, and routine O&M of the AS/SVE system at the Site.
- **Section 7**, **References**, provides a list of the documents cited in this report.

# 2.0 TREATMENT SYSTEM OPERATION, MAINTENANCE, AND OPTIMIZATION

This section provides details regarding the O&M and optimization of the AS/SVE system in the central area of the Site during the reporting period (Figure 3). A summary of AS/SVE system operational parameters from December 10, 2020 through June 15, 2021 was included in the First and Second Quarter 2021 Groundwater Monitoring, and Treatment System Operation and Maintenance Report (Farallon 2021).

As detailed in the Final Cleanup Action Plan, the purpose of the AS/SVE system is to reduce concentrations of total petroleum hydrocarbons as diesel-range organics (DRO), as oil-range organics (ORO), and as gasoline-range organics (GRO); and benzene, toluene, ethylbenzene, and xylenes (BTEX) (collectively referred to herein as the constituents of concern [COCs]) in groundwater that is down-gradient and beyond the area of influence of the AS wells in the central area of the Site to less than MTCA Method A cleanup levels within a reasonable restoration time frame.

## 2.1 AS/SVE SYSTEM OPERATION, MAINTENANCE, AND OPTIMIZATION

Routine O&M of the AS/SVE system was conducted bimonthly or in response to AS/SVE system shut-downs to measure and record operational parameter readings, which typically consisted of the following:

- AS compressor motor frequency, amperage, and total run time;
- SVE blower motor frequency, amperage, and total run time;
- SVE system total vacuum and flow rate;
- SVE system exhaust temperature;
- SVE well air flow, vacuum, and vapor volatile organic compound concentration measured by a photoionization detector;
- AS system pressure and temperature from the pre- and post-cooling piping array; and
- AS well airflow and pressure.

A summary of AS/SVE system operational parameters is provided in Tables 1 and 2. Based on the flow rates from or to individual AS and SVE wells and the pressure to individual AS wells, AS/SVE system operational settings were adjusted periodically to optimize flow and pressure to treat COCs in the subsurface more efficiently. AS/SVE system operational parameters for the reporting period are summarized as follows:

- Operating time (run time) totaled approximately 2,415 hours for the AS compressor and the SVE blower, approximately 61 percent during this period;
- Total vacuum for the SVE system ranged from 7.9 to 11.4 inches of water;

- The total flow rate for the SVE system was 85 standard cubic feet per minute;
- Total AS system pressure ranged from 17.8 to 18.5 pounds per square inch; and
- The total AS system flow rate ranged from 34.9 to 35.5 standard cubic feet per minute.

The AS/SVE operations were adjusted on August 17, 2021 to provide increased AS flow rate proximate to monitoring well CMW-27. The adjustments included shutting off the flow rate to AS wells CAS-3 through CAS-5, CAS-7, CAS-12, CAS-21 and CAS-22; which increased flow rate a minimum of 200 percent for AS wells CAS-16, CAS-18, CAS-19. These adjustments also increased flow rate in AS wells CAS-1, CAS-2, CAS-14, CAS-15, CAS-17, and CAS-20 to a less extent. Currently operating AS wells consist of CAS-1, CAS-2, and CAS 14 through CAS-20. Currently operating SVE wells consist of CSVE-1, CSVE-5, CSVE-7, CSVE-9, and CSVE-10 (Figure 3).

AS/SVE system operation was limited during the summer months of 2021 (June, July, and August) due to high ambient air temperatures in the AS/SVE equipment building. When ambient air temperature in the AS/SVE equipment building increase to a point near the maximum operation temperature of components of the AS/SVE system, the system automatically shuts down. Due to the recurring automated system shutdowns as a result of high temperatures inside the AS/SVE equipment building, modifications were made to the control panel on August 25, 2021 to allow for remote startups and shut-downs. The control panel modifications incorporated additional control logic for the system to shut down and restart based on ambient temperature in the AS/SVE equipment building, increasing AS/SVE operational time while maintaining equipment operating specifications.

The AS/SVE system was shut down manually on November 24, 2021 to allow groundwater to equilibrate before the November 2021 monitoring event was conducted. Following completion of the November 2021 monitoring event, the AS/SVE system was restarted manually on December 13, 2021. Automatic shut-down of the AS/SVE system occurred periodically during the reporting period, which was attributed to power outages and high-temperature alarms inside the treatment building. Each time the AS/SVE system shut down, Farallon personnel were alerted via the telemetry system, and if the AS/SVE system could not be restarted remotely, trained personnel mobilized to the Site in a reasonable time frame to inspect the system, diagnose the alarm condition, and restart the system, when appropriate.

An SVE system effluent air sample was collected during the August 25, 2021 O&M site visit. The air sample was collected from the SVE system exhaust stack using a 1-liter Summa canister and was delivered under standard chain-of-custody protocols to Friedman and Bruya, Inc. of Seattle, Washington for analysis for COCs by U.S. Environmental Protection Agency Method TO-15. Analytical results from the SVE system effluent air sampling are provided in Table 3. The laboratory analytical report is provided in Appendix A. SVE system effluent air sampling data and

the amount of benzene removed by the SVE system during the reporting period are summarized as follows:

- GRO was detected at concentrations of 0.87 nanoliters per microliter in the effluent air sample;
- BTEX constituents were not detected at a concentration exceeding laboratory reporting limits; and
- The calculated amount of benzene removed during this period is estimated at 0.0002 pound for an estimate total benzene removal of 2.83 pounds since starting up the AS/SVE system on May 29, 2019 (Table 1).

# 3.0 GROUNDWATER MONITORING METHODS

This section summarizes the sampling protocols and the selected monitoring wells and analyses for the November 2021 monitoring event conducted at the Site.

## 3.1 SAMPLING PROTOCOLS

Groundwater samples were collected on November 29 and 30, 2021 using low-flow sampling methods as described in the Performance Monitoring Plan. Before sampling was initiated, groundwater elevations and dissolved-oxygen content in groundwater were measured at select well locations on November 29, 2021. The groundwater elevation at each monitoring well also was measured during sampling. The depth to groundwater in each monitoring well was measured to the nearest 0.01 foot using an electronic water-level measuring device from the surveyed location on the top of the well casing. Measurements of dissolved-oxygen levels in groundwater were obtained using an InsiteIG Model 3100 dissolved-oxygen analyzer and optical fluorescence down-hole probe. Depth-to-groundwater measurements and the water-level elevations obtained prior to sampling for the groundwater monitoring events conducted from January 2018 through November 2021 are presented in Figure 4 and Table 4. The dissolved-oxygen measurements obtained concurrently with initial water-level measurements for the same time period are presented in Table 5.

Before the monitoring wells were purged, the intake of the dedicated polyethylene tubing was placed in the approximate middle of the saturated portion of the well screen. Before sampling was initiated, groundwater was purged from each monitoring well at a flow rate of approximately 150 milliliters per minute. Field measurements for pH, temperature, specific conductivity, dissolved oxygen, and oxidation-reduction potential (ORP) were recorded during purging using a YSI Model ProDSS water-quality analyzer equipped with a flow-through cell. Water-quality parameter geochemical measurements are summarized in Table 5. Groundwater samples were collected after the pH, temperature, and specific conductivity measurements stabilized. Stabilization was determined for pH as a change of +/-0.1 pH unit between readings for three consecutive measurements, and for temperature and specific conductivity as a relative percent difference of less than 3 percent between readings for three consecutive measurements.

Following stabilization of the water-quality parameters, samples were collected by pumping groundwater directly from each monitoring well through dedicated polyethylene tubing into laboratory-prepared containers, with care taken to minimize turbulence. Care was taken to not handle the container seal or lid when the samples were placed into the containers. The containers were filled to eliminate headspace, and the seal and the lid were secured. The samples were placed on ice in a cooler under standard chain-of-custody protocols, and delivered to OnSite Environmental Inc. of Redmond, Washington (OnSite) for laboratory analysis. Wastewater generated during purging of the monitoring wells is temporarily stored in a labeled 55-gallon drum in a secure area of the Site.

## 3.2 SELECTED MONITORING WELLS AND ANALYSES

Groundwater samples were collected from monitoring wells CMW-2, CMW-8, CMW-10, CMW-12, CMW-13, CMW-25 through CMW-31, HMW-9 through HMW-11, and HMW-13, and were analyzed for the following:

- DRO and ORO by Northwest Method NWTPH-Dx with and without acid-silica gel cleanup procedure;
- GRO by Northwest Method NWTPH-Gx; and
- BTEX constituents by U.S. Environmental Protection Agency Method 8021B.

Field duplicate groundwater samples were collected from monitoring wells CMW-12 and CMW-27 for quality assurance/quality control (QA/QC) purposes.

# 4.0 GROUNDWATER MONITORING RESULTS

This section presents groundwater elevations, geochemical parameters, and analytical results from the November 2021 monitoring event, and the data validation conducted.

## 4.1 GROUNDWATER ELEVATIONS

Groundwater elevations measured in the Site monitoring wells on November 29, 2021 ranged from 67.71 feet above mean sea level in monitoring well CMW-8 to 69.05 feet above mean sea level in monitoring well CMW-30 (Figure 4; Table 4). The groundwater flow direction was northeast, with an average gradient of 0.002 foot per foot. Groundwater elevations measured on November 29, 2021 were approximately 0.84 foot higher on average than those measured during the previous monitoring event, conducted on May 24, 2021 (Table 4).

## 4.2 SITE-WIDE MONITORING ANALYTICAL RESULTS

The analytical results from the November 2021 monitoring event are discussed in the following sections. Comparison of analytical results for DRO, ORO, GRO, and BTEX constituents to MTCA Method A groundwater cleanup levels is shown in Table 6. Comparison of analytical results for DRO with and without the acid-silica gel cleanup procedure to MTCA Method A groundwater cleanup levels is shown in Table 7. Analytical results for DRO, ORO, GRO, and BTEX constituents for the November 2021 monitoring event are presented on Figure 5. Analytical results for DRO and ORO with and without the acid-silica gel cleanup procedure for the November 2021 monitoring event are presented on Figure 6. The laboratory analytical report is provided in Appendix A.

### 4.2.1 Diesel-Range Organics

For the samples analyzed without using the acid-silica gel cleanup procedure, DRO was detected at concentrations exceeding the MTCA Method A cleanup level of 0.5 milligram per liter (mg/l) in groundwater samples collected from 7 of the 16 monitoring wells sampled (Table 6) and in the QA/QC samples collected from monitoring wells CMW-12 and CMW-27. Concentrations of DRO exceeding the MTCA Method A cleanup level ranged from 0.57 mg/l in the groundwater sample collected from monitoring well CMW-13 to 8.9 mg/l in the groundwater sample collected from monitoring well CMW-27.

For the samples analyzed using the acid-silica gel cleanup procedure, DRO was only detected at a concentration exceeding the MTCA Method A cleanup level in a single sample; DRO was detected at a concentration of 0.88 mg/l from monitoring well CMW-27 (Table 7).

The results for the groundwater sample and the QA/QC field duplicate sample collected from monitoring well CMW-27 run both with and without the acid-silica gel cleanup procedure, were flagged in the laboratory analytical report due to interferences from hydrocarbons in the gasoline range impacting DRO analytical results.

### 4.2.2 Oil-Range Organics

For the samples analyzed without using the acid-silica gel cleanup procedure, ORO was detected at concentrations exceeding the MTCA Method A cleanup level of 0.5 mg/l in groundwater samples collected from 4 of the 16 monitoring wells sampled and the field duplicate QA/QC sample collected from monitoring well CMW-27 (Table 6). Concentrations of ORO exceeding the MTCA Method A cleanup level ranged from 0.87 mg/l in the groundwater sample collected from monitoring well CMW-29 to 4.8 mg/l in the groundwater sample collected from monitoring well CMW-27.

For the samples analyzed using the acid-silica gel cleanup procedure, ORO was not detected at concentrations exceeding either the laboratory reporting limits or the MTCA Method A cleanup level.

### 4.2.3 Gasoline-Range Organics

GRO was detected at a concentration exceeding the MTCA Method A cleanup level of 800 micrograms per liter in the groundwater sample collected from 1 of the 16 monitoring wells sampled (Table 6). GRO was detected at a concentration of 960 micrograms per liter in the QA/QC field duplicate sample collected from monitoring well MW-27.

### 4.2.4 Benzene, Toluene, Ethylbenzene, and Xylenes

None of the BTEX constituents were detected at a concentration exceeding MTCA Method A cleanup levels (Table 6).

### 4.2.5 Groundwater Geochemical Parameters

The groundwater geochemical parameters measured in the field were pH, ORP, and dissolved-oxygen content. The results for these geochemical parameters are presented in Table 5 and summarized in the following sections.

#### 4.2.5.1 pH

The pH measurements for groundwater samples ranged from 5.96 pH units at monitoring well CMW-29 to 6.51 pH units at monitoring well CMW-8.

#### 4.2.5.2 Oxidation-Reduction Potential

ORP readings in groundwater ranged from -12.5 millivolts at monitoring well CMW-8 to 297.5 millivolts at monitoring well CMW-31.

#### 4.2.5.3 Dissolved Oxygen

The dissolved oxygen readings ranged from 0.85 mg/l at monitoring wells HMW-10 to 6.85 mg/l in monitoring well CMW-25.

## 4.3 DATA VALIDATION

Farallon reviewed the analytical data package provided by OnSite for sample delivery 2112-003. The groundwater samples from this group were analyzed for GRO, DRO, ORO, and BTEX constituents by the methods cited in Section 3.2, Selected Monitoring Wells and Analyses, within the prescribed method holding times. The QA/QC testing performed by OnSite included evaluation of surrogate recoveries and matrix spike/matrix spike duplicates. Results from the QA/QC testing were within established laboratory control limits. Based on Farallon's review of the QA/QC data generated during the November 2021 monitoring event, the groundwater analytical results are acceptable for use in characterizing groundwater quality at the Site relative to the groundwater quality cleanup levels used for comparative purposes in this report. The laboratory analytical report for the samples analyzed by OnSite is provided in Appendix A.

# 5.0 DISCUSSION

This section provides a summary of the distribution of DRO, ORO, GRO, and BTEX constituents detected in groundwater at the Site during the November 2021 monitoring event relative to the monitoring event in May 2021 and the pre-AS/SVE system start-up monitoring event conducted in January 2019. Trends in COC concentrations relative to groundwater elevation changes since 2018 also are discussed where trends appear evident. Data trends of select COC concentrations in groundwater for key monitoring wells are shown on Charts 1 through 8. Note that the DRO and ORO results in the discussion and used to construct the charts are for samples analyzed without the acid-silica gel cleanup procedure.

Concentrations of DRO, ORO, GRO, and BTEX constituents detected in groundwater samples collected from Site monitoring wells during the November 2021 monitoring event varied from those detected during the 2018 through May 2021 monitoring events as follows:

- **Monitoring Well CMW-2:** DRO and ORO concentrations increased between May and November 2021. DRO and ORO were the only constituents detected at concentrations exceeding the MTCA Method A cleanup level at this location during the November 2021 monitoring event.

  Following start-up of the reconfigured AS/SVE system in June 2019, concentrations of DRO and ORO decreased from the January 2019 monitoring event (Chart 1). However, during the November 2019 monitoring event, concentrations of DRO and ORO increased to concentrations exceeding those prior to start-up of the reconfigured AS/SVE system. DRO and ORO concentrations have shown an overall decreasing trend during the monitoring events conducted from February 2020 to November 2021. An evident correlation between COC concentrations and groundwater elevations in monitoring well CMW-2 is not apparent (Chart 1).

- **Monitoring Well CMW-8**: DRO and ORO concentrations increased slightly between May and November 2021. DRO was the only constituent detected at a concentration exceeding the MTCA Method A cleanup level at this location during the November 2021 monitoring event.

  A concentration trend chart was not prepared for monitoring well CMW-8 because it is located 376 feet down-gradient of the active AS/SVE system; therefore, it likely is beyond the area of influence of the system.

- **Monitoring Well CMW-10:** DRO concentrations increased between May and November 2021, whereas ORO concentrations decreased. DRO and ORO were the only constituents detected at concentrations exceeding the MTCA Method A cleanup level at this location during the November 2021 monitoring event.

  Following start-up of the reconfigured AS/SVE system in June 2019, concentrations of DRO and ORO fluctuated during the groundwater monitoring events conducted from

August 2019 through November 2021, with the highest concentrations detected during the May 2020 monitoring event (Chart 2). DRO and ORO concentrations recorded for the November 2021 monitoring event are similar to those detected during the May 2020 monitoring event (Chart 2).

- **Monitoring Well CMW-12:** DRO and ORO concentrations decreased between May and November 2021. DRO was the only constituent detected at concentrations exceeding the MTCA Method A cleanup level at this location during the November 2021 monitoring event.

  DRO and ORO showed overall increasing trends through February 2020, with the highest concentrations detected since January 2018. However, concentrations of DRO and ORO showed an overall decreasing trend between the February 2020 and November 2021 monitoring events. GRO concentrations from the November 2021 monitoring event were the lowest since start-up of the reconfigured AS/SVE system in June 2019. Elevated concentrations of DRO, ORO, and GRO detected in monitoring well CMW-12 generally have correlated with seasonally higher groundwater elevations over the past 2 years (Chart 3).

- **Monitoring Well CMW-13:** DRO and ORO concentrations decreased between May and November 2021. DRO was the only constituent detected at a concentration exceeding the MTCA Method A cleanup level at this location during the November 2021 monitoring event.

  Following start-up of the reconfigured AS/SVE system in June 2019, concentrations of DRO decreased slightly, but increased between August 2019 and the November 2019 and February 2020 monitoring events, to concentrations exceeding those prior to June 2019 (Chart 4). DRO concentrations showed an overall decreasing trend between May 2020 and November 2021 monitoring events. Elevated concentrations of DRO in monitoring well CMW-13 generally have correlated with seasonally higher groundwater elevations over the past 2 years. Dissolved oxygen readings increased by a multiple of at least 2, compared to previous monitoring events. Air sparge well CAS-20, up-gradient of monitoring well CMW-27, was increased by approximately 50 percent on August 17, 2021 (Table 2) which could be a contributing factor to the increased dissolved oxygen reading.

- **Monitoring Well CMW-25:** None of the constituents analyzed for at this location were detected at a concentration exceeding MTCA Method A cleanup levels during the November 2021 monitoring event.

  A concentration trend chart was not prepared for monitoring well CMW-25 because concentrations detected from January 2018 to August 2019 and February 2020 to November 2021 did not exceed laboratory reporting limits (Table 6).

- **Monitoring Well CMW-27:** Between May and November 2021, DRO and ORO concentrations increased, whereas GRO, ethylbenzene, and total xylene concentrations

decreased. DRO and ORO were the only constituents detected at concentrations exceeding MTCA Method A cleanup levels at this location during the November 2021 monitoring event.

Concentrations of DRO recorded for the August 2019 monitoring event showed a decrease to less than January 2019 pre–start-up concentrations, but fluctuated during the November 2019; February, May, and November 2020; and May and November 2021 monitoring events. In contrast to DRO concentrations in monitoring wells CMW-12 and CMW-13, the lowest concentrations of DRO detected in monitoring well CMW-27 since start-up of the reconfigured AS/SVE system in June 2019 were during the February 2020 monitoring event. Concentrations of ORO recorded for the August 2019 monitoring event showed a decrease to less than those in January 2019 prior to system start-up but an increased in November 2019 and February and May 2020; concentrations decreased in November 2020 followed by increases in May and November 2021. Following start-up of the reconfigured AS/SVE system in June 2019, concentrations of GRO increased slightly, followed by decreases in November 2019 and February 2020, increases in May and November 2020, and decreases during the and May and November 2021 monitoring events (Chart 5). Concentrations of DRO, ORO, and GRO in monitoring well CMW-27 have not appeared to correlate with fluctuations in groundwater elevations over the past 2 years.

Air sparge well flow rates proximate to monitoring well CMW-27 were increased by a multiple of 2 on August 17, 2021 (Table 2) but no observable change in dissolved oxygen reading was observed.

- **Monitoring Well CMW-28:** DRO and ORO concentrations decreased between May and November 2021. None of the constituents analyzed for at this location were detected at a concentration exceeding MTCA Method A cleanup levels during the November 2021 monitoring event.

  Following start-up of the reconfigured AS/SVE system in June 2019, concentrations of DRO in groundwater increased in August 2019 to slightly exceeding those prior to June 2019, whereas the ORO concentrations remained less than the laboratory reporting limit (Chart 6). Roughly a four-fold increase in DRO and ORO concentrations was observed between the August and the November 2019 monitoring events, followed by decreases in February and May 2020 to concentrations similar to those in January 2019, prior to start-up of the reconfigured AS/SVE system. Concentrations of DRO and ORO for the November 2021 monitoring event were less than the laboratory reporting limits. Elevated concentrations of DRO and ORO in monitoring well CMW-28 appear to correlate somewhat with seasonally lower groundwater elevations over the past 2 years.

- **Monitoring Well CMW-29:** DRO and ORO concentrations increased between November 2020 and May 2021. DRO and ORO were the only constituents detected at concentrations exceeding the MTCA Method A cleanup level at this location during the November 2021 monitoring event.

A concentration trend chart was not prepared for monitoring well CMW-29, because it is located 120 feet up-gradient of the active AS/SVE system and most likely is not affected by the system operation.

- **Monitoring Well CMW-30:** DRO concentrations decreased slightly between May and November 2021. None of the constituents analyzed for were detected at a concentration exceeding MTCA Method A cleanup levels during the November 2021 monitoring event.

  A concentration trend chart was not prepared for monitoring well CMW-30, because it is located 220 feet up-gradient of the active AS/SVE system, and likely is not affected by system operation.

- **Monitoring Well CMW-31:** ORO concentrations decreased between May and November 2021. None of the constituents analyzed for at this location were detected at a concentration exceeding MTCA Method A cleanup levels during the November 2021 monitoring event.

  A concentration trend chart was not prepared for monitoring well CMW-31, because it is located 420 feet down-gradient of the active AS/SVE system, and likely is beyond the area of influence of the system.

- **Monitoring Well HMW-9:** DRO and ORO concentrations decreased between May and November 2021. None of the constituents analyzed for at this location were detected at a concentration exceeding MTCA Method A cleanup levels during the November 2021 monitoring event.

  A concentration trend chart was not prepared for monitoring well HMW-9, because it is located 250 feet down-gradient of the active AS/SVE system, and likely is beyond the area of influence of the system.

- **Monitoring Well HMW-10:** DRO and ORO concentrations decreased between May and November 2021. None of the constituents analyzed for at this location were detected at a concentration exceeding MTCA Method A cleanup levels during the November 2021 monitoring event.

  Following start-up of the reconfigured AS/SVE system in June 2019, concentrations of DRO and ORO detected during the August and November 2019 and February and May 2020 monitoring events fluctuated, with the highest concentrations detected during the November 2019 monitoring event. (Chart 7). The 4.49 mg/l increase in the DRO concentration between the August and the November 2019 monitoring events was the largest increase for the monitoring wells sampled at the Site in 2019. Similarly, a greater than three-fold increase in DRO concentrations occurred between the August and November 2019 monitoring events. However, concentrations of DRO and ORO have shown an overall decreasing trend since the November 2019 monitoring event. Elevated concentrations of DRO and ORO in monitoring well HMW-10 generally have not appeared to correlate with seasonally lower groundwater elevations since reconfigured system start-up (Chart 7).

- **Monitoring Well HMW-11:** DRO, ORO, and GRO concentrations decreased between November 2020 and May 2021. None of the constituents analyzed for at this location were detected at a concentration exceeding MTCA Method A cleanup levels during the November 2021 monitoring event.

  Following start-up of the reconfigured AS/SVE system in June 2019, concentrations of DRO increased through the February 2020 monitoring event, followed by decreases recorded for the May and November 2020 monitoring events. Increased concentrations of DRO were recorded during the May 2021 monitoring event, similar to those detected during the November 2019 monitoring event; however, DRO concentrations decreased during the November 2021 monitoring event (Chart 8). Concentrations of ORO in groundwater increased from less than the laboratory reporting limit in January 2019, prior to start-up of the reconfigured AS/SVE system, to exceeding the MTCA Method A cleanup level during the November 2019; February, May, and November 2020; and May 2021 monitoring events. ORO concentrations recorded for the November 2021 monitoring event showed a significant decrease since the May 2021 monitoring event. Following start-up of the reconfigured AS/SVE system in June 2019, concentrations of GRO decreased steadily, to less than the laboratory reporting limit in February 2020. GRO concentrations recorded for the May 2020 monitoring event showed an increase, to a level exceeding the MTCA Method A cleanup level, but a decrease to less than the MTCA Method A cleanup level from November 2020 to November 2021.

  Dissolved oxygen readings increased by a multiple of at least three compared to previous monitoring events. Up-gradient air sparge wells were increased on August 17, 2021 (Table 2), which could be a contributing factor to the increased dissolved oxygen reading.

- **Monitoring Well HMW-13:** ORO concentrations decreased slightly between May and November 2021. None of the constituents analyzed for at this location were detected at a concentration exceeding MTCA Method A cleanup levels during the November 2021 monitoring event.

  A concentration trend chart was not prepared for monitoring well HMW-13, because concentrations detected since January 2018 have not exceeded MTCA Method A cleanup levels and have remained near or below laboratory reporting limits (Table 6).

In summary, BTEX constituents were not detected at a concentration exceeding MTCA Method A cleanup levels in any of the Site monitoring wells sampled during the November 2021 monitoring event. GRO was detected at a concentration exceeding the MTCA Method A cleanup level only in monitoring well CMW-27 during the November 2021 monitoring event. The expanded area of influence of the reconfigured AS/SVE system appears to have mobilized some dissolved-phase DRO and ORO from smear zone soil, as shown by increases in DRO and ORO concentrations in several monitoring wells, most notably CMW-2, CMW-10, CMW-12, CMW-13, CMW-27, and CMW-29. Increases in concentrations of DRO and ORO relative to those detected during the November 2020 monitoring event were observed in groundwater at most of the Site monitoring wells during the November 2021 monitoring event.

Except for intermittent shutdowns, the current configuration of the AS/SVE system has operated continuously from startup in June 2019 through November 2021 and has removed a total of 2.83 pounds of benzene from the vadose zone at the Site. The removal rate of benzene has decreased to asymptotic levels since June 2019 and demonstrates that the AS/SVE system is no longer removing significant benzene mass from the vadose zone at the Site (Table 1). Based on the concentration trends for GRO and BTEX constituents observed in groundwater at the Site, Farallon recommends discontinuing operation of the AS/SVE system in conjunction with implementation of a monitored natural attenuation study to assess the viability of natural attenuation as a feasible step to achieve the cleanup objectives for the Site.

On October 20, 2021, Ecology suggested that DRO and ORO groundwater samples collected during the November 2021 monitoring event could be analyzed both with and without using the acid-silica gel cleanup procedure in accordance with recent Ecology guidance (2021a). Details of the Ecology request were provided in the email regarding CHS Quarterly Progress Report 7/1 through 9/30/2021 dated October 20, 2021 from Jerome Cruz of Ecology to Javan Ruark of Farallon (Ecology 2021). The purpose of the additional analysis was to evaluate whether comparison of the DRO results with and without the acid-silica gel cleanup procedure suggest that the residual DRO concentrations in groundwater may be attributed to polar metabolites resulting from biodegradation of the dissolved DRO plume.

The DRO analytical results from the November 2021 monitoring event suggest a highly weathered DRO footprint in groundwater at the Site. In the samples analyzed using the acid-silica gel cleanup procedure, DRO was detected in only a single sample (CMW-27) at a concentration exceeding the laboratory reporting limits, Furthermore, ORO was not detected at concentrations exceeding the laboratory reporting limits in any of the samples analyzed using the acid-silica gel cleanup procedure. Further discussion with Ecology is warranted to achieve the cleanup objectives for the Site based on historical groundwater data and recent application of the acid-silica gel cleanup procedure for the DRO and ORO groundwater analyses. Farallon recommends analysis of DRO and ORO samples both with and without the acid-silica gel cleanup procedure as part of the proposed monitoring natural attenuation study to be conducted following shut-down of the AS/SVE system.

# 6.0 ONGOING AND PLANNED ACTIVITIES

As detailed in Table 3 in the Final Cleanup Action Plan, quarterly performance groundwater monitoring and routine O&M of the AS/SVE system was conducted for the first four quarters following start-up of the AS/SVE system, and is to be conducted semiannually thereafter. The November 2021 monitoring event was the third semiannual groundwater monitoring event; the fourth is scheduled for May 2022. Conducting routine O&M of the AS/SVE system will continue on a bimonthly basis.

# 7.0 REFERENCES


Farallon Consulting, L.L.C. (Farallon). 2011. *Remedial Investigation Report, CHS Auburn Site, Auburn, Washington*. Prepared for CHS Inc. July 20.

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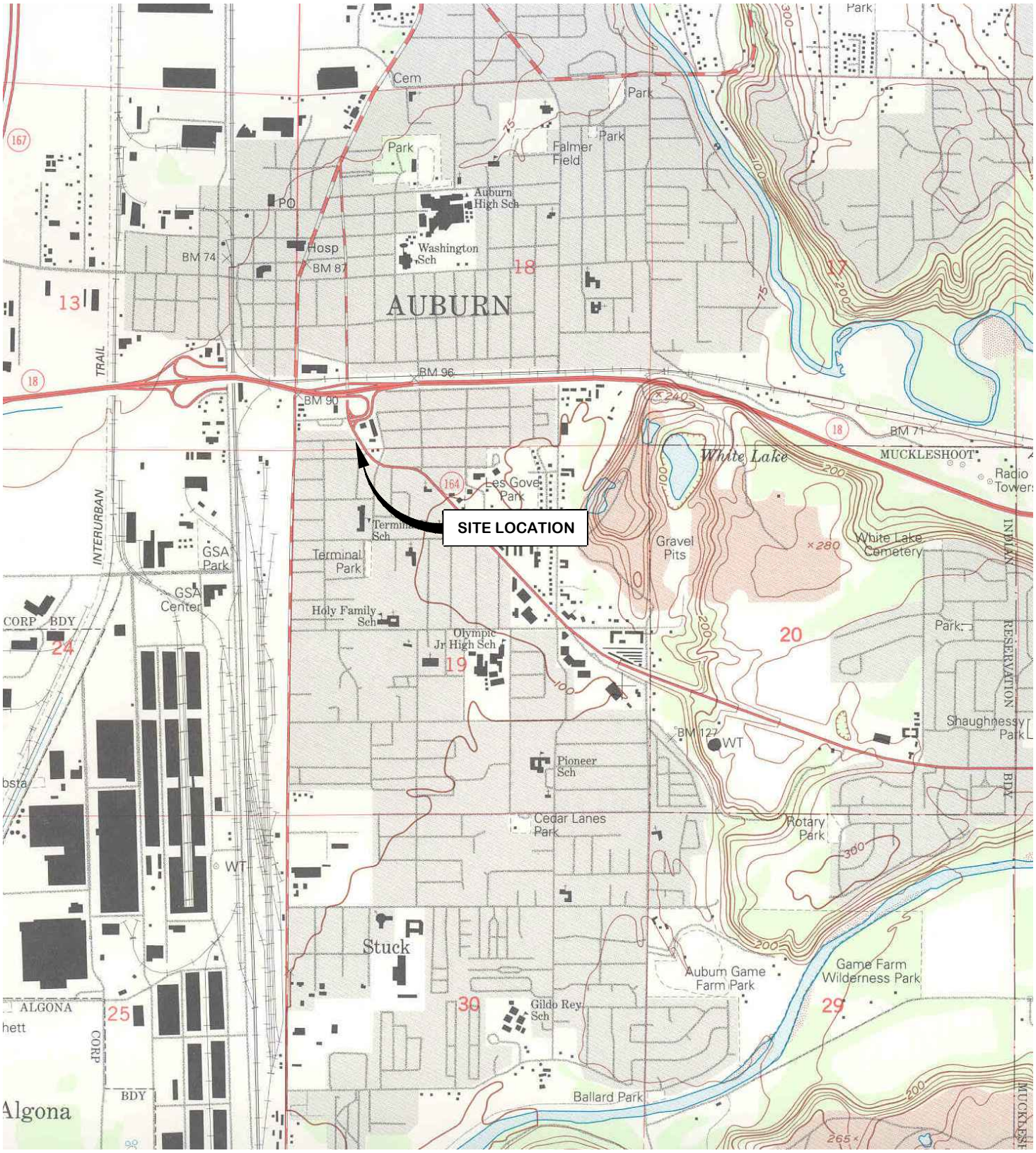
Washington State Department of Ecology (Ecology). 2018. *Final Cleanup Action Plan, CHS Auburn Site, 238 8th Street Southeast and Contiguous Areas, Auburn, Washington, Agreed Order No. 4033, Facility Site No. 2487.* May 8.

———. 2021. Email Message Regarding CHS Quarterly Progress Report 7/1 through 9/30/2021. From Jerome B. Cruz. To Javan Ruark, Farallon Consulting, L.L.C. October 20.

# FIGURES

THIRD AND FOURTH QUARTER 2021
GROUNDWATER MONITORING AND TREATMENT SYSTEM
OPERATION AND MAINTENANCE REPORT
CHS Auburn Site
Auburn, Washington

Farallon PN: 301-004




REFERENCE: 7.5 MINUTE USGS QUADRANGLE AUBURN, WASHINGTON. DATED 1949 AND PHOTOREVISED 1994

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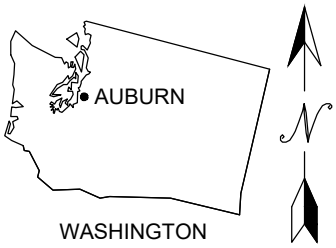


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# FIGURE 1

SITE VICINITY MAP
CHS AUBURN SITE
AUBURN, WASHINGTON

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STATE ROUTE - 18

AUBURN WAY SOUTH

6th STREET SOUTHEAST

7th STREET SOUTHEAST

8th STREET SOUTHEAST

FIRE HOUSE SQUARE

D STREET SOUTHEAST

C STREET SOUTHEAST

SCHUCKS

MCDONALD'S

THAI RESTAURANT

AS/SVE EQUIPMENT BUILDING

CSVE-9 WSIADA

BIG-O TIRES

CHS AUBURN FACILITY

CHS MAIN BUILDING

CMW-20 CMW-23 CMW-22 CMW-19 DAS-13 DAS-14 DSVE-15 DSVE-16 CMW-32 CMW-14 CMW-17 CMW-21 CMW-9 CMW-15 CMW-8 CMW-31 CMW-5 HMW-12 HMW-9 HMW-5 HMW-6 HMW-8 HMW-10 CMW-12 CRW-2 HMW-11 CMW-7 CAS-14 CAS-15 CAS-17 CAS-16 CMW-27 CAS-18 CAS-20 CMW-6 CMW-13 CMW-2 CAS-19 CAS-3 CAS-21 CAS-1 CSVE-1 CSVE-10 CMW-10 CAS-2 CRW-1 CMW-11 CSVE-7 CAS-12 CAS-22 CAS-4 CSVE-8 CAS-10 CAS-11 CAS-13 CSVE-4 CAS-5 CMW-25 CAS-8 CMW-28 CSVE-6 CAS-9 CAS-7 CSVE-5 HMW-13 CMW-4 CMW-29 CMW-26 CMW-3 CMW-1 CMW-30 CMW-24 HMW-14

0 100

APPROXIMATE SCALE IN FEET

LEGEND

| | |
|---|---|
| CMW-25 | CHS MONITORING WELL |
| CRW-2 | CHS RECOVERY WELL |
| HMW-13 | HILLMAN MONITORING WELL |
| CAS-13 | AS WELL AS/SVE CENTRAL SYSTEM |
| DAS-13 | AS WELL AS/SVE DOWN-GRADIENT SYSTEM (LOST) |
| CSVE-3 | SVE WELL AS/SVE CENTRAL SYSTEM |
| DSVE-16 | SVE WELL AS/SVE DOWN-GRADIENT SYSTEM (LOST) |
| CMW-9 | LOST OR ABANDONED MONITORING WELL |
| RED | NON-OPERATIONAL WELL |

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# FIGURE 2

SITE PLAN
CHS AUBURN SITE
AUBURN, WASHINGTON

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7th STREET SOUTHEAST

CRW–2

HMW–11

CAS–14

CAS–15

CAS–17

CAS–16

CAS–18

CMW–27

CSVE–9

AUBURN WAY SOUTH

CMW–13

WSIADA

CAS–20

CAS–19

CSVE–10

CAS–21

CMW–2

CAS–1

CSVE–1

CAS–2

CAS–3

CMW–10

CMW–11

CRW–1

CAS–22

CAS–12
CSVE–7

CAS–4

CAS–10
CSVE–8

CAS–11

CSVE–4

CAS–5

AS/SVE EQUIPMENT BUILDING

CAS–13

CMW–28

THAI
RESTAURANT

CMW–25

CAS–8

CAS–7

CSVE–5

CSVE–6
CAS–9

8th STREET SOUTHEAST

LEGEND

| | |
|---|---|
| CMW–25 | CHS MONITORING WELL |
| CRW–2 | CHS RECOVERY WELL |
| HMW–13 | HILLMAN MONITORING WELL |
| CAS–13 | AS WELL AS/SVE CENTRAL SYSTEM |
| CSVE–3 | SVE WELL AS/SVE CENTRAL SYSTEM |
| CAS–12 CSVE–7 | DUAL COMPLETION SVE AND AS SYSTEM WELL |
| RED | NON-OPERATIONAL WELL |

0 30

APPROXIMATE SCALE IN FEET

FIGURE PRODUCED IN COLOR. GRAYSCALE COPIES MAY NOT REPRODUCE ALL ORIGINAL INFORMATION

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# FIGURE 3

SITE PLAN SHOWING DETAIL OF THE
CENTRAL AREA OF THE SITE
CHS AUBURN SITE
AUBURN, WASHINGTON

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STATE ROUTE - 18

AUBURN WAY SOUTH

6th STREET SOUTHEAST

7th STREET SOUTHEAST

8th STREET SOUTHEAST

FIRE HOUSE SQUARE

SCHUCKS

MCDONALD'S

THAI RESTAURANT

AS/SVE EQUIPMENT BUILDING

BIG-O TIRES

CHS AUBURN FACILITY

CHS MAIN BUILDING

D STREET SOUTHEAST

C STREET SOUTHEAST

CMW-19
DAS-13
DAS-14
DSVE-15
DSVE-16
CMW-9
CMW-15
CMW-22
CMW-32
CMW-14
CMW-17
CMW-21
CMW-8 (67.71)
CMW-31 (67.84)
67.80
CMW-5
HMW-12
HMW-9 (67.89)
68.00
HMW-5
HMW-6
68.20
HMW-10 (68.10)
HMW-8
CMW-12 (68.25)
CRW-2
HMW-11
CMW-7
CAS-14
68.40
CAS-15
CAS-17
CAS-16
CMW-27 (68.42)
68.60
CAS-18
CMW-6
CMW-13 (68.35)
CSVE-9 WSIADA
CAS-20
68.80
CMW-2
CAS-19
CAS-3
CAS-1
CSVE-1
CSVE-10
(68.83)
CAS-21
CMW-10
CAS-2
CRW-1
CMW-11
CSVE-7
CAS-22
CAS-12
CAS-4
CSVE-8
CAS-11
CSVE-4
CAS-10
CAS-13
CAS-5
CMW-25
CAS-8
CMW-28 (68.68)
CSVE-6
CAS-9
CAS-7
CSVE-5
HMW-13 [68.82]*
CMW-4
CMW-29 (68.90)
CMW-26 (68.87)
69.00
CMW-3
CMW-1
CMW-30 (69.05)
CMW-24
HMW-14

## LEGEND

| | |
|---|---|
| CMW-26 | CHS MONITORING WELL |
| HMW-13 | HILLMAN MONITORING WELL |
| CAS-13 | AS WELL AS/SVE CENTRAL SYSTEM |
| CSVE-9 | SVE WELL |
| RED | NON-OPERATIONAL WELL |
| CRW-2 | CHS RECOVERY WELL |
| DAS-13 | AS WELL AS/SVE DOWN-GRADIENT SYSTEM (LOST) |
| DSVE-15 | SVE WELL AS/SVE DOWN-GRADIENT SYSTEM (LOST) |
| (69.05) | GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL |
| 68.00 | GROUNDWATER ELEVATION CONTOUR DASHED WHERE INFERRED |
| | APPROXIMATE DIRECTION OF GROUNDWATER FLOW |
| [68.82]* | GROUNDWATER ELEVATION NOT USED IN CONTOUR |

0 100

APPROXIMATE SCALE IN FEET

FIGURE PRODUCED IN COLOR. GRAYSCALE COPIES MAY NOT REPRODUCE ALL ORIGINAL INFORMATION

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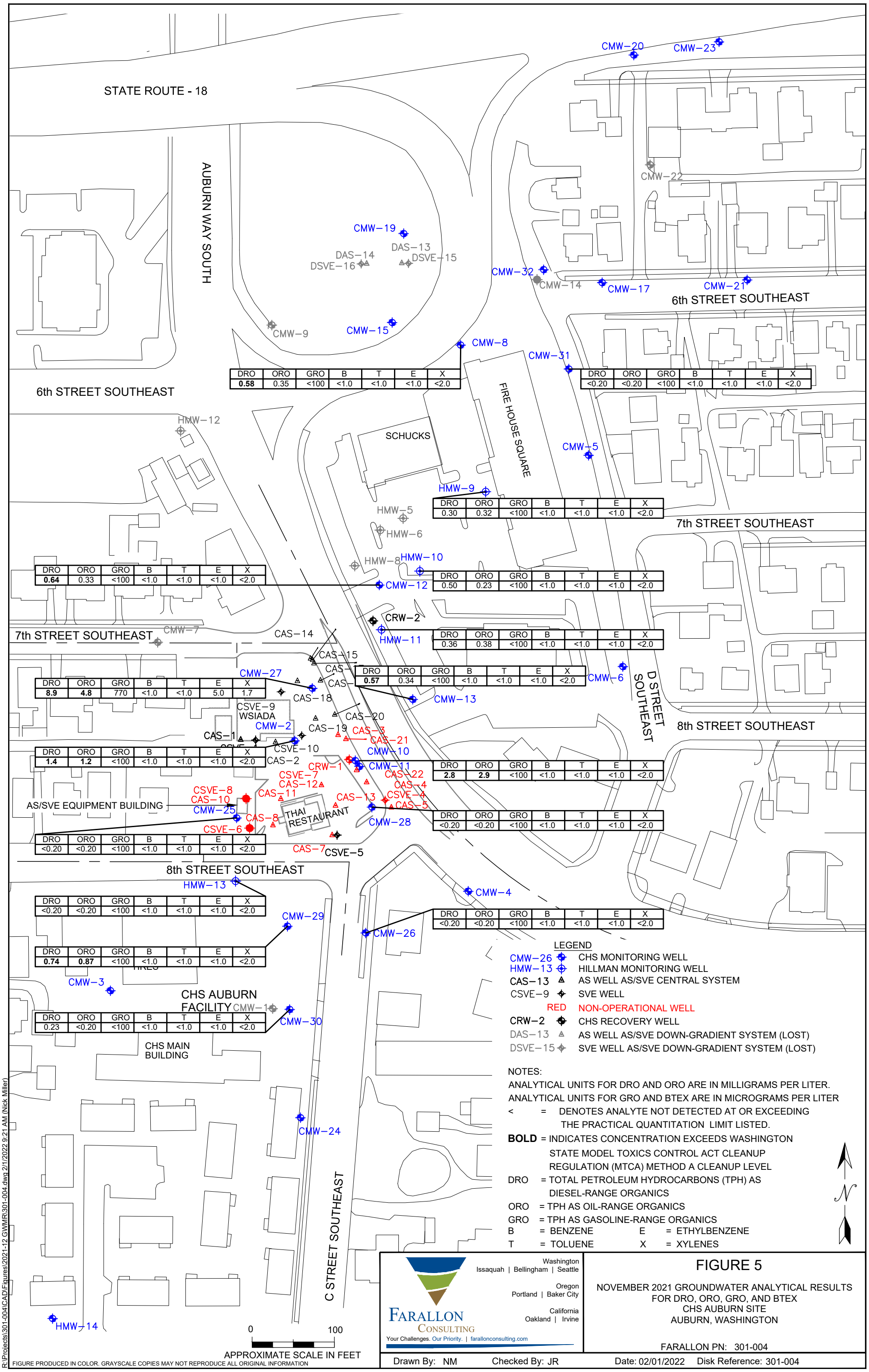
# FIGURE 4

GROUNDWATER ELEVATION CONTOUR MAP
NOVEMBER 2021
CHS AUBURN SITE
AUBURN, WASHINGTON

FARALLON PN: 301-004

Drawn By: NM Checked By: JR Date: 02/01/2022 Disk Reference: 301-004




| DRO | ORO | GRO | B | T | E | X |
|---|---|---|---|---|---|---|
| **0.58** | 0.35 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |

| DRO | ORO | GRO | B | T | E | X |
|---|---|---|---|---|---|---|
| <0.20 | <0.20 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |

| DRO | ORO | GRO | B | T | E | X |
|---|---|---|---|---|---|---|
| 0.30 | 0.32 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |

| DRO | ORO | GRO | B | T | E | X |
|---|---|---|---|---|---|---|
| **0.64** | 0.33 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |

| DRO | ORO | GRO | B | T | E | X |
|---|---|---|---|---|---|---|
| 0.50 | 0.23 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |

| DRO | ORO | GRO | B | T | E | X |
|---|---|---|---|---|---|---|
| 0.36 | 0.38 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |

| DRO | ORO | GRO | B | T | E | X |
|---|---|---|---|---|---|---|
| **0.57** | 0.34 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |

| DRO | ORO | GRO | B | T | E | X |
|---|---|---|---|---|---|---|
| **8.9** | **4.8** | 770 | <1.0 | <1.0 | 5.0 | 1.7 |

| DRO | ORO | GRO | B | T | E | X |
|---|---|---|---|---|---|---|
| **1.4** | **1.2** | <100 | <1.0 | <1.0 | <1.0 | <2.0 |

| DRO | ORO | GRO | B | T | E | X |
|---|---|---|---|---|---|---|
| **2.8** | **2.9** | <100 | <1.0 | <1.0 | <1.0 | <2.0 |

| DRO | ORO | GRO | B | T | E | X |
|---|---|---|---|---|---|---|
| <0.20 | <0.20 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |

| DRO | ORO | GRO | B | T | E | X |
|---|---|---|---|---|---|---|
| <0.20 | <0.20 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |

| DRO | ORO | GRO | B | T | E | X |
|---|---|---|---|---|---|---|
| <0.20 | <0.20 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |

| DRO | ORO | GRO | B | T | E | X |
|---|---|---|---|---|---|---|
| **0.74** | **0.87** | <100 | <1.0 | <1.0 | <1.0 | <2.0 |

| DRO | ORO | GRO | B | T | E | X |
|---|---|---|---|---|---|---|
| 0.23 | <0.20 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |

LEGEND

| | |
|---|---|
| CMW-26 | CHS MONITORING WELL |
| HMW-13 | HILLMAN MONITORING WELL |
| CAS-13 | AS WELL AS/SVE CENTRAL SYSTEM |
| CSVE-9 | SVE WELL |
| RED | NON-OPERATIONAL WELL |
| CRW-2 | CHS RECOVERY WELL |
| DAS-13 | AS WELL AS/SVE DOWN-GRADIENT SYSTEM (LOST) |
| DSVE-15 | SVE WELL AS/SVE DOWN-GRADIENT SYSTEM (LOST) |

NOTES:

ANALYTICAL UNITS FOR DRO AND ORO ARE IN MILLIGRAMS PER LITER.

ANALYTICAL UNITS FOR GRO AND BTEX ARE IN MICROGRAMS PER LITER

< = DENOTES ANALYTE NOT DETECTED AT OR EXCEEDING THE PRACTICAL QUANTITATION LIMIT LISTED.

**BOLD** = INDICATES CONCENTRATION EXCEEDS WASHINGTON STATE MODEL TOXICS CONTROL ACT CLEANUP REGULATION (MTCA) METHOD A CLEANUP LEVEL

DRO = TOTAL PETROLEUM HYDROCARBONS (TPH) AS DIESEL-RANGE ORGANICS

ORO = TPH AS OIL-RANGE ORGANICS

GRO = TPH AS GASOLINE-RANGE ORGANICS

B = BENZENE E = ETHYLBENZENE

T = TOLUENE X = XYLENES

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# FIGURE 5

NOVEMBER 2021 GROUNDWATER ANALYTICAL RESULTS
FOR DRO, ORO, GRO, AND BTEX
CHS AUBURN SITE
AUBURN, WASHINGTON

FARALLON PN: 301-004

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STATE ROUTE - 18

AUBURN WAY SOUTH

6th STREET SOUTHEAST

7th STREET SOUTHEAST

8th STREET SOUTHEAST

FIRE HOUSE SQUARE

D STREET SOUTHEAST

C STREET SOUTHEAST

SCHUCKS

MCDONALD'S

THAI RESTAURANT

WSIADA

AS/SVE EQUIPMENT BUILDING

CHS AUBURN FACILITY

CMW-20 CMW-23 CMW-22 CMW-19 DAS-14 DAS-13 DSVE-16 DSVE-15 CMW-32 CMW-14 CMW-17 CMW-21 CMW-9 CMW-15 CMW-8 CMW-31 CMW-5 HMW-12 HMW-9 HMW-6 HMW-8 HMW-10 CMW-12 CRW-2 HMW-11 CMW-7 CAS-14 CAS-15 CAS- CAS- CMW-27 CAS-18 CMW-6 CMW-13 CAS-20 CAS-19 CAS-3 CMW-2 CAS-1 CAS-21 CSVE-10 CMW-10 CAS-2 CRW-1 CMW-11 CSVE-7 CAS-22 CAS-12 CAS-4 CSVE-8 CAS-11 CAS-13 CSVE-4 CAS-10 CAS-5 CMW-25 CAS-8 CMW-28 CSVE-6 CAS-9 CAS-7 CSVE-5 HMW-13 CMW-4 CMW-29 CMW-26 CMW-3 CMW-1 CMW-30 CMW-24 HMW-14

| WITHOUT SILICA GEL | | WITH SILICA GEL | |
|---|---|---|---|
| DRO | ORO | DRO | ORO |
| **0.58** | 0.35 | <0.20 | <0.20 |

| WITHOUT SILICA GEL | | WITH SILICA GEL | |
|---|---|---|---|
| DRO | ORO | DRO | ORO |
| <0.20 | <0.20 | <0.20 | <0.20 |

| WITHOUT SILICA GEL | | WITH SILICA GEL | |
|---|---|---|---|
| DRO | ORO | DRO | ORO |
| 0.30 | 0.32 | <0.21 | <0.21 |

| WITHOUT SILICA GEL | | WITH SILICA GEL | |
|---|---|---|---|
| DRO | ORO | DRO | ORO |
| 0.50 | 0.23 | <0.20 | <0.20 |

| WITHOUT SILICA GEL | | WITH SILICA GEL | |
|---|---|---|---|
| DRO | ORO | DRO | ORO |
| **0.64** | 0.33 | <0.20 | <0.20 |

| WITHOUT SILICA GEL | | WITH SILICA GEL | |
|---|---|---|---|
| DRO | ORO | DRO | ORO |
| 0.36 | 0.38 | <0.20 | <0.20 |

| WITHOUT SILICA GEL | | WITH SILICA GEL | |
|---|---|---|---|
| DRO | ORO | DRO | ORO |
| **0.57** | 0.34 | <0.21 | <0.21 |

| WITHOUT SILICA GEL | | WITH SILICA GEL | |
|---|---|---|---|
| DRO | ORO | DRO | ORO |
| **8.9** | **4.8** | **0.88** | <0.21 |

| WITHOUT SILICA GEL | | WITH SILICA GEL | |
|---|---|---|---|
| DRO | ORO | DRO | ORO |
| **1.4** | **1.2** | <0.20 | <0.20 |

| WITHOUT SILICA GEL | | WITH SILICA GEL | |
|---|---|---|---|
| DRO | ORO | DRO | ORO |
| **2.8** | **2.9** | <0.20 | <0.20 |

| WITHOUT SILICA GEL | | WITH SILICA GEL | |
|---|---|---|---|
| DRO | ORO | DRO | ORO |
| <0.20 | <0.20 | <0.20 | <0.20 |

| WITHOUT SILICA GEL | | WITH SILICA GEL | |
|---|---|---|---|
| DRO | ORO | DRO | ORO |
| <0.20 | <0.20 | <0.20 | <0.20 |

| WITHOUT SILICA GEL | | WITH SILICA GEL | |
|---|---|---|---|
| DRO | ORO | DRO | ORO |
| <0.20 | <0.20 | <0.20 | <0.20 |

| WITHOUT SILICA GEL | | WITH SILICA GEL | |
|---|---|---|---|
| DRO | ORO | DRO | ORO |
| **0.74** | **0.87** | <0.20 | <0.20 |

| WITHOUT SILICA GEL | | WITH SILICA GEL | |
|---|---|---|---|
| DRO | ORO | DRO | ORO |
| 0.23 | <0.20 | <0.20 | <0.20 |

LEGEND

| | |
|---|---|
| CMW-26 | CHS MONITORING WELL |
| HMW-13 | HILLMAN MONITORING WELL |
| CAS-13 | AS WELL AS/SVE CENTRAL SYSTEM |
| CSVE-9 | SVE WELL |
| RED | NON-OPERATIONAL WELL |
| CRW-2 | CHS RECOVERY WELL |
| DAS-13 | AS WELL AS/SVE DOWN-GRADIENT SYSTEM (LOST) |
| DSVE-15 | SVE WELL AS/SVE DOWN-GRADIENT SYSTEM (LOST) |

NOTES:

ANALYTICAL UNITS FOR DRO AND ORO ARE IN MILLIGRAMS PER LITER.

< = DENOTES ANALYTE NOT DETECTED AT OR EXCEEDING THE LABORATORY REPORTING LIMIT LISTED.

**BOLD** = INDICATES CONCENTRATION EXCEEDS WASHINGTON STATE MODEL TOXICS CONTROL ACT CLEANUP REGULATION (MTCA) METHOD A CLEANUP LEVEL

DRO = TOTAL PETROLEUM HYDROCARBONS (TPH) AS DIESEL-RANGE ORGANICS

ORO = TPH AS OIL-RANGE ORGANICS

0 100

APPROXIMATE SCALE IN FEET

FIGURE PRODUCED IN COLOR. GRAYSCALE COPIES MAY NOT REPRODUCE ALL ORIGINAL INFORMATION

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# FIGURE 6

NOVEMBER 2021 GROUNDWATER ANALYTICAL RESULTS FOR DRO AND ORO WITH AND WITHOUT ACID-SILICA GEL CLEANUP PROCEDURE
CHS AUBURN SITE
AUBURN, WASHINGTON

FARALLON PN: 301-004

Drawn By: NM Checked By: JR Date: 02/01/2022 Disk Reference: 301-004

# TABLES

THIRD AND FOURTH QUARTER 2021
GROUNDWATER MONITORING AND TREATMENT SYSTEM
OPERATION AND MAINTENANCE REPORT
CHS Auburn Site
Auburn, Washington

Farallon PN: 301-004

**Table 1**
**Soil Vapor Extraction System and Well Data**
**CHS Auburn Site**
**Auburn, Washington**
**Farallon PN: 301-004**

| Date | Time | System Vacuum, pre-KO (IOW) | System Vacuum, post-KO (IOW) | System Flow Rate, Stack (dp) | System Flow Rate, Stack (SCFM) | Total Blower Run Time (hours) | Blower Running (Amps) | Blower Frequency (Hz) | Blower Effluent Temperature (F) | VOC Concentration, Vent Stack (ppm) | CSVE-1 | | | | CSVE-5 | | | | CSVE-7 | | | | CSVE-9 | | | | CSVE-10 | | | | Benzene Analytical Results ($\mu g/m^3$) | Benzene Analytical Results (nl/ml) | Benzene Concentration[1] ($mg/m^3$) | Benzene Removal Rate[2] (lbs/day) | Amount of Benzene Removed Between Testing[3] (lbs) | Total Amount of Benzene Removed to Date[4] (lbs) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | Well Vacuum (IOW) | Flow Rate (dp) | Flow Rate (SCFM) | PID Reading (ppm) | Well Vacuum (IOW) | Flow Rate (dp) | Flow Rate (SCFM) | PID Reading (ppm) | Well Vacuum (IOW) | Flow Rate (dp) | Flow Rate (SCFM) | PID Reading (ppm) | Well Vacuum (IOW) | Flow Rate (dp) | Flow Rate (SCFM) | PID Reading (ppm) | Well Vacuum (IOW) | Flow Rate (dp) | Flow Rate[3] (SCFM) | PID Reading (ppm) | | | | | | |
| 5/29/2019 | 1210 | 6.0 | -- | 0.32 | 133 | -- | -- | -- | -- | 130 | 6.0 | 0.157 | 23.46 | 62 | 6.0 | 0.355 | 35.28 | 50 | 6.0 | 0.015 | 7.25 | 250 | 6.0 | 0.204 | 26.75 | 35 | 5.6 | 0.315 | 33.23 | 1.2 | - | - | - | - | - | - |
| | 1240 | 6.0 | -- | 0.32 | 133 | -- | -- | -- | -- | 32 | 5.8 | 0.21 | 27.14 | 42 | 5.6 | 0.33 | 34.02 | 17.9 | 6.0 | 0.023 | 8.98 | 110 | 6.0 | 0.210 | 27.14 | 24 | 6.0 | 0.340 | 34.53 | 1.0 | - | - | - | - | - | - |
| | 1400 | 5.8 | -- | 0.306 | 130 | -- | -- | -- | -- | 18.5 | 5.8 | 0.21 | 27.14 | 30.2 | 5.9 | 0.41 | 37.92 | 4.8 | 6.0 | 0.032 | 10.6 | 44 | 6.0 | 0.190 | 25.81 | 19.5 | 5.2 | 0.320 | 33.50 | 1.3 | - | - | - | - | - | - |
| | 1500 | 5.9 | -- | 0.32 | 133 | -- | -- | -- | -- | 23 | 5.2 | 0.21 | 27.14 | 21 | 5.5 | 0.37 | 36.02 | 4 | 5.4 | 0.020 | 8.37 | 16 | 5.7 | 0.200 | 26.48 | 95 | 6.0 | 0.330 | 34.02 | 1.4 | - | <0.31 | 0.49 | 0.006 | - | - |
| 6/13/2019 | 1415 | -- | 0.1 | -- | -- | 87 | 2.7 | 50 | -- | 14 | 8.5 | 0.21 | 27.1 | 3.2 | 5.0 | 0.32 | 33.5 | 1.8 | 4.1 | 0.050 | 13.24 | 0.1 | 4.7 | 0.200 | 26.50 | 56 | 5.0 | 0.320 | 33.50 | 1.4 | - | - | - | - | - | - |
| 6/24/2019 | -- | -- | -- | -- | 130[1] | 351 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | - | 0.72 | 2.30 | 0.269 | 2.01 | 2.01 |
| 7/16/2019 | -- | -- | -- | -- | -- | 440 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | - | - | - | - | - | - |
| 7/18/2019 | 1540 | 3.8 | -- | 0.31 | 131 | 498 | 2.7 | 50 | 95 | 44 | 3.4 | 0.10 | 18.73 | 0.3 | 3.2 | 0.38 | 36.5 | 5.8 | 3.3 | 0.160 | 23.69 | 34.4 | 3.5 | 0.110 | 19.64 | 165 | 3.4 | 0.160 | 23.69 | 48.1 | 0.578 | - | 0.0006 | 0.00001 | 0.821 | 2.8297 |
| 8/23/2019 | 1130 | 4.4 | -- | 0.32 | 128 | 643 | 2.8 | 50 | 95 | 21 | 4.0 | 0.16 | 23.12 | 87.7 | 3.8 | 0.53 | 42.3 | 6.1 | 4.1 | 0.020 | 8.20 | 7.3 | 4.2 | 0.143 | 21.92 | 12.5 | 4.0 | 0.239 | 28.35 | 0.0 | 0.372 | - | 0.0004 | 0.00000 | 0.000 | 2.8297 |
| 9/18/2019 | 945 | 4.2 | -- | 0.25 | 114 | 769 | 2.7 | 50 | -- | 3.7 | 3.8 | 0.16 | 23.35 | 19.2 | 3.6 | 0.44 | 39.11 | 0.9 | 3.9 | 0.025 | 9.32 | 1.0 | 3.9 | 0.145 | 22.44 | 1.2 | 3.8 | 0.246 | 29.23 | 0.0 | - | - | - | - | - | - |
| 9/23/2019 | 930 | 4.8 | -- | 0.26 | 117 | 887 | 2.7 | 50 | 90 | 71.9 | 4.3 | 0.18 | 24.78 | 32.2 | 4.1 | 0.58 | 45.02 | 2.8 | 4.5 | 0.032 | 10.53 | 181 | 4.5 | 0.166 | 23.99 | 235.2 | 4.5 | 0.165 | 23.92 | 33.9 | <0.286 | - | 0.0001 | 0.00000 | 0.00003 | 2.8298 |
| 10/22/2019 | 1120 | 13.1 | -- | 0.29 | 122 | 1585 | 2.9 | 50 | 90 | 23.8 | 13.0 | 0.22 | 27.27 | 12.8 | 11.9 | 1.48 | 71.03 | 2.8 | 12.3 | 0.129 | 20.94 | 121 | 12.5 | 0.039 | 11.51 | 20.7 | 13.1 | 0.004 | 3.68 | 0.4 | <2.86 | - | 0.0014 | 0.00002 | 0.00025 | 2.8300 |
| 11/27/2019 | 1045 | 17.4 | -- | 0.18 | 97 | 2237 | 3.0 | 50 | 80 | 1.3 | 14.5 | 0.25 | 29.13 | 2.7 | 14.3 | 2.17 | 85.59 | 0.4 | 14.2 | 0.123 | 20.40 | 1.1 | 17.3 | 0.004 | 3.66 | 0.8 | 16.7 | 0.022 | 8.60 | 0.4 | - | - | - | - | - | - |
| 12/18/2019 | 1010 | 10.2 | -- | 0.17 | 95 | 2280 | 2.3 | 40 | -- | 0.6 | 10.3 | 0.03 | 10.46 | 0.1 | 9.8 | 1.5 | 71.65 | 0.1 | 10.4 | 0.018 | 7.84 | 0.1 | 10.9 | 0.003 | 3.20 | 0.1 | 10.2 | 0.005 | 4.13 | 0.1 | <0.286 | - | 0.0001 | 0.00000 | 0.00025 | 2.8303 |
| 2/4/2020 | 1000 | 16.8 | -- | 0.12 | 82 | 3432 | 2.4 | 40 | -- | -- | 16.2 | 0.41 | 37.15 | -- | 15.7 | 0.7 | 47.53 | -- | 17.2 | 0.003 | 3.17 | -- | 16.4 | 0.000 | 0.00 | -- | 17.1 | 0.003 | 3.17 | -- | <0.286 | - | 0.0001 | 0.00000 | 0.00005 | 2.8303 |
| 2/21/2020 | 1200 | -- | -- | -- | -- | 3842 | 2.7 | 40 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | - | - | - | - | - | - |
| 2/26/2020 | 930 | 28.8 | -- | 0.06 | 57 | 3842 | 2.7 | 40 | 80 | 0.1 | 24.8 | 0.27 | 29.84 | 0.0 | 27.3 | 0.021 | 8.29 | 0.0 | 27.5 | 0.070 | 15.14 | 0.0 | 27.2 | 0.101 | 18.18 | 0.3 | 27.4 | 0.010 | 5.72 | 0.2 | - | - | - | - | - | - |
| 4/1/2020 | 910 | 11.9 | -- | 0.14 | 85 | 4680 | 2.3 | 40 | 75 | 0.2 | 11.4 | 2.46 | 91.64 | 0.1 | 10.4 | 0.612 | 45.73 | 0.2 | 11.5 | 0.067 | 15.11 | 0.1 | 11.5 | 0.832 | 53.24 | 0.1 | 11.7 | 0.081 | 16.61 | 0.1 | <0.286 | - | 0.0001 | 0.00000 | 0.00006 | 2.8304 |
| 5/7/2020 | 820 | 7.8 | -- | 0.19 | 101 | 5450 | 2.2 | 40 | 80.5 | 0.0 | 7.2 | 0.26 | 29.93 | 0.3 | 7.1 | 1.03 | 59.57 | 0.2 | 7.0 | 0.003 | 3.22 | 0.3 | 7.7 | 0.007 | 4.91 | 0.2 | 7.4 | 0.000 | 0.00 | 0.3 | <0.286 | - | 0.0001 | 0.00000 | 0.00004 | 2.8304 |
| 6/2/2020 | 852 | 5.9 | -- | 0.20 | 102 | 6011 | 2.2 | 40 | -- | 0.0 | 5.6 | 0.22 | 27.52 | 0.0 | 5.2 | 0.75 | 50.89 | 0.0 | 6.5 | 0.013 | 6.70 | 0.0 | 5.8 | 0.113 | 19.76 | 0.2 | 6.0 | 0.003 | 3.22 | 0.0 | <0.286 | - | 0.0001 | 0.00000 | 0.00003 | 2.8304 |
| 7/31/2020 | 1200 | 5.0 | -- | 0.20 | 102 | 7175 | 2.2 | 40 | -- | 0.0 | 4.6 | 0.19 | 25.46 | 0.0 | 4.3 | 0.70 | 49.32 | 0.0 | 4.8 | 0.000 | 0.00 | 0.0 | 4.7 | 0.182 | 25.12 | 0.0 | 4.8 | 0.000 | 0.00 | 0.0 | - | - | - | - | - | - |
| 8/5/2020 | 1100 | 4.8 | -- | 0.20 | 103 | 7179 | 2.2 | 40 | -- | -- | 4.5 | 0.19 | 25.31 | -- | 4.1 | 0.70 | 48.61 | -- | 4.7 | 0.000 | 5.01 | -- | 4.6 | 0.19 | 25.30 | -- | 4.7 | 0.000 | 4.78 | -- | - | - | - | - | - | - |
| 10/2/2020 | 1245 | 5.1 | -- | 0.21 | 105 | 8293 | 2.2 | 40 | 85 | 1.9 | 4.8 | 0.19 | 25.46 | 8.4 | 4.5 | 0.75 | 51.10 | 0.2 | 5.0 | 0.000 | 6.41 | 0.0 | 4.9 | 0.17 | 24.41 | 0.1 | 5.0 | 0.000 | 6.06 | 0.1 | - | - | - | - | - | - |
| 11/6/2020 | 900 | 11.7 | -- | 0.17 | 94 | 9129 | 2.3 | 40 | 78 | 0.9 | 10.9 | 0.09 | 16.95 | 2.5 | 9.7 | 1.44 | 69.87 | 0.0 | 10.9 | 0.000 | 12.98 | 0.0 | 11.5 | 0.03 | 9.72 | 0.0 | 10.9 | 0.000 | 13.34 | 0.0 | - | - | 0.0001 | 0.00000 | 0.00016 | 2.8306 |
| 12/9/2020 | 1309 | 13.5 | -- | 0.15 | 90 | 9775 | 2.4 | 40 | 77.9 | 0.7 | 13.9 | 0.06 | 14.38 | 0.1 | 12.3 | 1.66 | 76.28 | 0.5 | 12.8 | 0.000 | 14.61 | 0.1 | 13.8 | 0.00 | 15.03 | 0.2 | 12.9 | 0.000 | 14.19 | 0.1 | - | - | - | - | - | - |
| 1/7/2021 | 1049 | 14.9 | -- | 0.185 | 99 | 10314 | 2.4 | 40 | -- | 0.1 | 13.8 | 0.14 | 21.78 | 1.1 | 13.2 | 1.66 | 75.05 | 0.0 | 14.4 | 0.000 | -- | 0.0 | 14.2 | 0.0 | -- | 0.0 | 14.6 | 0.000 | -- | 0.0 | - | - | - | - | - | - |
| 3/2/2021 | 1400 | 18.9 | -- | 0.077 | 64 | 11602 | 2.5 | 40 | -- | 0.0 | 17.8 | 0.22 | 26.91 | 0.0 | 17.0 | 0.611 | 45.31 | 0.0 | 18.3 | 0.000 | 18.53 | 0.0 | 17.8 | 0.000 | 18.04 | 0.1 | 18.2 | 0.000 | 18.78 | 0.2 | <0.319 | - | 0.0002 | 0.00000 | 0.00011 | 2.8307 |
| 4/7/2021 | 930 | 10.1 | -- | 0.112 | 80 | 12460 | 2.3 | 40 | 63.4 | 0 | 9.8 | 0.20 | 26.36 | 0.0 | 9.1 | 1.216 | 64.56 | 0.1 | 10.0 | 0.000 | 5.80 | 0.0 | 10.2 | 0.0 | 6.2 | 0.0 | 10.2 | 0.000 | 5.92 | 0.0 | - | - | - | - | - | - |
| 5/17/2021 | 930 | 8.1 | -- | 0.115 | 78 | 13393 | 2.2 | 40 | 69 | 0 | 7.5 | 0.32 | 33.19 | 0.0 | 7.1 | 1.02 | 59.28 | 0.0 | 7.8 | 0.000 | 4.78 | 0.0 | 8.1 | 0.0 | 4.85 | 0.0 | 8.0 | 0.000 | 4.68 | 0.0 | <2.6 | - | 0.0013 | 0.00001 | 0.00038 | 2.8311 |
| 6/15/2021 | 1100 | 7.9 | -- | 0.111 | 77 | 13834 | 2.2 | 40 | 75.1 | 0.1 | 7.4 | 0.32 | 32.93 | 0.0 | 7.0 | 1.015 | 59.14 | 0.0 | 7.7 | 0.000 | 4.66 | 0.0 | 7.8 | 0.0 | 4.57 | 0.0 | 7.8 | 0.007 | 4.91 | 0.0 | <5.8 | - | 0.0029 | 0.00002 | 0.00027 | 2.8314 |

# Table 1
# Soil Vapor Extraction System and Well Data
# CHS Auburn Site
# Auburn, Washington
# Farallon PN: 301-004

| | | | | | | | | | | | CSVE-1 | | | | CSVE-5 | | | | CSVE-7 | | | | CSVE-9 | | | | CSVE-10 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Date | Time | System Vacuum, pre-KO (IOW) | System Vacuum, post-KO (IOW) | System Flow Rate, Stack (dp) | System Flow Rate, Stack (SCFM) | Total Blower Run Time (hours) | Blower Running (Amps) | Blower Frequency (Hz) | Blower Effluent Temperature (F) | VOC Concentration, Vent Stack (ppm) | Well Vacuum (IOW) | Flow Rate (dp) | Flow Rate (SCFM) | PID Reading (ppm) | Well Vacuum (IOW) | Flow Rate (dp) | Flow Rate (SCFM) | PID Reading (ppm) | Well Vacuum (IOW) | Flow Rate (dp) | Flow Rate (SCFM) | PID Reading (ppm) | Well Vacuum (IOW) | Flow Rate (dp) | Flow Rate (SCFM) | PID Reading (ppm) | Well Vacuum (IOW) | Flow Rate (dp) | Flow Rate (SCFM) | PID Reading (ppm) | Benzene Analytical Results ($\mu g/m^3$) | Benzene Analytical Results (nl/ml) | Benzene Concentration[1] ($mg/m^3$) | Benzene Removal Rate[2] (lbs/day) | Amount of Benzene Removed Between Testing[3] (lbs) | Total Amount of Benzene Removed to Date[4] (lbs) |
| 8/25/2021 | 1240 | 7.9 | -- | 0.133 | 85 | 14237 | 2.2 | 40 | -- | 1.3 | 7.3 | 0.33 | 33.86 | 3.2 | 6.9 | 1.074 | 60.85 | 0.2 | 7.7 | 0.000 | -- | 0.0 | 7.8 | 0.0 | -- | 0.0 | 7.8 | 0.000 | -- | 0.0 | | - | 0.0010 | 0.00001 | 0.00023 | 2.8316 |
| 10/13/2021 | 1205 | 11.4 | -- | 0.135 | 85 | 15268 | 2.3 | 40 | 80.9 | 2 | 10.9 | 0.12 | 20.07 | 3.9 | 10.1 | 1.411 | 69.46 | 0.0 | 11.1 | 0.000 | 17.00 | 0.0 | 11.2 | 0.0 | 21.09 | 0.0 | 11.2 | 0.000 | 35.2 | 0.0 | - | - | - | - | - | - |
| 11/16/2021 | 1237 | - | - | - | - | 15985 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 1/3/2022 | 1330 | 16.5 | -- | 0.119 | 79 | 16682 | 2.4 | 40 | 77.1 | 0 | 16.2 | 0.05 | 12.71 | 0.2 | 14.7 | 1.553 | 72.45 | 0.2 | 15.5 | 0.000 | 16.22 | 0.2 | 15.9 | 0.0 | 15.96 | 0.2 | 16.0 | 0.000 | 17.52 | 0.1 | - | | | | | |

NOTES:

[1]flow rate not measured, assumed value for performance calculation.

-- denotes not collected

CALCULATIONS:

[1] Benzene concentration ($mg/m^3$) = either µg/l = $mg/m^3$ or (ppmv)*3.19.

[2] Benzene removal rate (lbs/day) = (Flow rate scfm)*(Benzene concentration $mg/m^3$)*(1/35.3 m3/$ft^3$)*(1440 minutes/day)*(1/453592.4 lbs/mg).

[3] Benzene removed (lbs) = average (Benzene removal rate lbs/day)*(operating hours between sampling events)(1 day/24 hours).

[4] Total Amount Removed to Date (lbs) = Previous Total Amount Removed + Amount Removed Between Sampling Events.

dp = differential pressure
F = degrees Fahrenheit
$ft^3$ = cubic feet
Hz = hertz
IOW = inches of water
l = liter
lbs = pounds
KO = knockout
$m^3$ = cubic meters
µg = microgram
mg = milligrams
ml - milliliter
nl = nanoliter
ppm = parts per million measured by photoionization detector (PID) calibrated using isobutylene span gas
ppmv = parts per million volume
SCFM = standard cubic feet per minute
SVE = soil vapor extraction
VOC = volatile organic compound

**Table 2**
**Air Sparge System and Well Data**
**CHS Auburn Site**
**Auburn, Washington**
**Farallon PN: 301-004**

| Date | Time | Compressor Total Run Time (hrs) | Compressor Running Amps | Compressor Frequency (Hz) | Pre-Cooling Temperature (F) | Post-Cooling Temperature (F) | System Pressure (psi) | CAS-1 | | CAS-2 | | CAS-3 | | CAS-4 | | CAS-5 | | CAS-7 | | CAS-12 | | CAS-14 | | CAS-15 | | CAS-16 | | CAS-17 | | CAS-18 | | CAS-19 | | CAS-20 | | CAS-21 | | CAS-22 | | TOTAL Flow Rate (SCFM) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Well Pressure (psi) | Flow Rate (SCFM) | Well Pressure (psi) | Flow Rate (SCFM) | Well Pressure (psi) | Flow Rate (SCFM) | Well Pressure (psi) | Flow Rate (SCFM) | Well Pressure (psi) | Flow Rate (SCFM) | Well Pressure (psi) | Flow Rate (SCFM) | Well Pressure (psi) | Flow Rate (SCFM) | Well Pressure (psi) | Flow Rate (SCFM) | Well Pressure (psi) | Flow Rate (SCFM) | Well Pressure (psi) | Flow Rate (SCFM) | Well Pressure (psi) | Flow Rate (SCFM) | Well Pressure (psi) | Flow Rate (SCFM) | Well Pressure (psi) | Flow Rate (SCFM) | Well Pressure (psi) | Flow Rate (SCFM) | Well Pressure (psi) | Flow Rate (SCFM) | |
| 5/29/2019 | 1415 | -- | -- | -- | 152 | 105 | 9.2 | 0.0 | 2.8 | 9.9 | 0.8 | 8.3 | 0.9 | 9.8 | 0.0 | 8.9 | 0.0 | 3.0 | 3.1 | 10.3 | 0.0 | 9.1 | 6.2 | 8.2 | 2.9 | 8.9 | 3.2 | 9.9 | 0.0 | 9.0 | 3.7 | 6.7 | 3.2 | 5.9 | 2.9 | 6.8 | 3.1 | 8.1 | 3.0 | 35.8 |
| | 1600 | -- | -- | -- | -- | -- | -- | 8.9 | 0.6 | 9.1 | 0.8 | 7.7 | 2.8 | 9.3 | 0.7 | 8.0 | 3.1 | 3.0 | 3.0 | 10.2 | 0.6 | 6.0 | 3 | 7.0 | 2.9 | 7.7 | 3.3 | 9.1 | 0.8 | 6.2 | 3.1 | 5.5 | 3.2 | 4.0 | 3.1 | 5.5 | 3.0 | 7.0 | 3.4 | 37.4 |
| 6/13/2019 | 1415 | 70.0 | 8.3 | 60 | -- | -- | 9.0 | 9.2 | 0.0 | 9.2 | 0.0 | 5.3 | 3.3 | 9 | 3 | 7.5 | 3 | 9.5 | 1.7 | 0.0 | 0.0 | 5.2 | 2.9 | 6.8 | 2.5 | 7.1 | 2.9 | 9.2 | 1.2 | 5.9 | 3.2 | 5 | 3 | 4.3 | 2.9 | 5.3 | 2.4 | 6.9 | 3.0 | 35.0 |
| 7/18/2019 | 1540 | 496.0 | 8.3 | 60 | 160 | 120 | 10.0 | 8.9 | 0.0 | 9.0 | 0.0 | 7.1 | 3.1 | 9.0 | 3.3 | 7.5 | 2.9 | 9.1 | 2.3 | 0.0 | 0.0 | 5.0 | 2.5 | 6.8 | 2.7 | 7.0 | 2.9 | 9.7 | 1.7 | 5.0 | 2.9 | 4.5 | 3.0 | 4.2 | 3.0 | 5.0 | 2.4 | 7.0 | 2.5 | 35.2 |
| 7/19/2019 | 1230 | 517.8 | 8.3 | 60 | 155 | 110 | 10.9 | 9.8 | 0.0 | 9.0 | 0.0 | 8.0 | 3.1 | 9.0 | 3.7 | 8.0 | 2.9 | 10.9 | 2.8 | 0.0 | 0.0 | 5.5 | 2.6 | 7.0 | 2.7 | 7.2 | 3.0 | 9.7 | 1.7 | 5.9 | 3.0 | 5.0 | 3.0 | 5.0 | 3.1 | 5.4 | 2.4 | 7.0 | 2.5 | 36.5 |
| 8/23/2019 | 1130 | 641.0 | 8.5 | 60 | 155 | 114 | 10.2 | 9.6 | 0.0 | 9.0 | 0.0 | 7.8 | 2.9 | 9.0 | 2.3 | 7.9 | 3.0 | 10.1 | 3.4 | 10.0 | 0.0 | 5.1 | 2.5 | 7.0 | 2.8 | 7.1 | 2.9 | 9.1 | 1.7 | 5.7 | 3.0 | 4.9 | 3.0 | 5.0 | 3.1 | 5.2 | 2.4 | 7.0 | 2.7 | 35.7 |
| 9/18/2019 | 1005 | 766.8 | 8.3 | 60 | 145 | 105 | 11.2 | 10.0 | 0.0 | 9.0 | 0.0 | 8.1 | 3.4 | 9.0 | 2.6 | 8.3 | 3.5 | 10.1 | 3.7 | 10.0 | 0.0 | 5.7 | 2.6 | 7.1 | 2.9 | 7.5 | 3.1 | 9.6 | 2.2 | 6.1 | 3.1 | 5.2 | 3.1 | 5.3 | 2.9 | 5.8 | 2.2 | 7.8 | 0.0 | 35.3 |
| 9/23/2019 | 1030 | 885.1 | 8.3 | 60 | 147 | 104 | 11.4 | 10.0 | 0.0 | 9.0 | 0.0 | 8.4 | 3.5 | 9.1 | 3.0 | 8.6 | 2.9 | 10.1 | 3.2 | 10.0 | 0.0 | 5.9 | 2.7 | 7.2 | 2.8 | 7.7 | 3.2 | 9.9 | 2.3 | 6.0 | 3.1 | 5.2 | 3.1 | 5.5 | 2.9 | 5.9 | 2.3 | 7.4 | 0.0 | 35.0 |
| 10/22/2019 | 1205 | 1583 | 8.3 | 60 | 147 | 105 | 12.2 | 10.5 | 0.0 | 9.1 | 0.0 | 9.1 | 3.5 | 9.8 | 3.2 | 9.0 | 3.4 | 10.2 | 3.2 | 10.0 | 0.0 | 6.2 | 2.6 | 8.0 | 2.9 | 8.2 | 3.1 | 10.1 | 2.4 | 7.0 | 3.0 | 6.0 | 3.1 | 6.2 | 2.8 | 6.0 | 2.2 | 8.0 | 2.6 | 38.0 |
| | 1355 | -- | -- | -- | -- | -- | -- | Closed | | 9.1 | 2.9 | 9.0 | 2.9 | 9.7 | 2.8 | 9.0 | 3.4 | 10.2 | 2.4 | 10.2 | 1.6 | 6.2 | 2.5 | 8.0 | 2.9 | 8.1 | 3.0 | 10.0 | 2.4 | 7.0 | 3.0 | 6.0 | 3.0 | 6.1 | 2.8 | 6.0 | 2.2 | 8.0 | 2.6 | 40.4 |
| 11/27/2019 | 1045 | 2235 | 8.6 | 60 | 95 | 55 | 14.7 | Closed | | 10.8 | 3.3 | 11.0 | 3.2 | 11.0 | 2.7 | 11.1 | 3.1 | 10.8 | 1.9 | 10.6 | 1.9 | 8.0 | 2.6 | 9.7 | 2.7 | 9.8 | 3.0 | 11.2 | 1.6 | 9.0 | 3.0 | 8.0 | 2.8 | 8.9 | 2.8 | 7.5 | 1.9 | 9.9 | 2.7 | 39.2 |
| 12/18/2019 | 1010 | 2278 | 8.3 | 60 | 135 | 92 | 12.0 | Closed | | 9.9 | 3.5 | 10.0 | 3.5 | 10.5 | 2.8 | 10.1 | 3.1 | 11.0 | 1.2 | 10.6 | 1.9 | 7.1 | 2.7 | 9.0 | 2.8 | 9.0 | 3.2 | 11.0 | 1.9 | 8.0 | 3.1 | 7.0 | 2.8 | 7.1 | 2.8 | 6.9 | 1.9 | 8.9 | 2.7 | 39.9 |
| 2/4/2020 | 1030 | 3430 | 8.5 | 60 | 150 | 98 | 14.0 | Closed | | 12.4 | 3.5 | 12.2 | 2.9 | 13.0 | 2.6 | 12.3 | 3.0 | 13.1 | 1.2 | 13.0 | 1.9 | 9.4 | 2.5 | 11.0 | 2.6 | 11.2 | 3.0 | 13.0 | 2.0 | 9.9 | 2.9 | 9.0 | 2.6 | 9.2 | 2.7 | 9.1 | 1.8 | 11.0 | 2.7 | 37.9 |
| 2/21/2020 | 1200 | 3840 | 8.6 | 60 | 160 | 110 | -- | -- | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 2/26/2020 | 930 | 3840 | 8.8 | 60 | 150 | 100 | 15.0 | Closed | | 14.5 | 3.5 | 14.6 | 3.2 | 14.5 | 2.6 | 15.0 | 3.5 | 13.5 | 2.4 | 13.5 | 1.7 | 11.0 | 1.5 | 13.0 | 2.1 | 13.0 | 3.0 | 15.0 | 1.6 | 12.5 | 2.7 | 11.5 | 2.6 | 12.2 | 2.8 | 10.5 | 1.7 | 13.3 | 2.6 | 37.5 |
| 4/1/2020 | 910 | 4679 | 8.5 | 60 | 150 | 106 | 14.0 | Closed | | 12.2 | 3.3 | 12.0 | 3.2 | 12.6 | 2.5 | 12.0 | 3.5 | 12.9 | 2.3 | 12.9 | 1.7 | 9.0 | 1.7 | 10.9 | 2.2 | 11.0 | 3.0 | 12.9 | 1.7 | 9.5 | 2.9 | 8.8 | 2.6 | 9.0 | 2.8 | 8.9 | 1.7 | 10.9 | 2.6 | 37.7 |
| 5/7/2020 | 910 | 5448 | 8.4 | 60 | 150 | 111 | 13.6 | Closed | | 11.9 | 3.5 | 11.3 | 3.2 | 12.1 | 2.5 | 11.3 | 3.5 | 12.3 | 2.3 | 12.2 | 1.7 | 8.3 | 1.1 | 10.1 | 2.1 | 10.4 | 3.0 | 12.1 | 1.9 | 8.8 | 2.7 | 8.0 | 2.6 | 8.1 | 2.9 | 8.1 | 1.7 | 10.1 | 2.6 | 37.3 |
| 6/2/2020 | 852 | 6009 | 8.4 | 60 | 155 | 110 | 13.2 | Closed | | 11.5 | 3.4 | 11.1 | 3.1 | 11.9 | 2.5 | 11.1 | 3.5 | 12.0 | 2.3 | 11.9 | 1.9 | 7.9 | 1.2 | 9.7 | 2.2 | 10.0 | 3.0 | 12.0 | 2.0 | 8.4 | 2.7 | 7.8 | 2.5 | 8.0 | 2.8 | 7.8 | 1.7 | 9.9 | 2.6 | 37.4 |
| 7/31/2020 | 1200 | 7173 | 8.4 | 60 | 155 | 113 | 13.2 | Closed | | 10.2 | 4.6 | 10.2 | 3.3 | 10.9 | 2.6 | 10.4 | 3.5 | 11.3 | 1.9 | 11.1 | 1.8 | 6.8 | 1.2 | 8.3 | 2.2 | 9.1 | 2.9 | 11.9 | 2.0 | 7.0 | 2.7 | 6.2 | 2.5 | 7.1 | 2.8 | 7.0 | 1.7 | 9.0 | 2.0 | 37.7 |
| 8/5/2020 | 1100 | 7177 | 8.6 | 60 | 148 | 110 | 13.8 | Closed | | 7.3 | 3.0 | 11.1 | 2.9 | 11.3 | 2.5 | 11.4 | 2.8 | 11.2 | 2.6 | 11.0 | 2.2 | 7.2 | 1.0 | 9.1 | 2.2 | 10.0 | 2.9 | 11.5 | 2.5 | 8.9 | 2.7 | 7.6 | 2.5 | 8.8 | 2.7 | 7.7 | 1.7 | 9.8 | 2.0 | 36.2 |
| 10/2/2020 | 1245 | 8291 | 8.3 | 60 | 155 | 110 | 12.2 | Closed | | 4.9 | 2.9 | 10.2 | 2.8 | 10.8 | 2.5 | 10.0 | 3.2 | 10.8 | 3.2 | 10.5 | 2.7 | 6.2 | 1.2 | 8.7 | 2.2 | 9.2 | 2.9 | 11.1 | 2.6 | 7.9 | 2.7 | 6.8 | 2.5 | 7.8 | 2.9 | 6.4 | 1.8 | 8.9 | 1.9 | 38.0 |
| 11/6/2020 | 900 | 9128 | 8.3 | 60 | 145 | 95 | 12.5 | Closed | | 5.6 | 3.0 | 11.4 | 3.1 | 11.3 | 2.5 | 11.1 | 3.2 | 11.0 | 3.0 | 10.8 | 2.7 | 7.1 | 1.1 | 9.7 | 2.2 | 10.0 | 3.0 | 11.9 | 2.6 | 9.0 | 2.7 | 8.0 | 2.4 | 9.1 | 3.0 | 7.2 | 1.7 | 9.8 | 1.8 | 38.0 |
| 12/9/2020 | 1309 | 9768 | 8.4 | 60 | 150 | 100 | 13.5 | Closed | | Closed | | 11.7 | 3.3 | 11.5 | 2.3 | 11.5 | 3.7 | 11.6 | 4.0 | 11.1 | 2.7 | 8.9 | 1.1 | 10.0 | 2.1 | 10.2 | 3.0 | 12.3 | 3.1 | 8.9 | 2.7 | 7.9 | 2.4 | 8.8 | 3.0 | 7.9 | 1.9 | 9.9 | 1.8 | 37.1 |
| 1/7/2021 | 1049 | 10307 | 8.6 | 60 | 135 | 81 | 14.1 | Closed | | Closed | | 13.8 | 3.1 | 13.1 | 2.4 | 13.9 | 3.4 | 14.0 | 3.1 | 14.0 | 2.7 | 9.9 | 2.1 | 12.0 | 2.3 | 12.1 | 3.0 | 14.1 | 3.0 | 11.5 | 2.6 | 10.1 | 2.4 | 11.1 | 3.0 | 9.5 | 1.6 | 11.7 | 1.7 | 36.4 |
| 2/1/2021 | 1400 | -- | -- | -- | 160 | 105 | 15.1 | 12.8 | 0.6 | 13.1 | 0.6 | 13.2 | 3.0 | 13.1 | 2.4 | 13.3 | 3.2 | 14.0 | 3.4 | 14.0 | 2.8 | 9.4 | 1.9 | 11.4 | 2.3 | 12.0 | 3.0 | 13.9 | 3.0 | 10.3 | 2.6 | 9.7 | 2.3 | 10.6 | 2.9 | 9.6 | 1.8 | 11.7 | 1.7 | 37.5 |
| 3/2/2021 | 1400 | 11595 | 8.6 | 60 | 160 | 107 | 15.1 | 12.9 | 0.6 | 13.1 | 0.6 | 13.2 | 3.0 | 13.2 | 2.4 | 13.3 | 3.2 | 14.2 | 3.5 | 14.2 | 2.8 | 9.5 | 1.9 | 11.5 | 2.2 | 12.0 | 3.0 | 14.0 | 3.0 | 10.2 | 2.7 | 9.7 | 2.3 | 10.3 | 2.9 | 9.6 | 1.7 | 11.8 | 1.7 | 37.5 |
| 4/7/2021 | 930 | 12454 | 8.5 | 60 | 155 | 100 | 15.0 | 12.2 | 0.0 | 13.0 | 0.0 | 12.7 | 3.3 | 12.9 | 2.3 | 13.1 | 3.0 | 14.1 | 2.2 | 14.0 | 2.2 | 9.0 | 2.0 | 11.9 | 2.4 | 11.1 | 3.0 | 13.4 | 3.4 | 9.8 | 2.7 | 8.9 | 2.3 | 9.9 | 3.1 | 8.9 | 1.9 | 11.0 | 1.7 | 35.5 |
| 5/17/2021 | 930 | 13386 | 8.4 | 60 | 159 | 110 | 14.0 | 11.1 | 0.0 | 11.9 | 0.8 | 11.7 | 3.3 | 12.0 | 2.1 | 12.0 | 3.0 | 13.2 | 2.3 | 13.0 | 2.7 | 8.0 | 1.9 | 9.9 | 2.3 | 10.2 | 3.0 | 12.5 | 3.3 | 8.6 | 2.7 | 8.9 | 2.3 | 8.9 | 3.1 | 9.0 | 1.9 | 9.9 | 1.7 | 36.4 |
| 6/15/2021 | 1100 | 13827 | 8.4 | 60 | 165 | 120 | 14.0 | 11.1 | 0.0 | 11.5 | 0.9 | 11.5 | 3.1 | 11.9 | 2.2 | 11.2 | 3.1 | 12.9 | 2.4 | 12.1 | 2.7 | 7.9 | 1.9 | 9.9 | 2.3 | 10.4 | 2.9 | 12.6 | 3.0 | 8.9 | 2.7 | 7.9 | 2.3 | 8.4 | 3.0 | 7.8 | 1.9 | 9.6 | 1.7 | 36.1 |

# Table 2
# Air Sparge System and Well Data
# CHS Auburn Site
# Auburn, Washington
# Farallon PN: 301-004

| Date | Time | Compressor Total Run Time (hrs) | Compressor Running Amps | Compressor Frequency (Hz) | Pre-Cooling Temperature (F) | Post-Cooling Temperature (F) | System Pressure (psi) | CAS-1 | | CAS-2 | | CAS-3 | | CAS-4 | | CAS-5 | | CAS-7 | | CAS-12 | | CAS-14 | | CAS-15 | | CAS-16 | | CAS-17 | | CAS-18 | | CAS-19 | | CAS-20 | | CAS-21 | | CAS-22 | | TOTAL Flow Rate (SCFM) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Well Pressure (psi) | Flow Rate (SCFM) | Well Pressure (psi) | Flow Rate (SCFM) | Well Pressure (psi) | Flow Rate (SCFM) | Well Pressure (psi) | Flow Rate (SCFM) | Well Pressure (psi) | Flow Rate (SCFM) | Well Pressure (psi) | Flow Rate (SCFM) | Well Pressure (psi) | Flow Rate (SCFM) | Well Pressure (psi) | Flow Rate (SCFM) | Well Pressure (psi) | Flow Rate (SCFM) | Well Pressure (psi) | Flow Rate (SCFM) | Well Pressure (psi) | Flow Rate (SCFM) | Well Pressure (psi) | Flow Rate (SCFM) | Well Pressure (psi) | Flow Rate (SCFM) | Well Pressure (psi) | Flow Rate (SCFM) | Well Pressure (psi) | Flow Rate (SCFM) | |
| 8/17/2021 | 1350 | - | - | - | - | - | - | 10.1 | <1 | 10.5 | 0.9 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 9.5 | 3.0 | - | - | 8.2 | 3.4 | 7.0 | 2.4 | - | - | - | - | - |
| | 1402 | 14181 | 9.0 | 60 | 183 | 115 | 18.5 | 15.8 | 0.5 | 10.1 | 1.0 | Closed | | Closed | | Closed | | Closed | | Closed | | 6.9 | 3.2 | 8.9 | 4.0 | 10.0 | 6.0 | 11.2 | 4.0 | 9.1 | 7.0 | 7.0 | 5.1 | 7.5 | 4.7 | Closed | | Closed | | 35.5 |
| 8/25/2021 | 1240 | 14230 | 8.8 | 60 | 190 | 130 | 17.8 | 14.2 | 0.5 | 9.5 | 1.4 | Closed | | Closed | | Closed | | Closed | | Closed | | 5.9 | 3.3 | 7.9 | 3.8 | 9.1 | 5.9 | 10.4 | 3.5 | 8.0 | 7.5 | 6.0 | 5.0 | 6.1 | 4.4 | Closed | | Closed | | 35.3 |
| 10/13/2021 | 1205 | 15261 | 7.9 | 60 | 132 | 96 | 18.0 | Closed | | 11.0 | 1.4 | Closed | | Closed | | Closed | | Closed | | Closed | | 8.0 | 3.4 | 10.1 | 4.0 | 11.2 | 5.9 | 12.3 | 3.7 | 12.5 | 7.0 | 9.0 | 5.0 | 10.2 | 4.5 | Closed | | Closed | | 34.9 |
| 10/25/2021 | 1245 | - | - | - | - | - | - | 15.0 | 1.0 | - | - | Closed | | Closed | | Closed | | Closed | | Closed | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | Closed | | Closed | | - |
| 11/16/2021 | 1237 | 15978 | - | - | - | - | - | - | - | - | - | Closed | | Closed | | Closed | | Closed | | Closed | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | Closed | | Closed | | - |

NOTES:

-- denotes not collected

AS = air sparge
hrs = hours
Hz - hertz
F = degrees Fahrenheit
psi = pounds per square inch
SCFM = standard cubic feet per minute

**Table 3**
**Air Analytical Data**
**CHS Auburn Site**
**Auburn, Washington**
**Farallon PN: 301-004**

| Sample Location | Sample Identification | Sample Methodology | Sample Date | Analytical Results (nanoliter per microliter [ppmv]) | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | Benzene | Toluene | Ethylbenzene | Total Xylenes | GRO |
| SVE System | EFFLUENT-052919 | EPA 2021B | 5/29/2019 | < 0.31 | < 0.26 | < 0.23 | < 0.46 | < 21 |
| | EFFLUENT-062419 | EPA 2021B | 6/24/2019 | 0.72 | < 0.26 | <0.23 | < 0.46 | < 21 |
| | EFFLUENT-071819 | EPA TO-15 | 7/18/2019 | 0.000181 | 0.000623 | 0.00171 | 0.0031 | 8.030$^{E*}$ |
| | EFFLUENT-082319 | EPA TO-15 | 8/23/2019 | 0.000116 | 0.000610 | 0.00287 | 0.0126 | 0.647 |
| | EFFLUENT-092319 | EPA TO-15 | 9/23/2019 | < 0.0000895 | < 0.0004 | 0.00294 | 0.0075 | 36.9$^{E}$ |
| | EFFLUENT-102219 | EPA TO-15 | 10/22/2019 | < 0.000895 | < 0.0040 | < 0.0040 | < 0.016 | 27.0$^{E}$ |
| | EFFLUENT-121819 | EPA TO-15 | 12/18/2019 | < 0.0000895 | < 0.00040 | < 0.00040 | < 0.0016 | 0.205 |
| | EFFLUENT-020420 | EPA TO-15 | 2/4/2020 | < 0.0000895 | < 0.00040 | < 0.00040 | < 0.0016 | 0.026 |
| | EFFLUENT-040120 | EPA TO-15 | 4/1/2020 | < 0.0000895 | < 0.00040 | < 0.00040 | < 0.0016 | 0.011 |
| | EFFLUENT-050720 | EPA TO-15 | 5/7/2020 | < 0.0000895 | < 0.00040 | < 0.00040 | < 0.0016 | 0.007 |
| | EFFLUENT-060220 | EPA TO-15 | 6/2/2020 | < 0.0000895 | < 0.00040 | < 0.00040 | < 0.0016 | 0.057 |
| | EFFLUENT-110620 | EPA TO-15 | 11/6/2020 | < 0.0000895 | < 0.00040 | < 0.00040 | < 0.0016 | 0.385 |
| | INFLUENT-030221 | EPA TO-15 | 3/2/2021 | < 0.000100 | < 0.00100 | < 0.00400 | < 0.0060 | < 0.040 |
| | INFLUENT-051721 | EPA TO-15 | 5/17/2021 | < 0.0008 | < 0.04 | < 0.0008 | 0.00323 | 14 |
| | EFFLUENT-061521 | EPA TO-15 | 6/15/2021 | <0.0018 | <0.09 | <0.0018 | <0.0054 | 21 |
| | EFFLUENT-082521 | EPA TO-15 | 8/25/2021 | <0.00061 | <0.03 | <0.00061 | <0.00181 | 0.87 |

NOTES:
< denotes analyte not detected at or exceeding the reporting limit listed.
E denotes estimated analytical value, result exceeds the linear working range of the laboratory equipment.
* denotes result not within established laboratory control limits.

EPA = U.S. Environmental Protection Agency
GRO = total petroleum hydrocarbons as gasoline-range organics
ppmv = parts per million volume
SVE = soil vapor extraction

**Table 4**
**Summary of Groundwater Elevation Data – January 2018 through November 2021**
**CHS Auburn Site**
**Auburn, Washington**
**Farallon PN: 301-004**

| Well Identification | Elevation Top of Well Casing (feet)[1] | Measurement Date | Depth to Water (feet)[2] | Elevation (feet)[1] |
|---|---|---|---|---|
| CMW-2 | 88.9 | 1/17/2018 | 18.52 | 70.38 |
| | | 7/31/2018 | 23.24 | 65.66 |
| | | 1/22/2019 | 20.92 | 67.98 |
| | | 8/21/2019 | 24.51 | 64.39 |
| | | 11/25/2019 | 23.92 | 64.98 |
| | | 2/25/2020 | 16.80 | 72.10 |
| | | 5/27/2020 | 20.77 | 68.13 |
| | | 11/11/2020 | 23.52 | 65.38 |
| | | 5/24/2021 | 21.05 | 67.85 |
| | | 11/29/2021 | 20.07 | 68.83 |
| CMW-4 | 90.68 | 1/17/2018 | 20.08 | 70.60 |
| | | 7/31/2018 | 25.60 | 65.08 |
| CMW-6 | 90.66 | 1/17/2018 | 20.94 | 69.72 |
| | | 7/31/2018 | dry | dry |
| CMW-8 | 89.94 | 1/17/2018 | 20.55 | 69.39 |
| | | 7/31/2018 | 25.31 | 64.63 |
| | | 1/22/2019 | 22.95 | 66.99 |
| | | 8/21/2019 | 26.52 | 63.42 |
| | | 11/25/2019 | 25.90 | 64.04 |
| | | 2/24/2020 | 18.88 | 71.06 |
| | | 5/27/2020 | 22.86 | 67.08 |
| | | 11/11/2020 | 25.45 | 64.49 |
| | | 5/24/2021 | 23.12 | 66.82 |
| | | 11/29/2021 | 22.23 | 67.71 |
| CMW-10 | NS | 1/17/2018 | 18.80 | NS |
| | | 7/31/2018 | 23.71 | NS |
| | | 1/22/2019 | 21.32 | NS |
| | | 8/21/2019 | 24.96 | NS |
| | | 11/25/2019 | 24.40 | NS |
| | | 2/25/2020 | 17.20 | NS |
| | | 5/27/2020 | 21.23 | NS |
| | | 11/11/2020 | 24.00 | NS |
| | | 5/24/2021 | 21.48 | NS |
| | | 11/29/2021 | 20.61 | NS |
| CMW-12 | 90.02 | 1/17/2018 | 20.12 | 69.90 |
| | | 7/31/2018 | 25.84 | 64.18 |
| | | 1/22/2019 | 22.45 | 67.57 |
| | | 8/21/2019 | 26.07 | 63.95 |
| | | 11/25/2019 | 25.47 | 64.55 |
| | | 2/25/2020 | 18.43 | 71.59 |
| | | 5/27/2020 | 22.35 | 67.67 |
| | | 11/11/2020 | 25.04 | 64.98 |
| | | 5/24/2021 | 22.60 | 67.42 |
| | | 11/29/2021 | 21.77 | 68.25 |

**Table 4**
**Summary of Groundwater Elevation Data – January 2018 through November 2021**
**CHS Auburn Site**
**Auburn, Washington**
**Farallon PN: 301-004**

| Well Identification | Elevation Top of Well Casing (feet)[1] | Measurement Date | Depth to Water (feet)[2] | Elevation (feet)[1] |
|---|---|---|---|---|
| CMW-13 | 89.67 | 1/17/2018 | 19.63 | 70.04 |
| | | 7/31/2018 | 22.48[3] | 67.19[3] |
| | | 1/22/2019 | 22.03 | 67.64 |
| | | 8/21/2019 | 25.71 | 63.96 |
| | | 11/25/2019 | 25.06 | 64.61 |
| | | 2/25/2020 | 17.89 | 71.78 |
| | | 5/27/2020 | 21.91 | 67.76 |
| | | 11/11/2020 | 24.65 | 65.02 |
| | | 5/24/2021 | 22.16 | 67.51 |
| | | 11/29/2021 | 21.32 | 68.35 |
| CMW-15 | 87.22 | 1/17/2018 | 17.78 | 69.44 |
| | | 7/31/2018 | 22.53 | 64.69 |
| CMW-25 | NS | 1/17/2018 | 18.96 | NS |
| | | 7/31/2018 | 23.64 | NS |
| | | 1/22/2019 | 21.35 | NS |
| | | 8/21/2019 | 24.91 | NS |
| | | 11/25/2019 | 24.40 | NS |
| | | 2/24/2020 | 17.25 | NS |
| | | 5/27/2020 | 21.16 | NS |
| | | 11/11/2020 | 23.98 | NS |
| | | 5/24/2021 | 21.44 | NS |
| | | 11/29/2021 | 20.63 | NS |
| CMW-26 | 87.80 | 1/17/2018 | 17.31 | 70.49 |
| | | 7/31/2018 | 21.97 | 65.83 |
| | | 1/22/2019 | 19.64 | 68.16 |
| | | 8/21/2019 | 23.24 | 64.56 |
| | | 11/25/2019 | 22.67 | 65.13 |
| | | 2/25/2020 | 15.56 | 72.24 |
| | | 5/27/2020 | 19.50 | 68.30 |
| | | 11/11/2020 | 22.30 | 65.50 |
| | | 5/24/2021 | 19.74 | 68.06 |
| | | 11/29/2021 | 18.93 | 68.87 |
| CMW-27 | 89.10 | 1/17/2018 | 18.79 | 70.31 |
| | | 7/31/2018 | 23.70 | 65.40 |
| | | 1/22/2019 | 21.35 | 67.75 |
| | | 8/21/2019 | 24.96 | 64.14 |
| | | 11/25/2019 | 24.37 | 64.73 |
| | | 2/25/2020 | 17.17 | 71.93 |
| | | 5/27/2020 | 21.22 | 67.88 |
| | | 11/11/2020 | 23.97 | 65.13 |
| | | 5/24/2021 | 21.47 | 67.63 |
| | | 11/29/2021 | 20.68 | 68.42 |

**Table 4**
**Summary of Groundwater Elevation Data – January 2018 through November 2021**
**CHS Auburn Site**
**Auburn, Washington**
**Farallon PN: 301-004**

| Well Identification | Elevation Top of Well Casing (feet)[1] | Measurement Date | Depth to Water (feet)[2] | Elevation (feet)[1] |
|---|---|---|---|---|
| CMW-28 | 89.48 | 1/17/2018 | 19.13 | 70.35 |
| | | 7/31/2018 | 23.89 | 65.59 |
| | | 1/22/2019 | 21.55 | 67.93 |
| | | 8/21/2019 | 25.14 | 64.34 |
| | | 11/25/2019 | 24.56 | 64.92 |
| | | 2/24/2020 | 17.39 | 72.09 |
| | | 5/27/2020 | 21.39 | 68.09 |
| | | 11/11/2020 | 24.15 | 65.33 |
| | | 5/24/2021 | 21.64 | 67.84 |
| | | 11/29/2021 | 20.80 | 68.68 |
| CMW-29 | 88.03 | 1/17/2018 | 17.48 | 70.55 |
| | | 7/31/2018 | 22.19 | 65.84 |
| | | 1/22/2019 | 19.85 | 68.18 |
| | | 8/21/2019 | 23.47 | 64.56 |
| | | 11/25/2019 | 22.91 | 65.12 |
| | | 2/24/2020 | 15.76 | 72.27 |
| | | 5/27/2020 | 19.66 | 68.37 |
| | | 11/11/2020 | 22.51 | 65.52 |
| | | 5/24/2021 | 19.93 | 68.10 |
| | | 11/29/2021 | 19.13 | 68.90 |
| CMW-30 | 87.58 | 1/17/2018 | 16.82 | 70.76 |
| | | 7/31/2018 | 21.52 | 66.06 |
| | | 1/22/2019 | 19.19 | 68.39 |
| | | 8/21/2019 | 22.84 | 64.74 |
| | | 11/25/2019 | 22.28 | 65.30 |
| | | 2/25/2020 | 15.16 | 72.42 |
| | | 5/27/2020 | 19.02 | 68.56 |
| | | 11/11/2020 | 21.88 | 65.70 |
| | | 5/24/2021 | 19.28 | 68.30 |
| | | 11/29/2021 | 18.53 | 69.05 |
| CMW-31 | 89.02 | 1/17/2018 | 19.49 | 69.53 |
| | | 7/31/2018 | 24.32 | 64.70 |
| | | 1/22/2019 | 21.90 | 67.12 |
| | | 8/21/2019 | 25.54 | 63.48 |
| | | 11/25/2019 | 24.91 | 64.11 |
| | | 2/24/2020 | 17.80 | 71.22 |
| | | 5/27/2020 | 21.81 | 67.21 |
| | | 11/11/2020 | 24.43 | 64.59 |
| | | 5/24/2021 | 22.06 | 66.96 |
| | | 11/29/2021 | 21.18 | 67.84 |

**Table 4**
**Summary of Groundwater Elevation Data – January 2018 through November 2021**
**CHS Auburn Site**
**Auburn, Washington**
**Farallon PN: 301-004**

| Well Identification | Elevation Top of Well Casing (feet)[1] | Measurement Date | Depth to Water (feet)[2] | Elevation (feet)[1] |
|---|---|---|---|---|
| HMW-9 | 89.07 | 1/17/2018 | 19.47 | 69.60 |
| | | 7/31/2018 | 24.25 | 64.82 |
| | | 1/22/2019 | 21.85 | 67.22 |
| | | 8/21/2019 | 25.45 | 63.62 |
| | | 11/25/2019 | 24.84 | 64.23 |
| | | 2/25/2020 | 17.84 | 71.23 |
| | | 5/27/2020 | 21.76 | 67.31 |
| | | 11/11/2020 | 24.40 | 64.67 |
| | | 5/24/2021 | 22.00 | 67.07 |
| | | 11/29/2021 | 21.18 | 67.89 |
| HMW-10 | 89.18 | 1/17/2018 | 19.40 | 69.78 |
| | | 7/31/2018 | 24.13 | 65.05 |
| | | 1/22/2019 | 21.77 | 67.41 |
| | | 8/21/2019 | 23.35 | 65.83 |
| | | 11/25/2019 | 24.78 | 64.40 |
| | | 2/24/2020 | 17.70 | 71.48 |
| | | 5/27/2020 | 21.66 | 67.52 |
| | | 11/11/2020 | 24.34 | 64.84 |
| | | 5/24/2021 | 21.91 | 67.27 |
| | | 11/29/2021 | 21.08 | 68.10 |
| HMW-11 | NS | 1/17/2018 | 17.51 | NS |
| | | 7/31/2018 | 22.27 | NS |
| | | 1/22/2019 | 19.89 | NS |
| | | 8/21/2019 | 23.30 | NS |
| | | 11/25/2019 | 22.87 | NS |
| | | 2/25/2020 | 15.82 | NS |
| | | 5/27/2020 | 19.76 | NS |
| | | 11/11/2020 | 22.46 | NS |
| | | 5/24/2021 | 20.03 | NS |
| | | 11/29/2021 | 19.25 | NS |
| HMW-13 | 88.32 | 1/17/2018 | 17.82 | 70.50 |
| | | 7/31/2018 | 22.51 | 65.81 |
| | | 1/22/2019 | 20.21 | 68.11 |
| | | 8/21/2019 | 23.80 | 64.52 |
| | | 11/25/2019 | 23.24 | 65.08 |
| | | 2/24/2020 | 16.13 | 72.19 |
| | | 5/27/2020 | 20.02 | 68.30 |
| | | 11/11/2020 | 22.85 | 65.47 |
| | | 5/24/2021 | 16.00 | 72.32 |
| | | 11/29/2021 | 19.50 | 68.82 |

NOTES:

[1]Elevation in feet above mean sea level.

[2]Depth to water in feet below the top of the well casing.

NS = well not surveyed; groundwater elevation could not be determined

[3]Depth to water measurement appears to be erroneous; depth to water measured during sampling on July 31, 2018 was 24.45 feet below the top of the well casing.

**Table 5**
**Summary of Groundwater Geochemical Data – January 2018 through November 2021**
**CHS Auburn Site**
**Auburn, Washington**
**Farallon PN: 301-004**

| Sample Location | Date[1] | Temperature[2] (°Celsius) | pH[2] | ORP[2] (millivolts) | Dissolved Oxygen[1] (milligrams per liter) |
|---|---|---|---|---|---|
| CMW-2 | 1/18/2018 | 13.5 | 6.03 | 252.3 | 1.15 |
| | 7/31/2018 | 15.5 | 6.14 | 164.0 | 0.47 |
| | 1/22/2019 | 12.9 | 5.99 | 214.1 | 1.20 |
| | 8/22/2019 | 14.7 | 6.16 | 175.1 | 2.09 |
| | 11/26/2019 | 13.8 | 6.20 | 44.5 | 3.29 |
| | 2/25/2020 | 12.2 | 6.60 | 143.6 | 6.76 |
| | 5/28/2020 | 14.8 | 7.32 | 201.4 | 8.58 |
| | 11/12/2020 | 13.4 | 6.23 | 17.5 | 0.95 |
| | 5/25/2021 | 13.7 | 6.49 | 354.9 | 7.03 |
| | 11/30/2021 | 14.6 | 6.48 | 238.3 | 4.52 |
| CMW-4 | 1/17/2018 | — | — | — | 4.52 |
| CMW-6 | 1/17/2018 | — | — | — | 4.09 |
| CMW-8 | 1/18/2018 | 12.0 | 6.66 | -14.3 | 0.29 |
| | 8/1/2018 | 14.5 | 6.33 | -32.3 | 0.52 |
| | 1/22/2019 | 12.2 | 6.29 | 8.8 | 0.64 |
| | 8/21/2019 | 13.9 | 6.21 | 8.4 | 1.71 |
| | 11/25/2019 | 12.6 | 6.37 | 21.8 | 1.05 |
| | 2/25/2020 | 12.5 | 6.27 | -1.3 | 0.99 |
| | 5/28/2020 | 13.3 | 6.52 | -9.9 | 0.60 |
| | 11/11/2020 | 12.3 | 6.31 | -31.9 | 6.67 |
| | 5/24/2021 | 13.3 | 6.08 | 41.2 | 0.75 |
| | 11/30/2021 | 12.9 | 6.51 | -12.5 | 1.17 |
| CMW-10 | 1/18/2018 | 13.4 | 6.12 | 194.4 | 0.70 |
| | 8/1/2018 | 14.9 | 6.12 | -40.1 | 0.26 |
| | 1/23/2019 | 13.0 | 5.76 | 176.7 | 0.75 |
| | 8/22/2019 | 14.3 | 6.00 | -37.4 | 0.76 |
| | 11/25/2019 | 14.6 | 4.87 | 87.3 | 1.18 |
| | 2/25/2020 | 13.3 | 6.08 | 158 | 5.58 |
| | 5/28/2020 | 15.2 | 6.52 | 120.8 | 2.27 |
| | 11/12/2020 | 13.1 | 5.75 | 36.6 | 1.20 |
| | 5/25/2021 | 14.1 | 6.13 | 319.2 | 1.36 |
| | 11/30/2021 | 15.1 | 6.25 | 174.8 | 1.56 |
| CMW-12 | 1/18/2018 | 12.8 | 6.46 | -47.0 | 0.18 |
| | 8/1/2018 | 15.8 | 6.19 | -22.5 | 0.41 |
| | 1/23/2019 | 12.5 | 6.36 | -25.7 | 0.60 |
| | 8/22/2019 | 15.1 | 6.25 | -61.5 | 1.71 |
| | 11/26/2019 | 12.4 | 6.36 | -6.5 | 0.97 |
| | 2/25/2020 | 12.8 | 6.12 | -13.9 | 1.01 |
| | 5/28/2020 | 18.3 | 6.50 | -35.5 | 0.59 |
| | 11/12/2020 | 13.6 | 6.29 | -93.6 | 0.73 |
| | 5/25/2021 | 14.6 | 6.13 | 86.8 | 0.86 |
| | 11/30/2021 | 13.9 | 6.38 | 93.4 | 2.17 |

**Table 5**
**Summary of Groundwater Geochemical Data – January 2018 through November 2021**
**CHS Auburn Site**
**Auburn, Washington**
**Farallon PN: 301-004**

| Sample Location | Date[1] | Temperature[2] (°Celsius) | pH[2] | ORP[2] (millivolts) | Dissolved Oxygen[1] (milligrams per liter) |
|---|---|---|---|---|---|
| CMW-13 | 1/18/2018 | 13.1 | 6.30 | 107.2 | 1.25 |
| | 7/31/2018 | 15.9 | 6.18 | -40.3 | 0.26 |
| | 1/23/2019 | 12.5 | 5.91 | 78.6 | 1.28 |
| | 8/22/2019 | 14.5 | 6.34 | -31.7 | 1.85 |
| | 11/26/2019 | 13.1 | 6.41 | -0.9 | 1.51 |
| | 2/25/2020 | 12.8 | 6.13 | 155.9 | 1.54 |
| | 5/28/2020 | 16.5 | 6.17 | 77.5 | 0.71 |
| | 11/12/2020 | 13.3 | 6.44 | -80.0 | 2.30 |
| | 5/24/2021 | 14.5 | 5.79 | 116.3 | 1.15 |
| | 11/30/2021 | 14.3 | 6.27 | 60.3 | 4.52 |
| CMW-15 | 1/17/2018 | — | — | — | 0.37 |
| CMW-25 | 1/18/2018 | 12.7 | 6.14 | 269.4 | 4.68 |
| | 7/31/2018 | 16.3 | 6.03 | 88.5 | 0.75 |
| | 1/22/2019 | 12.4 | 6.03 | 315.1 | 4.59 |
| | 8/21/2019 | 15.6 | 6.03 | 117.8 | 1.03 |
| | 11/25/2019 | 12.8 | 6.13 | 63.5 | 1.74 |
| | 2/24/2020 | 12.1 | 6.00 | 114.2 | 8.05 |
| | 5/27/2020 | 15.1 | 6.18 | 251.5 | 4.24 |
| | 11/12/2020 | 12.5 | 5.97 | 12.4 | 1.32 |
| | 5/24/2021 | 13.2 | 5.77 | 345.6 | 4.00 |
| | 11/29/2021 | 15.0 | 6.19 | 279.6 | 6.85 |
| CMW-26 | 1/18/2018 | 10.7 | 6.44 | 233.6 | 4.04 |
| | 8/1/2018 | 16.0 | 6.22 | 160.6 | 4.32 |
| | 1/22/2019 | 11.9 | 6.07 | 98.6 | 4.08 |
| | 8/21/2019 | 16.0 | 6.05 | 206.1 | 4.18 |
| | 11/26/2019 | 11.6 | 6.27 | 218.2 | 2.98 |
| | 2/25/2020 | 11.4 | 6.33 | 155.2 | 4.61 |
| | 5/27/2020 | 16.4 | 6.35 | 266.0 | 4.21 |
| | 11/11/2020 | 12.5 | 6.05 | 49.6 | 0.77 |
| | 5/25/2021 | 13.0 | 6.05 | 338.3 | 4.53 |
| | 11/29/2021 | 14.0 | 6.36 | 273.5 | 4.61 |
| CMW-27 | 1/18/2018 | 14.0 | 6.12 | 155.5 | 0.44 |
| | 8/1/2018 | 16.0 | 6.05 | -26.7 | 0.21 |
| | 1/23/2019 | 12.7 | 6.27 | -106.1 | 0.73 |
| | 8/22/2019 | 16.7 | 6.45 | -53.7 | 0.69 |
| | 11/26/2019 | 14.6 | 6.29 | -156.8 | 0.47 |
| | 2/25/2020 | 13.9 | 6.14 | 276.2 | 1.95 |
| | 5/28/2020 | 16.1 | 6.49 | -31.0 | 0.76 |
| | 11/12/2020 | 14.5 | 6.28 | -73.2 | 0.90 |
| | 5/25/2021 | 14.5 | 6.11 | 29.2 | 0.63 |
| | 11/30/2021 | 15.2 | 6.18 | 50.9 | 0.99 |

**Table 5**
**Summary of Groundwater Geochemical Data – January 2018 through November 2021**
**CHS Auburn Site**
**Auburn, Washington**
**Farallon PN: 301-004**

| Sample Location | Date[1] | Temperature[2] (°Celsius) | pH[2] | ORP[2] (millivolts) | Dissolved Oxygen[1] (milligrams per liter) |
|---|---|---|---|---|---|
| CMW-28 | 1/18/2018 | 9.3 | 6.17 | 204.4 | 2.04 |
| | 8/1/2018 | 15.2 | 5.98 | 44.9 | 0.52 |
| | 1/23/2019 | 12.0 | 5.56 | 184.9 | 1.87 |
| | 8/21/2019 | 15.2 | 5.65 | 161.3 | 1.55 |
| | 11/26/2019 | 14.8 | 5.66 | 245.0 | 1.93 |
| | 2/24/2020 | 11.1 | 5.54 | 146.7 | 7.51 |
| | 5/27/2020 | 15.5 | 6.03 | 292.3 | 7.44 |
| | 11/12/2020 | 14.2 | 5.90 | 52.1 | 3.91 |
| | 5/25/2021 | 13.6 | 5.63 | 296.5 | 3.08 |
| | 11/30/2021 | 14.1 | 6.04 | 286.6 | 1.15 |
| CMW-29 | 1/17/2018 | 11.9 | 6.15 | 109.6 | 0.55 |
| | 7/31/2018 | 16.7 | 6.07 | 43.2 | 0.41 |
| | 1/22/2019 | 13.1 | 5.90 | 180.3 | 1.28 |
| | 8/22/2019 | 14.1 | 5.59 | 103.4 | 0.87 |
| | 11/25/2019 | 13.6 | 5.94 | 112.3 | 0.85 |
| | 2/24/2020 | 13.1 | 6.03 | 90.0 | 1.49 |
| | 5/27/2020 | 17.4 | 6.05 | 243.7 | 1.66 |
| | 11/11/2020 | 13.1 | 5.72 | 24.2 | 5.06 |
| | 5/24/2021 | 14.0 | 5.60 | 267.0 | 7.19 |
| | 11/29/2021 | 15.3 | 5.96 | 294.7 | 1.53 |
| CMW-30 | 1/17/2018 | — | — | — | 1.11 |
| | 1/22/2019 | 13.4 | 6.19 | 179.1 | 0.91 |
| | 8/21/2019 | 15.1 | 5.90 | 163.9 | 0.90 |
| | 11/25/2019 | 14.5 | 6.09 | 124.4 | 0.56 |
| | 2/25/2020 | 12.0 | 6.20 | 148.2 | 2.26 |
| | 5/27/2020 | 15.6 | 6.29 | 193.3 | 0.71 |
| | 11/11/2020 | 14.3 | 6.03 | 15.0 | 0.89 |
| | 5/24/2021 | 13.9 | 5.80 | 241.9 | 0.40 |
| | 11/29/2021 | 15.1 | 6.24 | 210.2 | 0.93 |
| CMW-31 | 1/18/2018 | 12.0 | 6.34 | 153.3 | 2.90 |
| | 7/31/2018 | 14.6 | 6.03 | 97.6 | 0.71 |
| | 1/22/2019 | 12.7 | 5.95 | 161.2 | 3.34 |
| | 8/22/2019 | 13.5 | 6.11 | 143.8 | 2.07 |
| | 11/25/2019 | 12.3 | 6.20 | 109.3 | 1.60 |
| | 2/24/2020 | 12.5 | 5.88 | 277.9 | 3.91 |
| | 5/28/2020 | 13.9 | 6.21 | 163.2 | 1.17 |
| | 11/11/2020 | 12.6 | 6.08 | 53.4 | 1.11 |
| | 5/24/2021 | 13.7 | 6.15 | 270.8 | 1.09 |
| | 11/29/2021 | 14.1 | 6.15 | 297.5 | 1.28 |

**Table 5**
**Summary of Groundwater Geochemical Data – January 2018 through November 2021**
**CHS Auburn Site**
**Auburn, Washington**
**Farallon PN: 301-004**

| Sample Location | Date[1] | Temperature[2] (°Celsius) | pH[2] | ORP[2] (millivolts) | Dissolved Oxygen[1] (milligrams per liter) |
|---|---|---|---|---|---|
| HMW-9 | 1/18/2018 | 12.6 | 6.51 | -13.0 | 0.51 |
| | 8/1/2018 | 14.8 | 6.23 | -20.0 | 0.25 |
| | 1/22/2019 | 13.3 | 6.16 | 28.8 | 0.59 |
| | 8/21/2019 | 16.7 | 6.23 | -5.1 | 1.89 |
| | 11/25/2019 | 14.0 | 6.25 | 25.3 | 0.33 |
| | 2/25/2020 | 13.0 | 6.18 | 35.7 | 2.84 |
| | 5/28/2020 | 14.0 | 6.38 | -18.7 | 0.88 |
| | 11/11/2020 | 13.9 | 6.23 | -67.3 | 3.82 |
| | 5/25/2021 | 14.9 | 5.99 | 36.6 | 2.66 |
| | 11/30/2021 | 14.1 | 6.44 | 13.0 | 1.10 |
| HMW-10 | 1/17/2018 | 12.3 | 6.49 | -38.1 | 0.47 |
| | 7/31/2018 | 14.8 | 6.22 | -43.1 | 0.26 |
| | 1/22/2019 | 13.0 | 6.14 | 30.5 | 0.53 |
| | 8/21/2019 | 14.6 | 6.25 | -26.0 | 2.02 |
| | 11/25/2019 | 13.3 | 6.18 | 27.3 | 2.76 |
| | 2/24/2020 | 13.5 | 6.07 | 7.8 | 7.1 |
| | 5/28/2020 | 14.1 | 6.43 | -9.0 | 0.59 |
| | 11/12/2020 | 13.1 | 6.26 | -57.4 | 2.70 |
| | 5/24/2021 | 14.6 | 5.85 | 26.7 | 0.80 |
| | 11/30/2021 | 13.5 | 6.48 | -7.8 | 0.85 |
| HMW-11 | 1/18/2018 | 13.7 | 6.07 | 176.6 | 0.46 |
| | 8/1/2018 | 15.3 | 6.20 | -27.6 | 0.29 |
| | 1/23/2019 | 12.9 | 6.30 | -30.4 | 0.96 |
| | 8/22/2019 | 14.6 | 6.20 | -40.1 | 1.70 |
| | 11/26/2019 | 13.3 | 6.35 | -3.9 | 0.78 |
| | 2/25/2020 | 14.1 | 6.00 | 188.7 | 0.63 |
| | 5/28/2020 | 16.2 | 6.38 | -16.6 | 0.70 |
| | 11/12/2020 | 13.8 | 6.37 | -108.8 | 0.67 |
| | 5/25/2021 | 14.6 | 6.22 | 1.6 | 1.10 |
| | 11/30/2021 | 15.3 | 6.23 | 255.3 | 4.12 |
| HMW-13 | 1/18/2018 | 12.2 | 6.18 | 233.4 | 0.55 |
| | 8/1/2018 | 14.7 | 5.95 | 157.5 | 0.85 |
| | 1/23/2019 | 12.5 | 5.64 | 196.8 | 1.23 |
| | 8/21/2019 | 15.9 | 5.97 | 211.9 | 2.72 |
| | 11/26/2019 | 12.1 | 6.06 | 235.3 | 1.51 |
| | 2/24/2020 | 11.7 | 5.89 | 140.1 | 2.92 |
| | 5/27/2020 | 16.8 | 6.16 | 233.0 | 1.10 |
| | 11/11/2020 | 12.6 | 5.77 | 59.2 | 2.70 |
| | 5/25/2021 | 14.7 | 5.96 | 250.9 | 1.93 |
| | 11/30/2021 | 13.6 | 6.19 | 281.1 | 1.86 |

NOTES:

-- = not measured

ORP = oxidation-reduction potential

[1]Date shown represents date of groundwater sample collection. Dissolved-oxygen measurements typically were collected 1 to 2 days prior using a dissolved-oxygen analyzer with a down-hole probe.

[2]Temperature, pH, and ORP were measured using a YSI or Horiba multiparameter water-quality analyzer.

**Table 6**
**Summary of Laboratory Analytical Results for TPH and BTEX in Groundwater – January 2018 through November 2021**
**CHS Auburn Site**
**Auburn, Washington**
**Farallon PN: 301-004**

| Well Identification | Sample Identification | Sample Date | Analytical Results (milligrams per liter) | | Analytical Results (micrograms per liter) | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | DRO[1] | ORO[1] | GRO[2] | Benzene[3] | Toluene[3] | Ethylbenzene[3] | Total Xylenes[3] |
| CMW-2 | CMW-2-011818 | 1/18/2018 | **0.93** | **<0.62**[4] | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-2-073118 | 7/31/2018 | **0.63** | <0.41 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-2-012219 | 1/22/2019 | **2.2** | **1.1**[5] | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-2-082219 | 8/22/2019 | **1.0** | **0.69**[5] | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-2-112619 | 11/26/2019 | **5.2** | **3.3**[5] | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-2-022520 | 2/25/2020 | **0.63** | **1.0** | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-2-052820 | 5/28/2020 | **0.76** | **0.94** | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-2-111220 | 11/12/2020 | **1.9** | **1.1**[5] | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-2-052521 | 5/25/2021 | 0.34 | **0.63** | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-2-113021 | 11/30/2021 | **1.4** | **1.2** | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| CMW-8 | CMW-8-011818 | 1/18/2018 | 0.38 | <0.41 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-8-080118 | 8/1/2018 | 0.31 | <0.42 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-8-012219 | 1/22/2019 | 0.50 | <0.41 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-8-082119 | 8/21/2019 | **0.51** | <0.40 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-8-112519 | 11/25/2019 | **0.53** | 0.36 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-8-022420 | 2/24/2020 | **0.60** | 0.25 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-8-052820 | 5/28/2020 | **0.97** | **0.56** | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-8-111120 | 11/11/2020 | 0.47 | 0.22[5] | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-8-052421 | 5/24/2021 | **0.53** | 0.26 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-8-113021 | 11/30/2021 | **0.58** | 0.35 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| CMW-10 | CMW-10-011818 | 1/18/2018 | **1.4** | **<0.89**[4] | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-10-080118 | 8/1/2018 | **1.5** | **0.67**[5] | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-10-012319 | 1/23/2019 | **2.1** | **1.4**[5] | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-10-082219 | 8/22/2019 | **2.9** | **0.80**[5] | <400 | <4.0 | <4.0 | <4.0 | <8.0 |
| | CMW-10-112519 | 11/25/2019 | **0.73** | 0.37 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-10-022520 | 2/25/2020 | **2.3** | **1.4** | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-10-052820 | 5/28/2020 | **3.4** | **2.9** | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-10-111220 | 11/12/2020 | **1.6** | **0.70**[5] | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-10-052521 | 5/25/2021 | **2.1** | **3.1** | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-10-113021 | 11/30/2021 | **2.8** | **2.9** | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| **MTCA Method A Cleanup Levels for Groundwater[6]** | | | **0.5** | **0.5** | **800** | **5** | **1,000** | **700** | **1,000** |

**Table 6**
**Summary of Laboratory Analytical Results for TPH and BTEX in Groundwater – January 2018 through November 2021**
**CHS Auburn Site**
**Auburn, Washington**
**Farallon PN: 301-004**

| Well Identification | Sample Identification | Sample Date | Analytical Results (milligrams per liter) | | Analytical Results (micrograms per liter) | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | DRO[1] | ORO[1] | GRO[2] | Benzene[3] | Toluene[3] | Ethylbenzene[3] | Total Xylenes[3] |
| CMW-12 | CMW-12-011818 | 1/18/2018 | **2.1**[7] | **<0.55**[4] | **1,300** | 3.0 | <1.0 | <1.0 | <2.0 |
| | QA/QC-1-011818[8] | 1/18/2018 | **2.2**[7] | **<0.70**[4] | **1,200** | 2.6 | <1.0 | <1.0 | <2.0 |
| | CMW-12-080118 | 8/1/2018 | **1.5**[7] | **0.77**[5] | **1,500** | 1.2 | <1.0 | <1.0 | 1.6 |
| | QA/QC-1-080118[8] | 8/1/2018 | **1.4**[7] | **0.56**[5] | **1,500** | 1.1 | <1.0 | <1.0 | 1.9 |
| | CMW-12-012319 | 1/23/2019 | **1.6**[7] | 0.43[5] | **1,500**[9] | 1.7 | <1.0 | <1.0 | <2.0 |
| | QA/QC-1-012319[8] | 1/23/2019 | **1.6**[7] | <0.42 | **1,500**[9] | 1.6 | <1.0 | <1.0 | <2.0 |
| | CMW-12-082219 | 8/22/2019 | **2.5**[7] | **0.51**[5] | **920** | <4.0 | <4.0 | <4.0 | <8.0 |
| | QA/QC-1-082219[8] | 8/22/2019 | **2.1**[7] | <0.41 | **950** | <4.0 | <4.0 | <4.0 | <8.0 |
| | CMW-12-112619 | 11/26/2019 | **2.3**[7] | **0.51**[5] | 620[9] | <1.0 | <1.0 | <1.0 | <2.0 |
| | QA/QC-1-112619[8] | 11/26/2019 | **2.3**[7] | 0.46[5] | 620[9] | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-12-022520 | 2/25/2020 | **4.2** | **1.4** | **1,000** | 2.0 | 1.8 | <1.0 | <2.0 |
| | QAQC-1-022520[8] | 2/25/2020 | **4.2** | **1.5** | **950** | 2.0 | 1.8 | <1.0 | <2.0 |
| | CMW-12-052820 | 5/28/2020 | **2.4**[7] | **1.1** | 510[9] | <1.0 | <1.0 | <1.0 | <2.0 |
| | QA/QC-2-052820[8] | 5/28/2020 | **2.3**[7] | **1.1** | 490[9] | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-12-111220 | 11/12/2020 | **0.85**[7] | 0.34[5] | 200[9] | <1.0 | <1.0 | <1.0 | <2.0 |
| | QA/QC-1-111220[8] | 11/12/2020 | **0.90**[7] | 0.37[5] | 200[9] | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-12-052521 | 5/25/2021 | **1.1** | **0.95** | <130[4] | <1.0 | <1.0 | <1.0 | <2.0 |
| | QA/QC-1-052521[8] | 5/25/2021 | **1.0** | **0.98** | <120[4] | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-12-113021 | 11/30/2021 | **0.64** | 0.33 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | QA/QC-1-113021[8] | 11/30/2021 | **0.65** | 0.32 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| CMW-13 | CMW-13-011818 | 1/18/2018 | 0.29 | <0.41 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-13-073118 | 7/31/2018 | **0.62**[7] | <0.41 | 240 | 1.1 | <1.0 | <1.0 | <2.0 |
| | CMW-13-012319 | 1/23/2019 | **0.57** | <0.41 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-13-082219 | 8/22/2019 | 0.38 | <0.41 | <400 | <4.0 | <4.0 | <4.0 | <8.0 |
| | CMW-13-112619 | 11/26/2019 | **0.70** | 0.35[5] | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-13-022520 | 2/25/2020 | **3.3** | **2.0** | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-13-052820 | 5/28/2020 | **1.7** | **1.1** | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-13-111220 | 11/12/2020 | 0.48 | 0.25[5] | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-13-052421 | 5/24/2021 | **1.4** | **0.72** | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-13-113021 | 11/30/2021 | **0.57** | 0.34 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| CMW-25 | CMW-25-011818 | 1/18/2018 | <0.26 | <0.41 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-25-073118 | 7/31/2018 | <0.26 | <0.42 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-25-012219 | 1/22/2019 | <0.26 | <0.41 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-25-082119 | 8/21/2019 | <0.25 | <0.41 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-25-112519 | 11/25/2019 | 0.14 | 0.22 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-25-022420 | 2/24/2020 | <0.21 | <0.21 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-25-052720 | 5/27/2020 | <0.21 | <0.21 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-25-111220 | 11/12/2020 | <0.21 | <0.21 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-25-052421 | 5/24/2021 | <0.20 | <0.20 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-25-112921 | 11/29/2021 | <0.20 | <0.20 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| **MTCA Method A Cleanup Levels for Groundwater[6]** | | | **0.5** | **0.5** | **800** | **5** | **1,000** | **700** | **1,000** |

**Table 6**
**Summary of Laboratory Analytical Results for TPH and BTEX in Groundwater – January 2018 through November 2021**
**CHS Auburn Site**
**Auburn, Washington**
**Farallon PN: 301-004**

| Well Identification | Sample Identification | Sample Date | Analytical Results (milligrams per liter) | | Analytical Results (micrograms per liter) | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | DRO[1] | ORO[1] | GRO[2] | Benzene[3] | Toluene[3] | Ethylbenzene[3] | Total Xylenes[3] |
| CMW-26 | CMW-26-011818 | 1/18/2018 | <0.26 | <0.42 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-26-080118 | 8/1/2018 | <0.26 | <0.42 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-26-012219 | 1/22/2019 | <0.26 | <0.41 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-26-082119 | 8/21/2019 | <0.25 | <0.41 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-26-112619 | 11/26/2019 | <0.21 | <0.21 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-26-022520 | 2/25/2020 | <0.21 | <0.21 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-26-052720 | 5/27/2020 | <0.21 | <0.21 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-26-111120 | 11/11/2020 | <0.21 | <0.21 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-26-052521 | 5/25/2021 | <0.20 | <0.20 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-26-112921 | 11/29/2021 | <0.20 | <0.20 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| CMW-27 | CMW-27-011818 | 1/18/2018 | **1.7** | **<1.0**[4] | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | QA/QC-2-011818[8] | 1/18/2018 | **1.6** | **<0.96**[4] | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-27-080118 | 8/1/2018 | **2.7**[7] | **1.0**[5] | **1,000** | <1.0 | 1.3 | 5.9 | 7.4 |
| | QA/QC-2-080118[8] | 8/1/2018 | **2.6**[7] | **0.89**[5] | **1,100** | <1.0 | 1.3 | 5.8 | 7.8 |
| | CMW-27-012319 | 1/23/2019 | **6.9**[7] | **1.6**[5] | **900**[9] | 1.5 | 3.4 | 19 | 17 |
| | QA/QC-2-012319[8] | 1/23/2019 | **6.9**[7] | **1.5**[5] | **940**[9] | 1.3 | 3.3 | 20 | 17 |
| | CMW-27-082219 | 8/22/2019 | **2.7**[7] | **0.56**[5] | **1,500** | 1.2 | <1.0 | 5.2 | 7.9 |
| | QA/QC-2-082219[8] | 8/22/2019 | **3.4**[7] | **0.82**[5] | **1,300** | <4.0 | <4.0 | 4.9 | 5.9 |
| | CMW-27-112619 | 11/26/2019 | **3.3**[7] | **0.94**[5] | **860**[9] | <1.0 | 1.2 | <1.0 | 2.0 |
| | QA/QC-2-112619[8] | 11/26/2019 | **3.9**[7] | **1.1**[5] | **940**[9] | <1.0 | 1.6 | 1.3 | 2.5 |
| | CMW-27-022520 | 2/25/2020 | **1.2** | **1.2** | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | QAQC-2-022520[8] | 2/25/2020 | **1.0** | **1.1** | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-27-052820 | 5/28/2020 | **3.5**[7] | **2.0** | **1,300**[9] | <1.0 | 3.4 | 16 | 4.1 |
| | QA/QC-1-052820[8] | 5/28/2020 | **4.5**[7] | **2.4** | **1,000**[9] | <1.0 | 2.6 | 13 | 3.6 |
| | CMW-27-111220 | 11/12/2020 | **2.1**[7] | **0.70**[5] | **1,700**[9] | <1.0 | <1.0 | 1.8 | 3.9 |
| | QA/QC-2-111220[8] | 11/12/2020 | **2.4**[7] | **0.76**[5] | **1,800**[9] | <1.0 | <1.0 | 1.8 | 4.0 |
| | CMW-27-052521 | 5/25/2021 | **3.1**[7] | **1.4** | **1,100**[9] | <1.0 | <1.0 | 15 | 3.5 |
| | QA/QC-2-052521[8] | 5/25/2021 | **3.1**[7] | **2.3** | **1,200**[9] | 3.9 | <1.0 | 15 | 3.4 |
| | CMW-27-113021 | 11/30/2021 | **8.9**[7] | **4.8** | 770 | <1.0 | <1.0 | 5.0 | 1.7 |
| | QA/QC-2-113021[8] | 11/30/2021 | **6.7**[7] | **2.8** | **960** | 1.2 | <1.0 | 6.5 | 2.1 |
| CMW-28 | CMW-28-011818 | 1/18/2018 | <0.26 | <0.42 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-28-080118 | 8/1/2018 | **0.81** | **0.52**[5] | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-28-012319 | 1/23/2019 | <0.26 | <0.41 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-28-082119 | 8/21/2019 | **0.63** | <0.44 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-28-112619 | 11/26/2019 | **2.8** | **1.9**[5] | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-28-022420 | 2/24/2020 | 0.45 | 0.32 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-28-052720 | 5/27/2020 | <0.21 | 0.23 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-28-111220 | 11/12/2020 | **0.70** | 0.42[5] | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-28-052521 | 5/25/2021 | 0.49 | 0.43 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-28-113021 | 11/30/2021 | <0.20 | <0.20 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| **MTCA Method A Cleanup Levels for Groundwater[6]** | | | **0.5** | **0.5** | **800** | **5** | **1,000** | **700** | **1,000** |

**Table 6**
**Summary of Laboratory Analytical Results for TPH and BTEX in Groundwater – January 2018 through November 2021**
**CHS Auburn Site**
**Auburn, Washington**
**Farallon PN: 301-004**

| Well Identification | Sample Identification | Sample Date | Analytical Results (milligrams per liter) | | Analytical Results (micrograms per liter) | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | DRO[1] | ORO[1] | GRO[2] | Benzene[3] | Toluene[3] | Ethylbenzene[3] | Total Xylenes[3] |
| CMW-29 | CMW-29-011718 | 1/17/2018 | **0.70** | **<0.54**[4] | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-29-073118 | 7/31/2018 | 0.33 | <0.41 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-29-012219 | 1/22/2019 | **1.0** | 0.50[5] | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-29-082219 | 8/22/2019 | <0.25 | <0.41 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-29-112519 | 11/25/2019 | **0.55** | 0.38 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-29-022420 | 2/24/2020 | **0.67** | 0.28 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-29-052720 | 5/27/2020 | **0.97** | **0.71** | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-29-111120 | 11/11/2020 | 0.25 | <0.20 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-29-052421 | 5/24/2021 | **0.71** | 0.43 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-29-112921 | 11/29/2021 | **0.74** | **0.87** | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| CMW-30 | CMW-30-012219 | 1/22/2019 | 0.26 | <0.42 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-30-082119 | 8/21/2019 | <0.25 | <0.40 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-30-112519 | 11/25/2019 | 0.19 | 0.22 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-30-022520 | 2/25/2020 | <0.20 | <0.20 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-30-052720 | 5/27/2020 | 0.36 | 0.30 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-30-111120 | 11/11/2020 | 0.22 | <0.20 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-30-052421 | 5/24/2021 | 0.29 | <0.21 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-30-112921 | 11/29/2021 | 0.23 | <0.20 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| CMW-31 | CMW-31-011818 | 1/18/2018 | <0.26 | <0.41 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-31-073118 | 7/31/2018 | <0.26 | <0.41 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-31-012219 | 1/22/2019 | <0.26 | <0.41 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-31-082219 | 8/22/2019 | 0.34 | <0.45 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-31-112519 | 11/25/2019 | 0.22 | 0.27 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-31-022420 | 2/24/2020 | <0.21 | <0.21 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-31-052820 | 5/28/2020 | <0.21 | 0.32 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-31-111120 | 11/11/2020 | 0.29 | <0.20 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-31-052421 | 5/24/2021 | <0.20 | 0.27 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | CMW-31-112921 | 11/29/2021 | <0.20 | <0.20 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| HMW-9 | HMW-9-011818 | 1/18/2018 | 0.35 | <0.41 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | HMW-9-080118 | 8/1/2018 | 0.46 | <0.41 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | HMW-9-012219 | 1/22/2019 | 0.26 | <0.41 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | HMW-9-082119 | 8/21/2019 | 0.34 | <0.44 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | HMW-9-112519 | 11/25/2019 | 0.40 | 0.42 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | HMW-9-022520 | 2/25/2020 | 0.39 | **1.2** | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | HMW-9-052820 | 5/28/2020 | **0.98** | **2.1** | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | HMW-9-111120 | 11/11/2020 | 0.47 | **0.69** | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | HMW-9-052521 | 5/25/2021 | **0.55** | **1.2** | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | HMW-9-113021 | 11/30/2021 | 0.30 | 0.32 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| **MTCA Method A Cleanup Levels for Groundwater[6]** | | | **0.5** | **0.5** | **800** | **5** | **1,000** | **700** | **1,000** |

**Table 6**
**Summary of Laboratory Analytical Results for TPH and BTEX in Groundwater – January 2018 through November 2021**
**CHS Auburn Site**
**Auburn, Washington**
**Farallon PN: 301-004**

| Well Identification | Sample Identification | Sample Date | Analytical Results (milligrams per liter) | | Analytical Results (micrograms per liter) | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | DRO[1] | ORO[1] | GRO[2] | Benzene[3] | Toluene[3] | Ethylbenzene[3] | Total Xylenes[3] |
| HMW-10 | HMW-10-011718 | 1/17/2018 | **0.72** | <0.41 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | HMW-10-073118 | 7/31/2018 | **0.60**[7] | <0.40 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | HMW-10-012219 | 1/22/2019 | 0.38 | <0.41 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | HMW-10-082119 | 8/21/2019 | **0.51** | <0.41 | <400 | <4.0 | <4.0 | <4.0 | <8.0 |
| | HMW-10-112519 | 11/25/2019 | **5.0** | **1.7**[5] | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | HMW-10-022420 | 2/24/2020 | **0.71** | 0.34 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | HMW-10-052820 | 5/28/2020 | **1.2** | **0.77** | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | HMW-10-111220 | 11/12/2020 | 0.50 | <0.21 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | HMW-10-052421 | 5/24/2021 | **0.95** | **0.51** | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | HMW-10-113021 | 11/30/2021 | 0.50 | 0.23 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| HMW-11 | HMW-11-011818 | 1/18/2018 | **2.5** | **<1.3**[4] | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | HMW-11-080118 | 8/1/2018 | **1.6**[7] | 0.48[5] | **1,600** | 1.0 | <1.0 | <1.0 | <2.0 |
| | HMW-11-012319 | 1/23/2019 | **1.9**[7] | <0.41 | **1,900**[9] | 1.4 | <1.0 | 1.2 | <2.0 |
| | HMW-11-082219 | 8/22/2019 | **3.3**[7] | 0.49[5] | **1,400** | <4.0 | <4.0 | <4.0 | <8.0 |
| | HMW-11-112619 | 11/26/2019 | **3.2**[7] | **0.63**[5] | **1,200**[9] | 1.0 | 1.0 | <1.0 | <2.0 |
| | HMW-11-022520 | 2/25/2020 | **4.9** | **2.1** | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | HMW-11-052820 | 5/28/2020 | **4.1**[7] | **2.1** | **920**[9] | <1.0 | 1.5 | <1.0 | <2.0 |
| | HMW-11-111220 | 11/12/2020 | **1.4**[7] | **0.51**[5] | 410[9] | <1.0 | <1.0 | <1.0 | <2.0 |
| | HMW-11-052521 | 5/25/2021 | **3.5**[7] | **1.1** | 730[9] | <1.0 | <1.0 | <1.0 | <2.0 |
| | HMW-11-113021 | 11/30/2021 | 0.36 | 0.38 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| HMW-13 | HMW-13-011818 | 1/18/2018 | <0.26 | <0.41 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | HMW-13-080118 | 8/1/2018 | <0.26 | <0.41 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | HMW-13-012319 | 1/23/2019 | <0.26 | <0.41 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | HMW-13-082119 | 8/21/2019 | <0.30 | <0.48 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | HMW-13-112619 | 11/26/2019 | 0.27 | <0.21 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | HMW-13-022420 | 2/24/2020 | <0.21 | 0.22 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | HMW-13-052720 | 5/27/2020 | <0.21 | 0.24 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | HMW-13-111120 | 11/11/2020 | <0.20 | <0.20 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | HMW-13-052521 | 5/25/2021 | <0.20 | 0.24 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| | HMW-13-113021 | 11/30/2021 | <0.20 | <0.20 | <100 | <1.0 | <1.0 | <1.0 | <2.0 |
| **MTCA Method A Cleanup Levels for Groundwater[6]** | | | **0.5** | **0.5** | **800** | **5** | **1,000** | **700** | **1,000** |

NOTES:
<denotes analyte not detected at or exceeding the laboratory reporting limit listed.
Results in **bold** denote sample result or reporting limit exceeds applicable MTCA Method A cleanup levels for groundwater.
[1]Analyzed by Northwest Method NWTPH-Dx. Samples analyzed by OnSite Environmental Inc. between June 2008 and November 2016 were analyzed using acid-silica gel cleanup procedure.
[2]Analyzed by Northwest Method NWTPH-Gx.
[3]Analyzed by U.S. Environmental Protection Agency Method 8021B.
[4]The practical quantitation limit is elevated due to interferences in the sample.
[5]Hydrocarbons in the diesel range are impacting the oil-range result.
[6]MTCA Method A Cleanup Levels for Groundwater, Table 720-1 of Section 900 of Chapter 173-340 of the Washington Administrative Code, as revised 2013.
[7]Hydrocarbons in the gasoline-range are impacting the diesel-range result.
[8]Quality assurance/quality control field duplicate sample.
[9]Hydrocarbons indicative of heavier fuels present in the sample are impacting the gasoline result.

DRO = TPH as diesel-range organics
GRO = TPH as gasoline-range organics
MTCA = Washington State Model Toxics Control Act Cleanup Regulation
ORO = TPH as oil-range organics
TPH = total petroleum hydrocarbons

**Table 7**
**Summary of Laboratory Analytical Results for DRO and ORO in Groundwater – November 2021**
**CHS Auburn Site**
**Auburn, Washington**
**Farallon PN: 301-004**

| Well Identification | Sample Identification | Sample Date | Analytical Results (milligrams per liter) | | | |
|---|---|---|---|---|---|---|
| | | | NWTPH-Dx without Silica Gel[1] | | NWTPH-Dx with Silica Gel[1] | |
| | | | DRO | ORO | DRO | ORO |
| CMW-2 | CMW-2-113021 | 11/30/2021 | **1.4** | **1.2** | <0.20 | <0.20 |
| CMW-8 | CMW-8-113021 | 11/30/2021 | **0.58** | 0.35 | <0.20 | <0.20 |
| CMW-10 | CMW-10-113021 | 11/30/2021 | **2.8** | **2.9** | <0.20 | <0.20 |
| CMW-12 | CMW-12-113021 | 11/30/2021 | **0.64** | 0.33 | <0.20 | <0.20 |
| | QA/QC-1-113021[2] | 11/30/2021 | **0.65** | 0.32 | <0.21 | <0.21 |
| CMW-13 | CMW-13-113021 | 11/30/2021 | **0.57** | 0.34 | <0.21 | <0.21 |
| CMW-25 | CMW-25-112921 | 11/29/2021 | <0.20 | <0.20 | <0.20 | <0.20 |
| CMW-26 | CMW-26-112921 | 11/29/2021 | <0.20 | <0.20 | <0.20 | <0.20 |
| CMW-27 | CMW-27-113021 | 11/30/2021 | **8.9**[3] | **4.8** | **0.88**[3] | <0.21 |
| | QA/QC-2-113021[2] | 11/30/2021 | **6.7**[3] | **2.8** | **0.93**[3] | <0.21 |
| CMW-28 | CMW-28-113021 | 11/30/2021 | <0.20 | <0.20 | <0.20 | <0.20 |
| CMW-29 | CMW-29-112921 | 11/29/2021 | **0.74** | **0.87** | <0.20 | <0.20 |
| CMW-30 | CMW-30-112921 | 11/29/2021 | 0.23 | <0.20 | <0.20 | <0.20 |
| CMW-31 | CMW-31-112921 | 11/29/2021 | <0.20 | <0.20 | <0.20 | <0.20 |
| HMW-9 | HMW-9-113021 | 11/30/2021 | 0.30 | 0.32 | <0.21 | <0.21 |
| HMW-10 | HMW-10-113021 | 11/30/2021 | 0.50 | 0.23 | <0.20 | <0.20 |
| HMW-11 | HMW-11-113021 | 11/30/2021 | 0.36 | 0.38 | <0.20 | <0.20 |
| HMW-13 | HMW-13-113021 | 11/30/2021 | <0.20 | <0.20 | <0.20 | <0.20 |
| **MTCA Method A Cleanup Levels for Groundwater[4]** | | | **0.5** | **0.5** | **0.5** | **0.5** |

NOTES:

<denotes analyte not detected at or exceeding the laboratory reporting limit listed.

Results in **bold** denote sample result or reporting limit exceeds applicable MTCA Method A cleanup levels for groundwater.

[1]Analyzed by Northwest Method NWTPH-Dx with and without an acid-silica gel cleanup procedure.

[2]Quality assurance/quality control field duplicate sample.

[3]Hydrocarbons in the gasoline-range are impacting the diesel-range result.

[4]MTCA Method A Cleanup Levels for Groundwater, Table 720-1 of Section 900 of Chapter 173-340 of the Washington Administrative Code, as revised 2013.

DRO = TPH as diesel-range organics

MTCA = Washington State Model Toxics Control Act Cleanup Regulation

ORO = TPH as oil-range organics

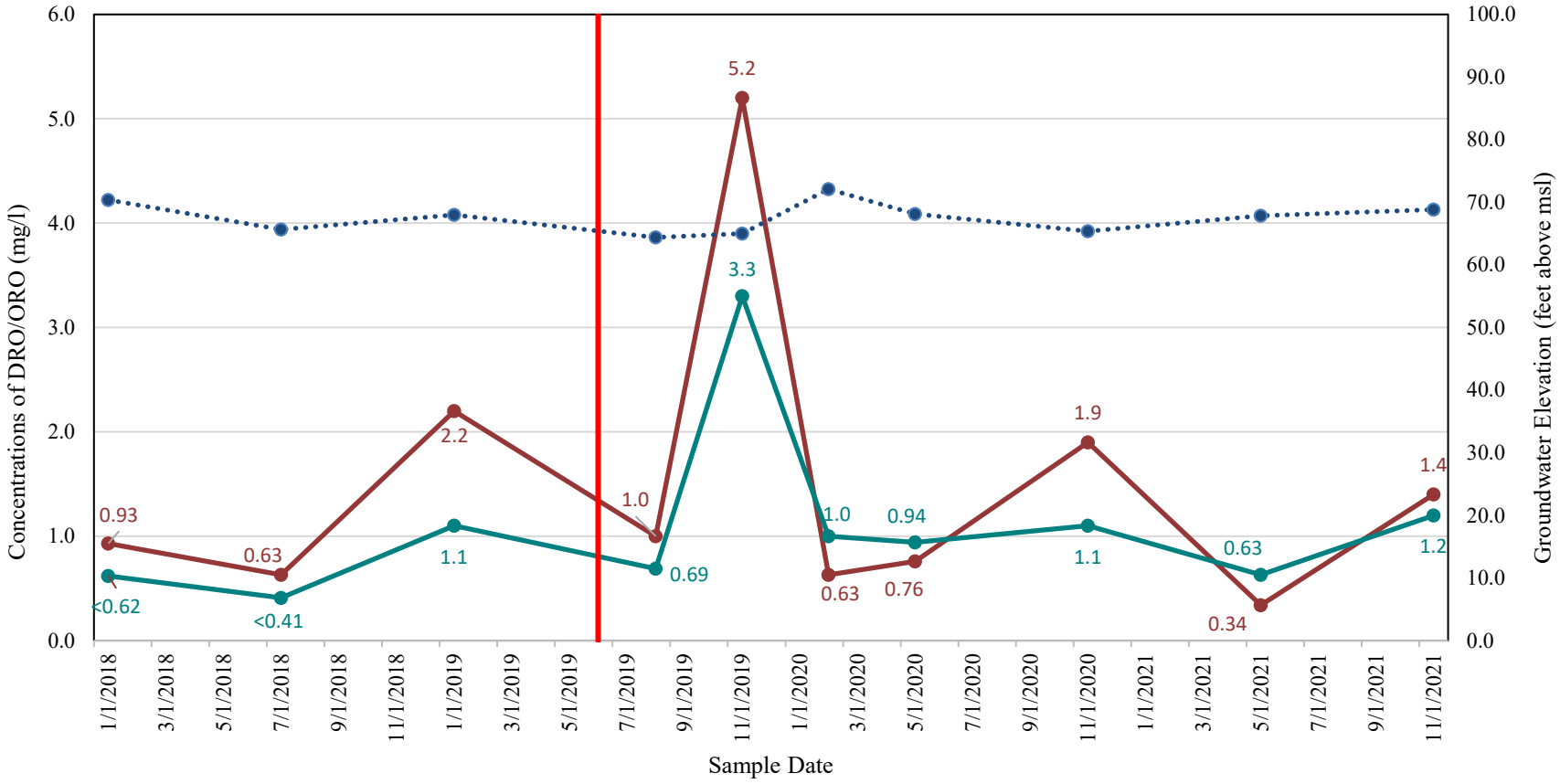
TPH = total petroleum hydrocarbons

# CHARTS

THIRD AND FOURTH QUARTER 2021
GROUNDWATER MONITORING AND TREATMENT SYSTEM
OPERATION AND MAINTENANCE REPORT
CHS Auburn Site
Auburn, Washington

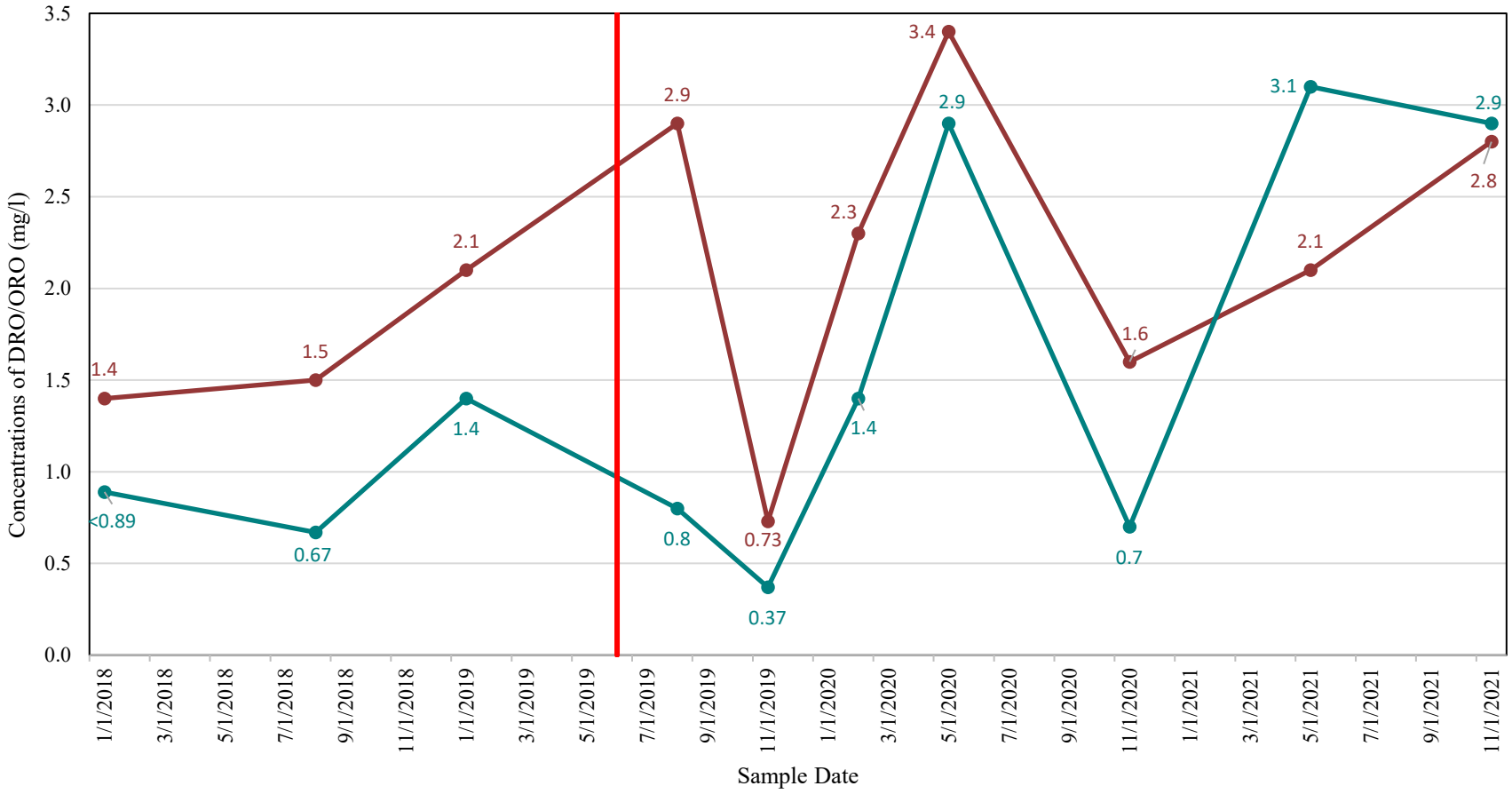
Farallon PN: 301-004

**Chart 1**
**DRO and ORO Concentration Data Trends for Monitoring Well CMW-2**
**CHS Auburn Site**
**Auburn, Washington**
**Farallon PN: 301-004**



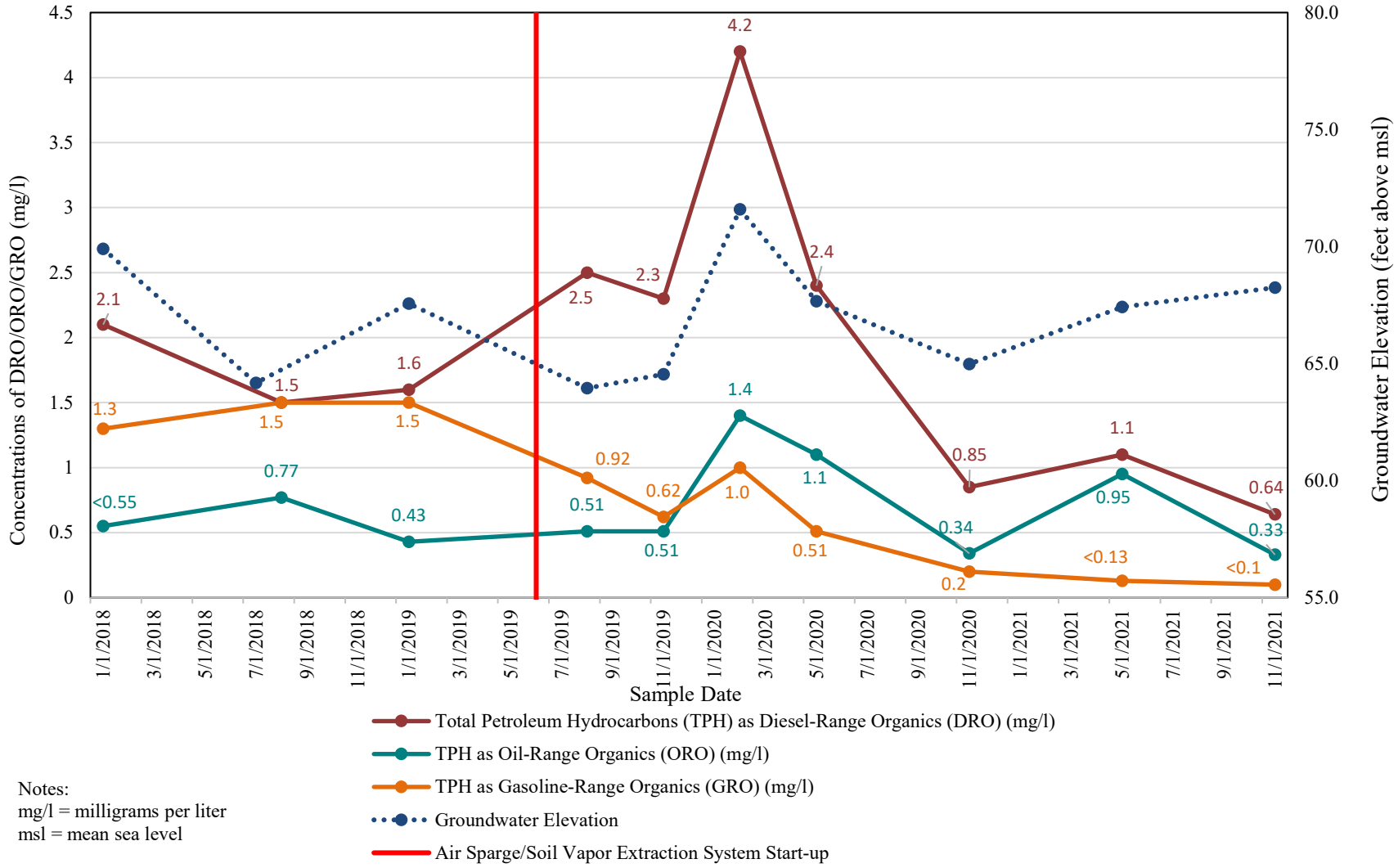

Notes:
mg/l = milligrams per liter
msl = mean sea level

**Chart 2**
**DRO and ORO Concentration Data Trends for Monitoring Well CMW-10**
**CHS Auburn Site**
**Auburn, Washington**
**Farallon PN: 301-004**



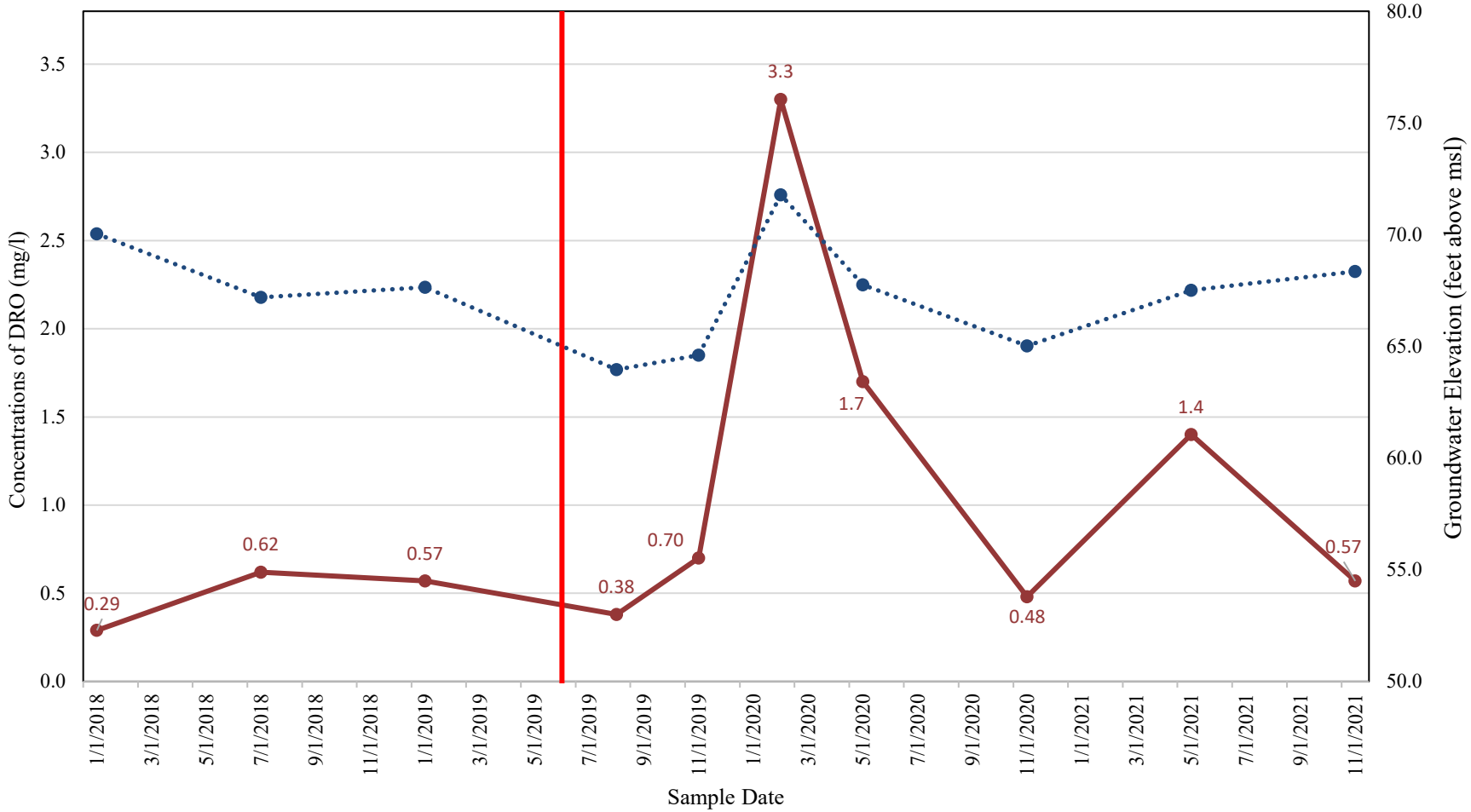

Notes:
mg/l = milligrams per liter

**Chart 3**
**DRO, ORO, and GRO Concentration Data Trends for Monitoring Well CMW-12**
**CHS Auburn Site**
**Auburn, Washington**
**Farallon PN: 301-004**



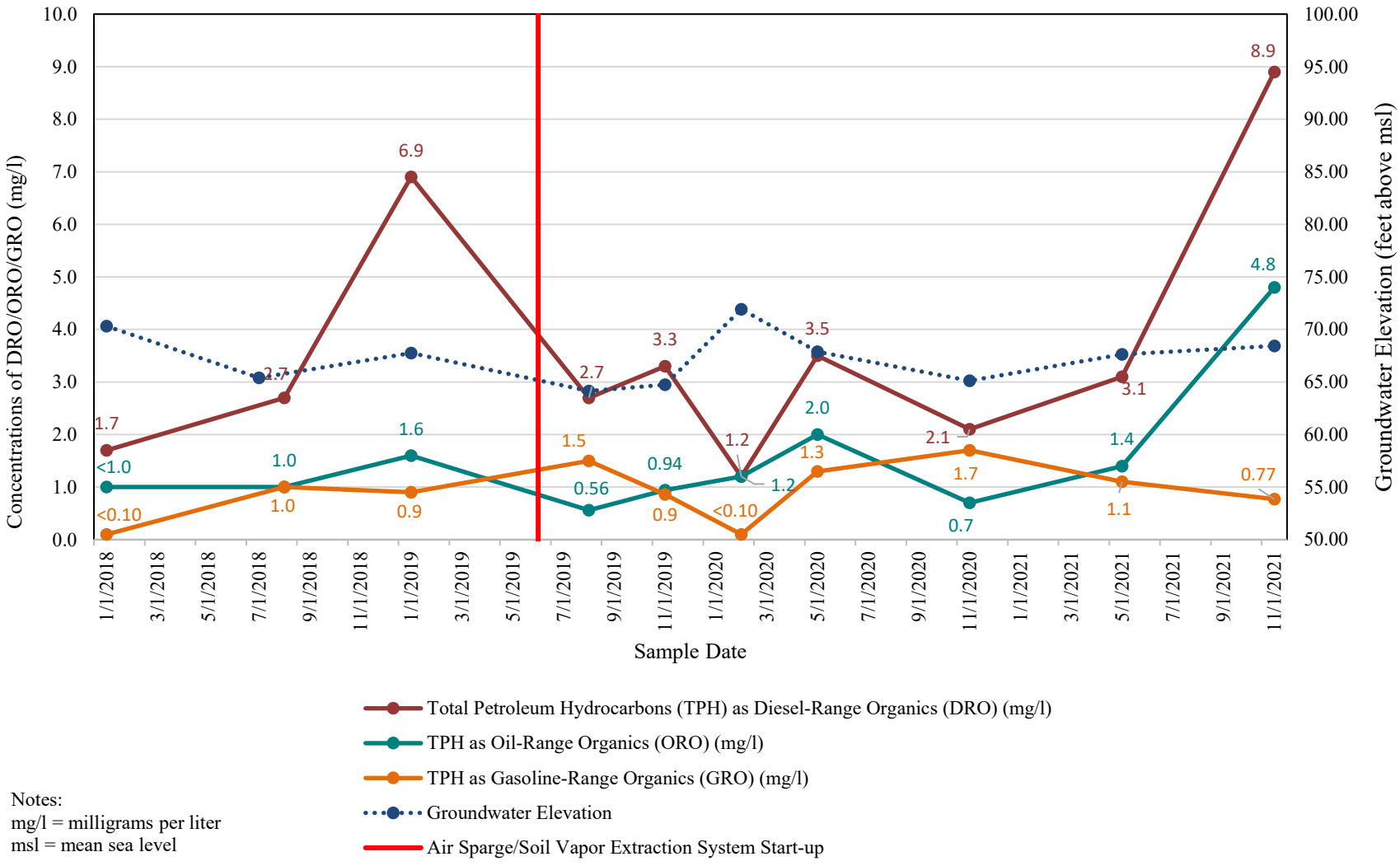

Notes:
mg/l = milligrams per liter
msl = mean sea level

**Chart 4**
**DRO Concentration Data Trend for Monitoring Well CMW-13**
**CHS Auburn Site**
**Auburn, Washington**
**Farallon PN: 301-004**



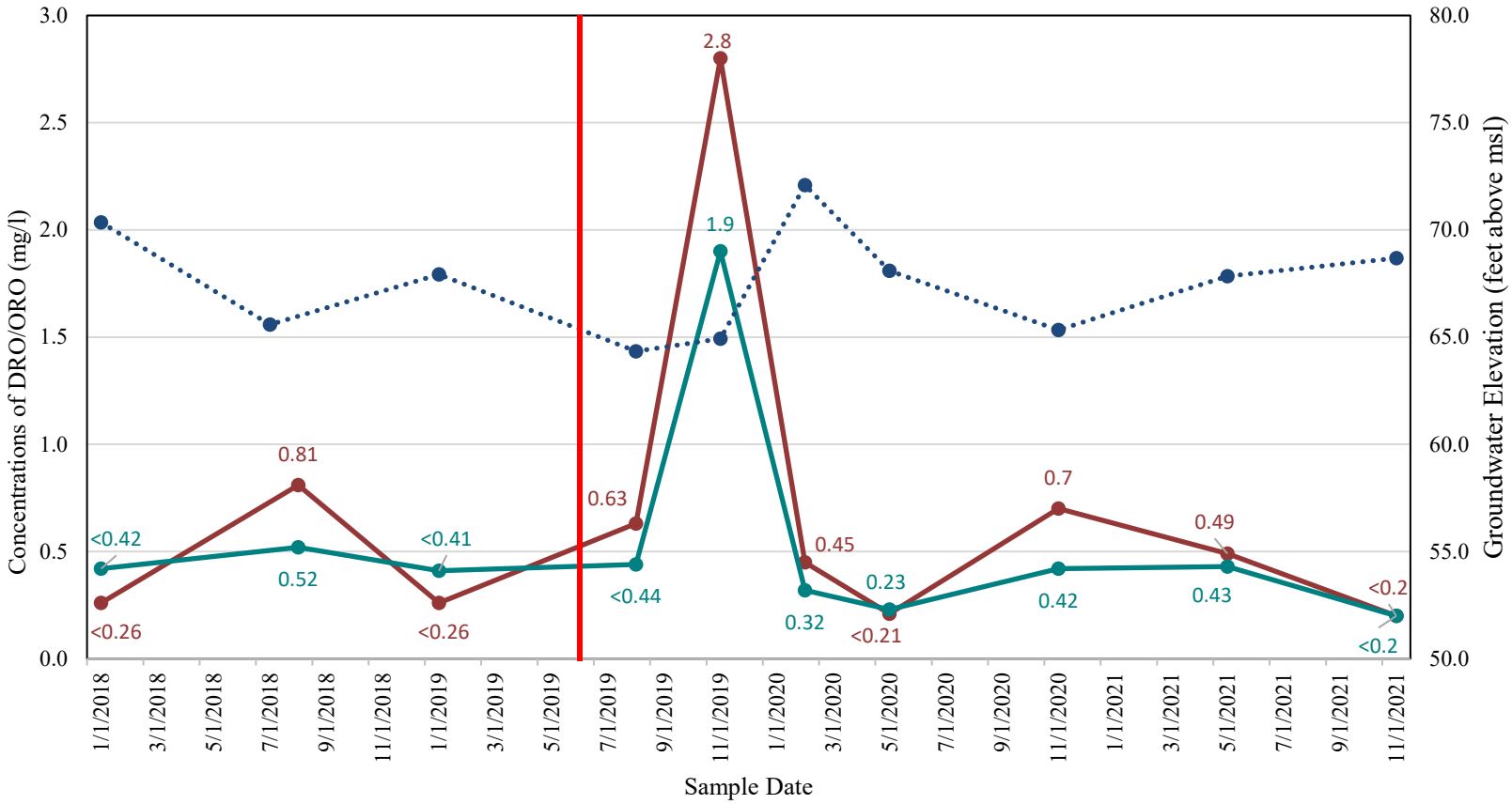

Notes:
mg/l = milligrams per liter
msl = mean sea level

**Chart 5**
**DRO, ORO, and GRO Concentration Data Trends for Monitoring Well CMW-27**
**CHS Auburn Site**
**Auburn, Washington**
**Farallon PN: 301-004**



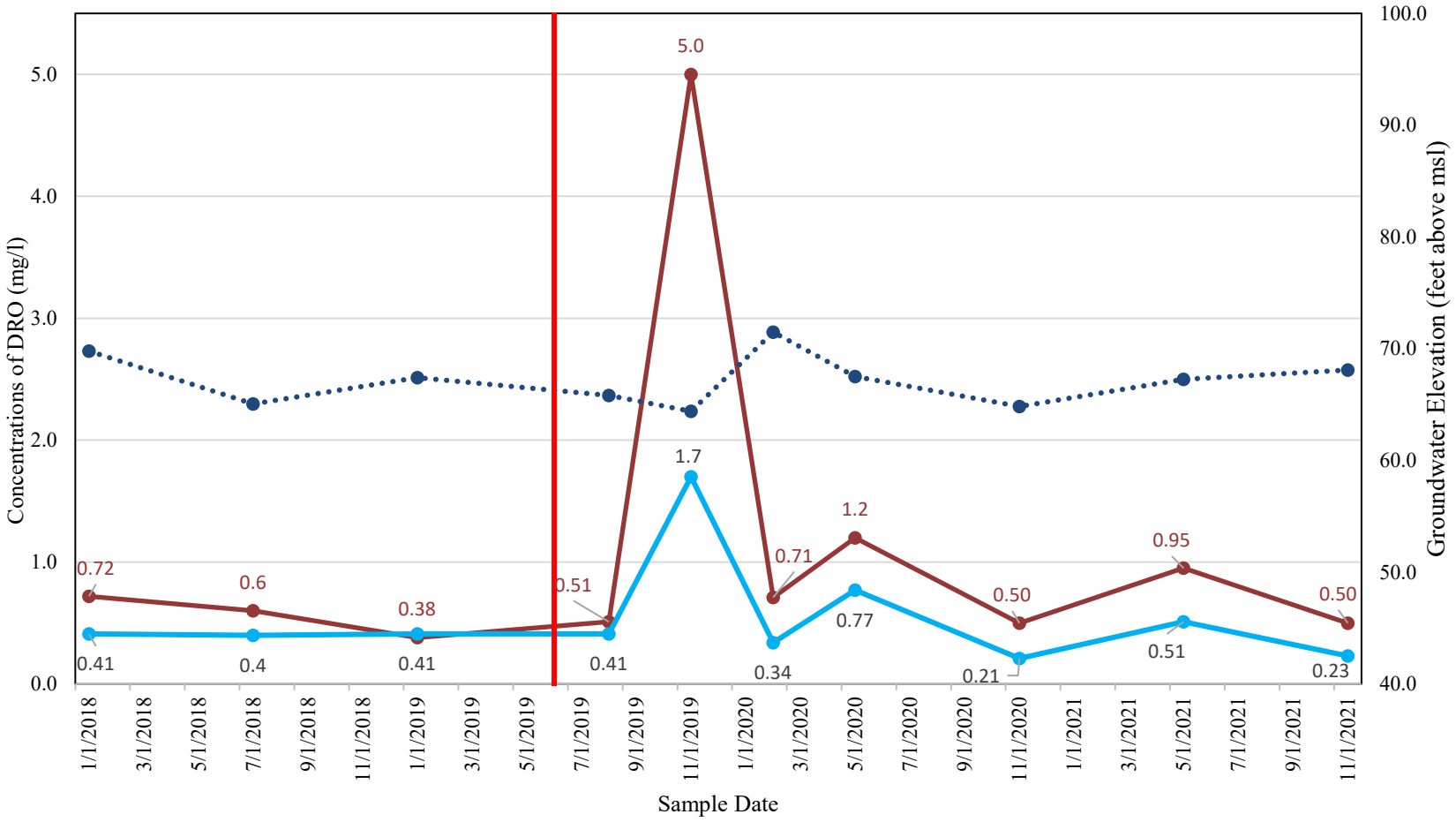

Notes:
mg/l = milligrams per liter
msl = mean sea level

**Chart 6**
**DRO and ORO Concentration Data Trends for Monitoring Well CMW-28**
**CHS Auburn Site**
**Auburn, Washington**
**Farallon PN: 301-004**




Notes:
mg/l = milligrams per liter
msl = mean sea level

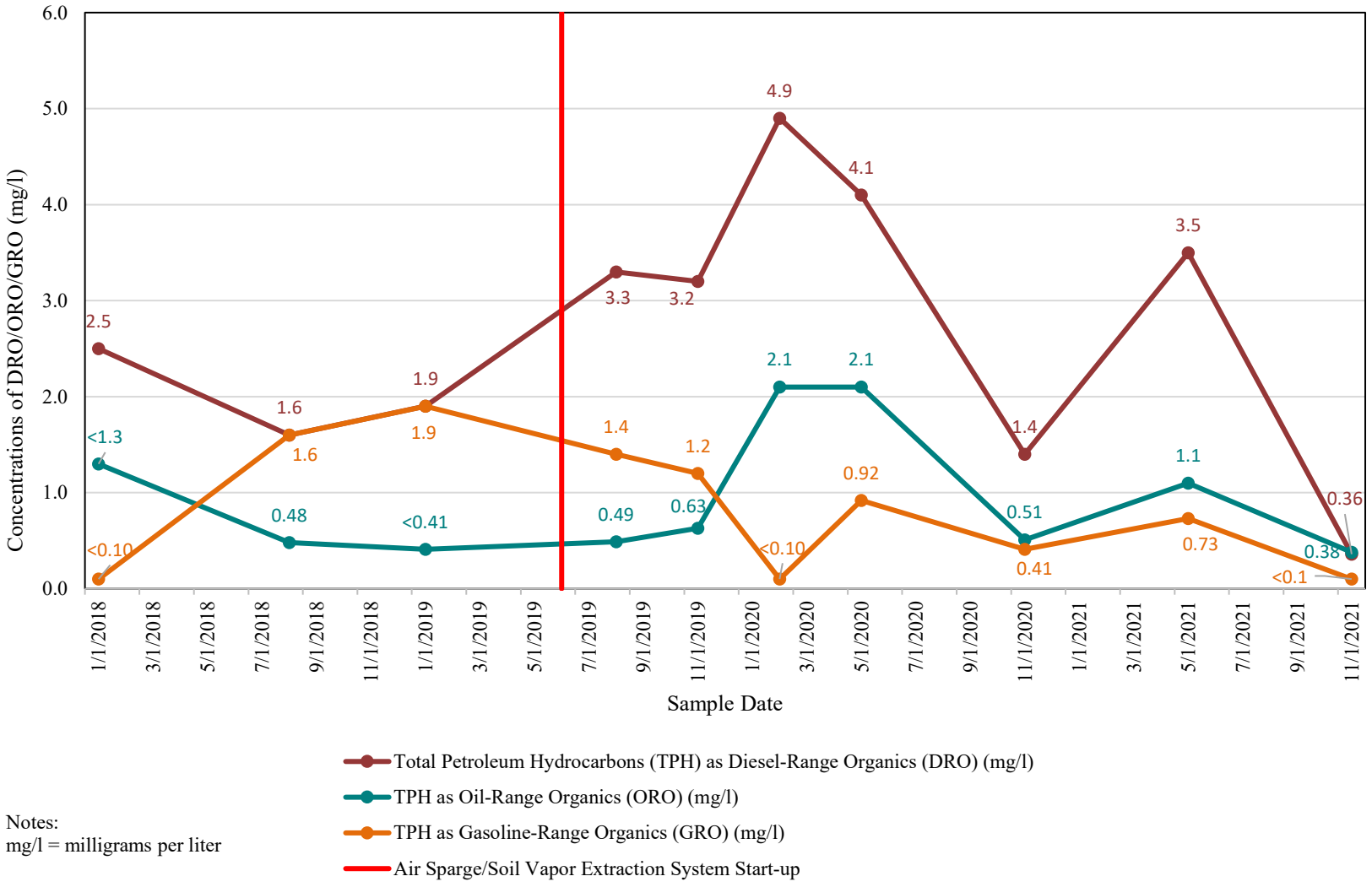
**Chart 7**
**DRO Concentration Data Trend for Monitoring Well HMW-10**
**CHS Auburn Site**
**Auburn, Washington**
**Farallon PN: 301-004**




Notes:
mg/l = milligrams per liter
msl = mean sea level

Total Petroleum Hydrocarbons (TPH) as Diesel-Range Organics (DRO) (mg/l)
TPH as Oil-Range Organics (ORO) (mg/l)

**Chart 8**
**DRO, ORO, and GRO Concentration Data Trends for Monitoring Well HMW-11**
**CHS Auburn Site**
**Auburn, Washington**
**Farallon PN: 301-004**




Notes:
mg/l = milligrams per liter

# APPENDIX A
# LABORATORY ANALYTICAL REPORTS

THIRD AND FOURTH QUARTER 2021
GROUNDWATER MONITORING AND TREATMENT SYSTEM
OPERATION AND MAINTENANCE REPORT
CHS Auburn Site
Auburn, Washington

Farallon PN: 301-004

OnSite Environmental Inc.
14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

December 9, 2021

Javan Ruark
Farallon Consulting
975 5th Avenue NW
Issaquah, WA 98027

Re: Analytical Data for Project 301-004
Laboratory Reference No. 2112-003

Dear Javan:

Enclosed are the analytical results and associated quality control data for samples submitted on December 1, 2021.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

Date of Report: December 9, 2021
Samples Submitted: December 1, 2021
Laboratory Reference: 2112-003
Project: 301-004

**Case Narrative**

Samples were collected on November 29 and 30, 2021 and received by the laboratory on December 1, 2021. They were maintained at the laboratory at a temperature of 2°C to 6°C.

Please note that any and all soil sample results are reported on a dry-weight basis, unless otherwise noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

Date of Report: December 9, 2021
Samples Submitted: December 1, 2021
Laboratory Reference: 2112-003
Project: 301-004

**GASOLINE RANGE ORGANICS/BTEX**
**NWTPH-Gx/EPA 8021B**

Matrix: Water
Units: ug/L (ppb)

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **Client ID:** | **CMW-25-112921** | | | | | |
| Laboratory ID: | 12-003-01 | | | | | |
| Benzene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| Toluene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| Ethyl Benzene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| m,p-Xylene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| o-Xylene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| Gasoline | **ND** | 100 | NWTPH-Gx | 12-2-21 | 12-2-21 | |
| *Surrogate:* | *Percent Recovery* | *Control Limits* | | | | |
| *Fluorobenzene* | *98* | *66-117* | | | | |
| **Client ID:** | **CMW-29-112921** | | | | | |
| Laboratory ID: | 12-003-02 | | | | | |
| Benzene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| Toluene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| Ethyl Benzene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| m,p-Xylene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| o-Xylene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| Gasoline | **ND** | 100 | NWTPH-Gx | 12-2-21 | 12-2-21 | |
| *Surrogate:* | *Percent Recovery* | *Control Limits* | | | | |
| *Fluorobenzene* | *99* | *66-117* | | | | |
| **Client ID:** | **CMW-30-112921** | | | | | |
| Laboratory ID: | 12-003-03 | | | | | |
| Benzene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| Toluene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| Ethyl Benzene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| m,p-Xylene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| o-Xylene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| Gasoline | **ND** | 100 | NWTPH-Gx | 12-2-21 | 12-2-21 | |
| *Surrogate:* | *Percent Recovery* | *Control Limits* | | | | |
| *Fluorobenzene* | *99* | *66-117* | | | | |

Date of Report: December 9, 2021
Samples Submitted: December 1, 2021
Laboratory Reference: 2112-003
Project: 301-004

**GASOLINE RANGE ORGANICS/BTEX**
**NWTPH-Gx/EPA 8021B**

Matrix: Water
Units: ug/L (ppb)

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **Client ID:** | **CMW-26-112921** | | | | | |
| Laboratory ID: | 12-003-04 | | | | | |
| Benzene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| Toluene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| Ethyl Benzene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| m,p-Xylene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| o-Xylene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| Gasoline | **ND** | 100 | NWTPH-Gx | 12-2-21 | 12-2-21 | |
| *Surrogate:* | *Percent Recovery* | *Control Limits* | | | | |
| *Fluorobenzene* | *98* | *66-117* | | | | |
| **Client ID:** | **CMW-31-112921** | | | | | |
| Laboratory ID: | 12-003-05 | | | | | |
| Benzene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| Toluene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| Ethyl Benzene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| m,p-Xylene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| o-Xylene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| Gasoline | **ND** | 100 | NWTPH-Gx | 12-2-21 | 12-2-21 | |
| *Surrogate:* | *Percent Recovery* | *Control Limits* | | | | |
| *Fluorobenzene* | *99* | *66-117* | | | | |
| **Client ID:** | **HMW-10-113021** | | | | | |
| Laboratory ID: | 12-003-06 | | | | | |
| Benzene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| Toluene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| Ethyl Benzene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| m,p-Xylene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| o-Xylene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| Gasoline | **ND** | 100 | NWTPH-Gx | 12-2-21 | 12-2-21 | |
| *Surrogate:* | *Percent Recovery* | *Control Limits* | | | | |
| *Fluorobenzene* | *97* | *66-117* | | | | |

Date of Report: December 9, 2021
Samples Submitted: December 1, 2021
Laboratory Reference: 2112-003
Project: 301-004

**GASOLINE RANGE ORGANICS/BTEX**
**NWTPH-Gx/EPA 8021B**

Matrix: Water
Units: ug/L (ppb)

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **Client ID:** | **CMW-28-113021** | | | | | |
| Laboratory ID: | 12-003-07 | | | | | |
| Benzene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| Toluene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| Ethyl Benzene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| m,p-Xylene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| o-Xylene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| Gasoline | **ND** | 100 | NWTPH-Gx | 12-2-21 | 12-2-21 | |
| *Surrogate:* | *Percent Recovery* | *Control Limits* | | | | |
| *Fluorobenzene* | *99* | *66-117* | | | | |
| **Client ID:** | **CMW-13-113021** | | | | | |
| Laboratory ID: | 12-003-08 | | | | | |
| Benzene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| Toluene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| Ethyl Benzene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| m,p-Xylene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| o-Xylene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| Gasoline | **ND** | 100 | NWTPH-Gx | 12-2-21 | 12-2-21 | |
| *Surrogate:* | *Percent Recovery* | *Control Limits* | | | | |
| *Fluorobenzene* | *97* | *66-117* | | | | |
| **Client ID:** | **HMW-11-113021** | | | | | |
| Laboratory ID: | 12-003-09 | | | | | |
| Benzene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| Toluene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| Ethyl Benzene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| m,p-Xylene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| o-Xylene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| Gasoline | **ND** | 100 | NWTPH-Gx | 12-2-21 | 12-2-21 | |
| *Surrogate:* | *Percent Recovery* | *Control Limits* | | | | |
| *Fluorobenzene* | *99* | *66-117* | | | | |

Date of Report: December 9, 2021
Samples Submitted: December 1, 2021
Laboratory Reference: 2112-003
Project: 301-004

**GASOLINE RANGE ORGANICS/BTEX**
**NWTPH-Gx/EPA 8021B**

Matrix: Water
Units: ug/L (ppb)

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **Client ID:** | **CMW-12-113021** | | | | | |
| Laboratory ID: | 12-003-10 | | | | | |
| Benzene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| Toluene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| Ethyl Benzene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| m,p-Xylene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| o-Xylene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| Gasoline | **ND** | 100 | NWTPH-Gx | 12-2-21 | 12-2-21 | |
| *Surrogate:* | *Percent Recovery* | *Control Limits* | | | | |
| *Fluorobenzene* | *98* | *66-117* | | | | |
| **Client ID:** | **QA/QC-1-113021** | | | | | |
| Laboratory ID: | 12-003-11 | | | | | |
| Benzene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| Toluene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| Ethyl Benzene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| m,p-Xylene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| o-Xylene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| Gasoline | **ND** | 100 | NWTPH-Gx | 12-2-21 | 12-2-21 | |
| *Surrogate:* | *Percent Recovery* | *Control Limits* | | | | |
| *Fluorobenzene* | *98* | *66-117* | | | | |
| **Client ID:** | **CMW-27-113021** | | | | | |
| Laboratory ID: | 12-003-12 | | | | | |
| Benzene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| Toluene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| Ethyl Benzene | **5.0** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| m,p-Xylene | **1.7** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| o-Xylene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| Gasoline | **770** | 100 | NWTPH-Gx | 12-2-21 | 12-2-21 | |
| *Surrogate:* | *Percent Recovery* | *Control Limits* | | | | |
| *Fluorobenzene* | *97* | *66-117* | | | | |

Date of Report: December 9, 2021
Samples Submitted: December 1, 2021
Laboratory Reference: 2112-003
Project: 301-004

**GASOLINE RANGE ORGANICS/BTEX**
**NWTPH-Gx/EPA 8021B**

Matrix: Water
Units: ug/L (ppb)

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **Client ID:** | **QA/QC-2-113021** | | | | | |
| Laboratory ID: | 12-003-13 | | | | | |
| Benzene | **1.2** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| Toluene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| Ethyl Benzene | **6.5** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| m,p-Xylene | **2.1** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| o-Xylene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| Gasoline | **960** | 100 | NWTPH-Gx | 12-2-21 | 12-2-21 | |
| *Surrogate:* | *Percent Recovery* | *Control Limits* | | | | |
| *Fluorobenzene* | *99* | *66-117* | | | | |
| **Client ID:** | **CMW-10-113021** | | | | | |
| Laboratory ID: | 12-003-14 | | | | | |
| Benzene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| Toluene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| Ethyl Benzene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| m,p-Xylene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| o-Xylene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| Gasoline | **ND** | 100 | NWTPH-Gx | 12-2-21 | 12-2-21 | |
| *Surrogate:* | *Percent Recovery* | *Control Limits* | | | | |
| *Fluorobenzene* | *92* | *66-117* | | | | |
| **Client ID:** | **CMW-2-113021** | | | | | |
| Laboratory ID: | 12-003-15 | | | | | |
| Benzene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| Toluene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| Ethyl Benzene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| m,p-Xylene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| o-Xylene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| Gasoline | **ND** | 100 | NWTPH-Gx | 12-2-21 | 12-2-21 | |
| *Surrogate:* | *Percent Recovery* | *Control Limits* | | | | |
| *Fluorobenzene* | *98* | *66-117* | | | | |

Date of Report: December 9, 2021
Samples Submitted: December 1, 2021
Laboratory Reference: 2112-003
Project: 301-004

**GASOLINE RANGE ORGANICS/BTEX**
**NWTPH-Gx/EPA 8021B**

Matrix: Water
Units: ug/L (ppb)

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **Client ID:** | **CMW-8-113021** | | | | | |
| Laboratory ID: | 12-003-16 | | | | | |
| Benzene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| Toluene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| Ethyl Benzene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| m,p-Xylene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| o-Xylene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| Gasoline | **ND** | 100 | NWTPH-Gx | 12-2-21 | 12-2-21 | |
| *Surrogate:* | *Percent Recovery* | *Control Limits* | | | | |
| *Fluorobenzene* | *96* | *66-117* | | | | |
| **Client ID:** | **HMW-13-113021** | | | | | |
| Laboratory ID: | 12-003-17 | | | | | |
| Benzene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| Toluene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| Ethyl Benzene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| m,p-Xylene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| o-Xylene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| Gasoline | **ND** | 100 | NWTPH-Gx | 12-2-21 | 12-2-21 | |
| *Surrogate:* | *Percent Recovery* | *Control Limits* | | | | |
| *Fluorobenzene* | *98* | *66-117* | | | | |
| **Client ID:** | **HMW-9-113021** | | | | | |
| Laboratory ID: | 12-003-18 | | | | | |
| Benzene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| Toluene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| Ethyl Benzene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| m,p-Xylene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| o-Xylene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| Gasoline | **ND** | 100 | NWTPH-Gx | 12-2-21 | 12-2-21 | |
| *Surrogate:* | *Percent Recovery* | *Control Limits* | | | | |
| *Fluorobenzene* | *98* | *66-117* | | | | |

Date of Report: December 9, 2021
Samples Submitted: December 1, 2021
Laboratory Reference: 2112-003
Project: 301-004

**GASOLINE RANGE ORGANICS/BTEX**
**NWTPH-Gx/EPA 8021B**
**QUALITY CONTROL**

Matrix: Water
Units: ug/L (ppb)

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **METHOD BLANK** | | | | | | |
| Laboratory ID: | MB1202W1 | | | | | |
| Benzene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| Toluene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| Ethyl Benzene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| m,p-Xylene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| o-Xylene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| Gasoline | **ND** | 100 | NWTPH-Gx | 12-2-21 | 12-2-21 | |
| *Surrogate:* | *Percent Recovery* | *Control Limits* | | | | |
| *Fluorobenzene* | *100* | *66-117* | | | | |
| Laboratory ID: | MB1202W2 | | | | | |
| Benzene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| Toluene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| Ethyl Benzene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| m,p-Xylene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| o-Xylene | **ND** | 1.0 | EPA 8021B | 12-2-21 | 12-2-21 | |
| Gasoline | **ND** | 100 | NWTPH-Gx | 12-2-21 | 12-2-21 | |
| *Surrogate:* | *Percent Recovery* | *Control Limits* | | | | |
| *Fluorobenzene* | *100* | *66-117* | | | | |

Date of Report: December 9, 2021
Samples Submitted: December 1, 2021
Laboratory Reference: 2112-003
Project: 301-004

**GASOLINE RANGE ORGANICS/BTEX**
**NWTPH-Gx/EPA 8021B**
**QUALITY CONTROL**

Matrix: Water
Units: ug/L (ppb)

| Analyte | Result | | Spike Level | | Source Result | Percent Recovery | | Recovery Limits | RPD | RPD Limit | Flags |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **DUPLICATE** | | | | | | | | | | | |
| Laboratory ID: | 12-003-01 | | | | | | | | | | |
| | ORIG | DUP | | | | | | | | | |
| Benzene | **ND** | **ND** | NA | NA | | NA | | NA | NA | 30 | |
| Toluene | **ND** | **ND** | NA | NA | | NA | | NA | NA | 30 | |
| Ethyl Benzene | **ND** | **ND** | NA | NA | | NA | | NA | NA | 30 | |
| m,p-Xylene | **ND** | **ND** | NA | NA | | NA | | NA | NA | 30 | |
| o-Xylene | **ND** | **ND** | NA | NA | | NA | | NA | NA | 30 | |
| Gasoline | **ND** | **ND** | NA | NA | | NA | | NA | NA | 30 | |
| *Surrogate:* | | | | | | | | | | | |
| *Fluorobenzene* | | | | | | *98* | *98* | *66-117* | | | |
| Laboratory ID: | 12-003-02 | | | | | | | | | | |
| | ORIG | DUP | | | | | | | | | |
| Benzene | **ND** | **ND** | NA | NA | | NA | | NA | NA | 30 | |
| Toluene | **ND** | **ND** | NA | NA | | NA | | NA | NA | 30 | |
| Ethyl Benzene | **ND** | **ND** | NA | NA | | NA | | NA | NA | 30 | |
| m,p-Xylene | **ND** | **ND** | NA | NA | | NA | | NA | NA | 30 | |
| o-Xylene | **ND** | **ND** | NA | NA | | NA | | NA | NA | 30 | |
| Gasoline | **ND** | **ND** | NA | NA | | NA | | NA | NA | 30 | |
| *Surrogate:* | | | | | | | | | | | |
| *Fluorobenzene* | | | | | | *99* | *99* | *66-117* | | | |
| **SPIKE BLANKS** | | | | | | | | | | | |
| Laboratory ID: | SB1202W1 | | | | | | | | | | |
| | SB | SBD | SB | SBD | | SB | SBD | | | | |
| Benzene | **49.9** | **51.3** | 50.0 | 50.0 | | **100** | **103** | 80-116 | 3 | 11 | |
| Toluene | **50.4** | **51.6** | 50.0 | 50.0 | | **101** | **103** | 82-118 | 2 | 12 | |
| Ethyl Benzene | **50.6** | **51.8** | 50.0 | 50.0 | | **101** | **104** | 82-118 | 2 | 12 | |
| m,p-Xylene | **50.2** | **51.2** | 50.0 | 50.0 | | **100** | **102** | 81-118 | 2 | 12 | |
| o-Xylene | **50.7** | **51.6** | 50.0 | 50.0 | | **101** | **103** | 81-116 | 2 | 11 | |
| *Surrogate:* | | | | | | | | | | | |
| *Fluorobenzene* | | | | | | *103* | *103* | *66-117* | | | |

Date of Report: December 9, 2021
Samples Submitted: December 1, 2021
Laboratory Reference: 2112-003
Project: 301-004

**DIESEL AND HEAVY OIL RANGE ORGANICS**
**NWTPH-Dx**

Matrix: Water
Units: mg/L (ppm)

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **Client ID:** | **CMW-25-112921** | | | | | |
| Laboratory ID: | 12-003-01 | | | | | |
| Diesel Range Organics | **ND** | 0.20 | NWTPH-Dx | 12-6-21 | 12-6-21 | |
| Lube Oil Range Organics | **ND** | 0.20 | NWTPH-Dx | 12-6-21 | 12-6-21 | |
| *Surrogate:* | *Percent Recovery* | *Control Limits* | | | | |
| *o-Terphenyl* | *121* | *50-150* | | | | |
| **Client ID:** | **CMW-25-112921** | | | | | |
| Laboratory ID: | 12-003-01 | | | | | |
| Diesel Range Organics | **ND** | 0.20 | NWTPH-Dx | 12-6-21 | 12-7-21 | X1 |
| Lube Oil Range Organics | **ND** | 0.20 | NWTPH-Dx | 12-6-21 | 12-7-21 | X1 |
| *Surrogate:* | *Percent Recovery* | *Control Limits* | | | | |
| *o-Terphenyl* | *111* | *50-150* | | | | |
| **Client ID:** | **CMW-29-112921** | | | | | |
| Laboratory ID: | 12-003-02 | | | | | |
| Diesel Range Organics | **0.74** | 0.20 | NWTPH-Dx | 12-6-21 | 12-6-21 | |
| Lube Oil Range Organics | **0.87** | 0.20 | NWTPH-Dx | 12-6-21 | 12-6-21 | |
| *Surrogate:* | *Percent Recovery* | *Control Limits* | | | | |
| *o-Terphenyl* | *113* | *50-150* | | | | |
| **Client ID:** | **CMW-29-112921** | | | | | |
| Laboratory ID: | 12-003-02 | | | | | |
| Diesel Range Organics | **ND** | 0.20 | NWTPH-Dx | 12-6-21 | 12-7-21 | X1 |
| Lube Oil Range Organics | **ND** | 0.20 | NWTPH-Dx | 12-6-21 | 12-7-21 | X1 |
| *Surrogate:* | *Percent Recovery* | *Control Limits* | | | | |
| *o-Terphenyl* | *125* | *50-150* | | | | |
| **Client ID:** | **CMW-30-112921** | | | | | |
| Laboratory ID: | 12-003-03 | | | | | |
| Diesel Range Organics | **0.23** | 0.20 | NWTPH-Dx | 12-6-21 | 12-6-21 | |
| Lube Oil Range Organics | **ND** | 0.20 | NWTPH-Dx | 12-6-21 | 12-6-21 | |
| *Surrogate:* | *Percent Recovery* | *Control Limits* | | | | |
| *o-Terphenyl* | *109* | *50-150* | | | | |
| **Client ID:** | **CMW-30-112921** | | | | | |
| Laboratory ID: | 12-003-03 | | | | | |
| Diesel Range Organics | **ND** | 0.20 | NWTPH-Dx | 12-6-21 | 12-7-21 | X1 |
| Lube Oil Range Organics | **ND** | 0.20 | NWTPH-Dx | 12-6-21 | 12-7-21 | X1 |
| *Surrogate:* | *Percent Recovery* | *Control Limits* | | | | |
| *o-Terphenyl* | *132* | *50-150* | | | | |

Date of Report: December 9, 2021
Samples Submitted: December 1, 2021
Laboratory Reference: 2112-003
Project: 301-004

**DIESEL AND HEAVY OIL RANGE ORGANICS**
**NWTPH-Dx**

Matrix: Water
Units: mg/L (ppm)

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **Client ID:** | **CMW-26-112921** | | | | | |
| Laboratory ID: | 12-003-04 | | | | | |
| Diesel Range Organics | **ND** | 0.20 | NWTPH-Dx | 12-6-21 | 12-6-21 | |
| Lube Oil Range Organics | **ND** | 0.20 | NWTPH-Dx | 12-6-21 | 12-6-21 | |
| *Surrogate:* | *Percent Recovery* | *Control Limits* | | | | |
| *o-Terphenyl* | *111* | *50-150* | | | | |
| **Client ID:** | **CMW-26-112921** | | | | | |
| Laboratory ID: | 12-003-04 | | | | | |
| Diesel Range Organics | **ND** | 0.20 | NWTPH-Dx | 12-6-21 | 12-7-21 | X1 |
| Lube Oil Range Organics | **ND** | 0.20 | NWTPH-Dx | 12-6-21 | 12-7-21 | X1 |
| *Surrogate:* | *Percent Recovery* | *Control Limits* | | | | |
| *o-Terphenyl* | *102* | *50-150* | | | | |
| **Client ID:** | **CMW-31-112921** | | | | | |
| Laboratory ID: | 12-003-05 | | | | | |
| Diesel Range Organics | **ND** | 0.20 | NWTPH-Dx | 12-6-21 | 12-6-21 | |
| Lube Oil Range Organics | **ND** | 0.20 | NWTPH-Dx | 12-6-21 | 12-6-21 | |
| *Surrogate:* | *Percent Recovery* | *Control Limits* | | | | |
| *o-Terphenyl* | *113* | *50-150* | | | | |
| **Client ID:** | **CMW-31-112921** | | | | | |
| Laboratory ID: | 12-003-05 | | | | | |
| Diesel Range Organics | **ND** | 0.20 | NWTPH-Dx | 12-6-21 | 12-7-21 | X1 |
| Lube Oil Range Organics | **ND** | 0.20 | NWTPH-Dx | 12-6-21 | 12-7-21 | X1 |
| *Surrogate:* | *Percent Recovery* | *Control Limits* | | | | |
| *o-Terphenyl* | *92* | *50-150* | | | | |
| **Client ID:** | **HMW-10-113021** | | | | | |
| Laboratory ID: | 12-003-06 | | | | | |
| Diesel Range Organics | **0.50** | 0.20 | NWTPH-Dx | 12-6-21 | 12-6-21 | |
| Lube Oil Range Organics | **0.23** | 0.20 | NWTPH-Dx | 12-6-21 | 12-6-21 | |
| *Surrogate:* | *Percent Recovery* | *Control Limits* | | | | |
| *o-Terphenyl* | *93* | *50-150* | | | | |
| **Client ID:** | **HMW-10-113021** | | | | | |
| Laboratory ID: | 12-003-06 | | | | | |
| Diesel Range Organics | **ND** | 0.20 | NWTPH-Dx | 12-6-21 | 12-7-21 | X1 |
| Lube Oil Range Organics | **ND** | 0.20 | NWTPH-Dx | 12-6-21 | 12-7-21 | X1 |
| *Surrogate:* | *Percent Recovery* | *Control Limits* | | | | |
| *o-Terphenyl* | *100* | *50-150* | | | | |

Date of Report: December 9, 2021
Samples Submitted: December 1, 2021
Laboratory Reference: 2112-003
Project: 301-004

**DIESEL AND HEAVY OIL RANGE ORGANICS**
**NWTPH-Dx**

Matrix: Water
Units: mg/L (ppm)

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **Client ID:** | **CMW-28-113021** | | | | | |
| Laboratory ID: | 12-003-07 | | | | | |
| Diesel Range Organics | **ND** | 0.20 | NWTPH-Dx | 12-6-21 | 12-6-21 | |
| Lube Oil Range Organics | **ND** | 0.20 | NWTPH-Dx | 12-6-21 | 12-6-21 | |
| *Surrogate:* | *Percent Recovery* | *Control Limits* | | | | |
| *o-Terphenyl* | *104* | *50-150* | | | | |
| **Client ID:** | **CMW-28-113021** | | | | | |
| Laboratory ID: | 12-003-07 | | | | | |
| Diesel Range Organics | **ND** | 0.20 | NWTPH-Dx | 12-6-21 | 12-7-21 | X1 |
| Lube Oil Range Organics | **ND** | 0.20 | NWTPH-Dx | 12-6-21 | 12-7-21 | X1 |
| *Surrogate:* | *Percent Recovery* | *Control Limits* | | | | |
| *o-Terphenyl* | *87* | *50-150* | | | | |
| **Client ID:** | **CMW-13-113021** | | | | | |
| Laboratory ID: | 12-003-08 | | | | | |
| Diesel Range Organics | **0.57** | 0.21 | NWTPH-Dx | 12-6-21 | 12-6-21 | |
| Lube Oil Range Organics | **0.34** | 0.21 | NWTPH-Dx | 12-6-21 | 12-6-21 | |
| *Surrogate:* | *Percent Recovery* | *Control Limits* | | | | |
| *o-Terphenyl* | *112* | *50-150* | | | | |
| **Client ID:** | **CMW-13-113021** | | | | | |
| Laboratory ID: | 12-003-08 | | | | | |
| Diesel Range Organics | **ND** | 0.21 | NWTPH-Dx | 12-6-21 | 12-7-21 | X1 |
| Lube Oil Range Organics | **ND** | 0.21 | NWTPH-Dx | 12-6-21 | 12-7-21 | X1 |
| *Surrogate:* | *Percent Recovery* | *Control Limits* | | | | |
| *o-Terphenyl* | *103* | *50-150* | | | | |
| **Client ID:** | **HMW-11-113021** | | | | | |
| Laboratory ID: | 12-003-09 | | | | | |
| Diesel Range Organics | **0.36** | 0.20 | NWTPH-Dx | 12-6-21 | 12-6-21 | |
| Lube Oil Range Organics | **0.38** | 0.20 | NWTPH-Dx | 12-6-21 | 12-6-21 | |
| *Surrogate:* | *Percent Recovery* | *Control Limits* | | | | |
| *o-Terphenyl* | *110* | *50-150* | | | | |
| **Client ID:** | **HMW-11-113021** | | | | | |
| Laboratory ID: | 12-003-09 | | | | | |
| Diesel Range Organics | **ND** | 0.20 | NWTPH-Dx | 12-6-21 | 12-7-21 | X1 |
| Lube Oil Range Organics | **ND** | 0.20 | NWTPH-Dx | 12-6-21 | 12-7-21 | X1 |
| *Surrogate:* | *Percent Recovery* | *Control Limits* | | | | |
| *o-Terphenyl* | *97* | *50-150* | | | | |

Date of Report: December 9, 2021
Samples Submitted: December 1, 2021
Laboratory Reference: 2112-003
Project: 301-004

**DIESEL AND HEAVY OIL RANGE ORGANICS**
**NWTPH-Dx**

Matrix: Water
Units: mg/L (ppm)

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **Client ID:** | **CMW-12-113021** | | | | | |
| Laboratory ID: | 12-003-10 | | | | | |
| Diesel Range Organics | **0.64** | 0.20 | NWTPH-Dx | 12-6-21 | 12-6-21 | |
| Lube Oil Range Organics | **0.33** | 0.20 | NWTPH-Dx | 12-6-21 | 12-6-21 | |
| *Surrogate:* | *Percent Recovery* | *Control Limits* | | | | |
| *o-Terphenyl* | *105* | *50-150* | | | | |
| **Client ID:** | **CMW-12-113021** | | | | | |
| Laboratory ID: | 12-003-10 | | | | | |
| Diesel Range Organics | **ND** | 0.20 | NWTPH-Dx | 12-6-21 | 12-7-21 | X1 |
| Lube Oil Range Organics | **ND** | 0.20 | NWTPH-Dx | 12-6-21 | 12-7-21 | X1 |
| *Surrogate:* | *Percent Recovery* | *Control Limits* | | | | |
| *o-Terphenyl* | *106* | *50-150* | | | | |
| **Client ID:** | **QA/QC-1-113021** | | | | | |
| Laboratory ID: | 12-003-11 | | | | | |
| Diesel Range Organics | **0.65** | 0.21 | NWTPH-Dx | 12-6-21 | 12-6-21 | |
| Lube Oil Range Organics | **0.32** | 0.21 | NWTPH-Dx | 12-6-21 | 12-6-21 | |
| *Surrogate:* | *Percent Recovery* | *Control Limits* | | | | |
| *o-Terphenyl* | *98* | *50-150* | | | | |
| **Client ID:** | **QA/QC-1-113021** | | | | | |
| Laboratory ID: | 12-003-11 | | | | | |
| Diesel Range Organics | **ND** | 0.21 | NWTPH-Dx | 12-6-21 | 12-7-21 | X1 |
| Lube Oil Range Organics | **ND** | 0.21 | NWTPH-Dx | 12-6-21 | 12-7-21 | X1 |
| *Surrogate:* | *Percent Recovery* | *Control Limits* | | | | |
| *o-Terphenyl* | *108* | *50-150* | | | | |
| **Client ID:** | **CMW-27-113021** | | | | | |
| Laboratory ID: | 12-003-12 | | | | | |
| Diesel Range Organics | **8.9** | 0.21 | NWTPH-Dx | 12-6-21 | 12-6-21 | M |
| Lube Oil Range Organics | **4.8** | 0.21 | NWTPH-Dx | 12-6-21 | 12-6-21 | |
| *Surrogate:* | *Percent Recovery* | *Control Limits* | | | | |
| *o-Terphenyl* | *121* | *50-150* | | | | |
| **Client ID:** | **CMW-27-113021** | | | | | |
| Laboratory ID: | 12-003-12 | | | | | |
| Diesel Range Organics | **0.88** | 0.21 | NWTPH-Dx | 12-6-21 | 12-7-21 | M,X1 |
| Lube Oil Range Organics | **ND** | 0.21 | NWTPH-Dx | 12-6-21 | 12-7-21 | X1 |
| *Surrogate:* | *Percent Recovery* | *Control Limits* | | | | |
| *o-Terphenyl* | *112* | *50-150* | | | | |

Date of Report: December 9, 2021
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Laboratory Reference: 2112-003
Project: 301-004

**DIESEL AND HEAVY OIL RANGE ORGANICS**
**NWTPH-Dx**

Matrix: Water
Units: mg/L (ppm)

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **Client ID:** | **QA/QC-2-113021** | | | | | |
| Laboratory ID: | 12-003-13 | | | | | |
| Diesel Range Organics | **6.7** | 0.21 | NWTPH-Dx | 12-6-21 | 12-6-21 | M |
| Lube Oil Range Organics | **2.8** | 0.21 | NWTPH-Dx | 12-6-21 | 12-6-21 | |
| *Surrogate:* | *Percent Recovery* | *Control Limits* | | | | |
| *o-Terphenyl* | *101* | *50-150* | | | | |
| **Client ID:** | **QA/QC-2-113021** | | | | | |
| Laboratory ID: | 12-003-13 | | | | | |
| Diesel Range Organics | **0.93** | 0.21 | NWTPH-Dx | 12-6-21 | 12-7-21 | M,X1 |
| Lube Oil Range Organics | **ND** | 0.21 | NWTPH-Dx | 12-6-21 | 12-7-21 | X1 |
| *Surrogate:* | *Percent Recovery* | *Control Limits* | | | | |
| *o-Terphenyl* | *103* | *50-150* | | | | |
| **Client ID:** | **CMW-10-113021** | | | | | |
| Laboratory ID: | 12-003-14 | | | | | |
| Diesel Range Organics | **2.8** | 0.20 | NWTPH-Dx | 12-6-21 | 12-6-21 | |
| Lube Oil Range Organics | **2.9** | 0.20 | NWTPH-Dx | 12-6-21 | 12-6-21 | |
| *Surrogate:* | *Percent Recovery* | *Control Limits* | | | | |
| *o-Terphenyl* | *115* | *50-150* | | | | |
| **Client ID:** | **CMW-10-113021** | | | | | |
| Laboratory ID: | 12-003-14 | | | | | |
| Diesel Range Organics | **ND** | 0.20 | NWTPH-Dx | 12-6-21 | 12-7-21 | X1 |
| Lube Oil Range Organics | **ND** | 0.20 | NWTPH-Dx | 12-6-21 | 12-7-21 | X1 |
| *Surrogate:* | *Percent Recovery* | *Control Limits* | | | | |
| *o-Terphenyl* | *107* | *50-150* | | | | |
| **Client ID:** | **CMW-2-113021** | | | | | |
| Laboratory ID: | 12-003-15 | | | | | |
| Diesel Range Organics | **1.4** | 0.20 | NWTPH-Dx | 12-6-21 | 12-6-21 | |
| Lube Oil Range Organics | **1.2** | 0.20 | NWTPH-Dx | 12-6-21 | 12-6-21 | |
| *Surrogate:* | *Percent Recovery* | *Control Limits* | | | | |
| *o-Terphenyl* | *111* | *50-150* | | | | |
| **Client ID:** | **CMW-2-113021** | | | | | |
| Laboratory ID: | 12-003-15 | | | | | |
| Diesel Range Organics | **ND** | 0.20 | NWTPH-Dx | 12-6-21 | 12-7-21 | X1 |
| Lube Oil Range Organics | **ND** | 0.20 | NWTPH-Dx | 12-6-21 | 12-7-21 | X1 |
| *Surrogate:* | *Percent Recovery* | *Control Limits* | | | | |
| *o-Terphenyl* | *114* | *50-150* | | | | |

Date of Report: December 9, 2021
Samples Submitted: December 1, 2021
Laboratory Reference: 2112-003
Project: 301-004

**DIESEL AND HEAVY OIL RANGE ORGANICS**
**NWTPH-Dx**

Matrix: Water
Units: mg/L (ppm)

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **Client ID:** | **CMW-8-113021** | | | | | |
| Laboratory ID: | 12-003-16 | | | | | |
| Diesel Range Organics | **0.58** | 0.20 | NWTPH-Dx | 12-6-21 | 12-6-21 | |
| Lube Oil Range Organics | **0.35** | 0.20 | NWTPH-Dx | 12-6-21 | 12-6-21 | |
| *Surrogate:* | *Percent Recovery* | *Control Limits* | | | | |
| *o-Terphenyl* | *108* | *50-150* | | | | |
| **Client ID:** | **CMW-8-113021** | | | | | |
| Laboratory ID: | 12-003-16 | | | | | |
| Diesel Range Organics | **ND** | 0.20 | NWTPH-Dx | 12-6-21 | 12-7-21 | X1 |
| Lube Oil Range Organics | **ND** | 0.20 | NWTPH-Dx | 12-6-21 | 12-7-21 | X1 |
| *Surrogate:* | *Percent Recovery* | *Control Limits* | | | | |
| *o-Terphenyl* | *119* | *50-150* | | | | |
| **Client ID:** | **HMW-13-113021** | | | | | |
| Laboratory ID: | 12-003-17 | | | | | |
| Diesel Range Organics | **ND** | 0.20 | NWTPH-Dx | 12-6-21 | 12-6-21 | |
| Lube Oil Range Organics | **ND** | 0.20 | NWTPH-Dx | 12-6-21 | 12-6-21 | |
| *Surrogate:* | *Percent Recovery* | *Control Limits* | | | | |
| *o-Terphenyl* | *106* | *50-150* | | | | |
| **Client ID:** | **HMW-13-113021** | | | | | |
| Laboratory ID: | 12-003-17 | | | | | |
| Diesel Range Organics | **ND** | 0.20 | NWTPH-Dx | 12-6-21 | 12-7-21 | X1 |
| Lube Oil Range Organics | **ND** | 0.20 | NWTPH-Dx | 12-6-21 | 12-7-21 | X1 |
| *Surrogate:* | *Percent Recovery* | *Control Limits* | | | | |
| *o-Terphenyl* | *91* | *50-150* | | | | |
| **Client ID:** | **HMW-9-113021** | | | | | |
| Laboratory ID: | 12-003-18 | | | | | |
| Diesel Range Organics | **0.30** | 0.21 | NWTPH-Dx | 12-6-21 | 12-6-21 | |
| Lube Oil Range Organics | **0.32** | 0.21 | NWTPH-Dx | 12-6-21 | 12-6-21 | |
| *Surrogate:* | *Percent Recovery* | *Control Limits* | | | | |
| *o-Terphenyl* | *112* | *50-150* | | | | |
| **Client ID:** | **HMW-9-113021** | | | | | |
| Laboratory ID: | 12-003-18 | | | | | |
| Diesel Range Organics | **ND** | 0.21 | NWTPH-Dx | 12-6-21 | 12-7-21 | X1 |
| Lube Oil Range Organics | **ND** | 0.21 | NWTPH-Dx | 12-6-21 | 12-7-21 | X1 |
| *Surrogate:* | *Percent Recovery* | *Control Limits* | | | | |
| *o-Terphenyl* | *107* | *50-150* | | | | |

Date of Report: December 9, 2021
Samples Submitted: December 1, 2021
Laboratory Reference: 2112-003
Project: 301-004

**DIESEL AND HEAVY OIL RANGE ORGANICS**
**NWTPH-Dx**
**QUALITY CONTROL**

Matrix: Water
Units: mg/L (ppm)

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **METHOD BLANK** | | | | | | |
| Laboratory ID: | MB1206W1 | | | | | |
| Diesel Range Organics | **ND** | 0.16 | NWTPH-Dx | 12-6-21 | 12-6-21 | |
| Lube Oil Range Organics | **ND** | 0.16 | NWTPH-Dx | 12-6-21 | 12-6-21 | |
| *Surrogate:* | *Percent Recovery* | *Control Limits* | | | | |
| *o-Terphenyl* | *82* | *50-150* | | | | |
| | | | | | | |
| Laboratory ID: | MB1206W1 | | | | | |
| Diesel Range Organics | **ND** | 0.16 | NWTPH-Dx | 12-6-21 | 12-7-21 | X1 |
| Lube Oil Range Organics | **ND** | 0.16 | NWTPH-Dx | 12-6-21 | 12-7-21 | X1 |
| *Surrogate:* | *Percent Recovery* | *Control Limits* | | | | |
| *o-Terphenyl* | *111* | *50-150* | | | | |

| Analyte | Result | | Spike Level | | Source Result | Percent Recovery | | Recovery Limits | RPD | RPD Limit | Flags |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **DUPLICATE** | | | | | | | | | | | |
| Laboratory ID: | 12-003-09 | | | | | | | | | | |
| | ORIG | DUP | | | | | | | | | |
| Diesel Range Organics | **0.361** | **0.351** | NA | NA | | NA | | NA | 3 | NA | |
| Lube Oil Range Organics | **0.375** | **0.389** | NA | NA | | NA | | NA | 4 | NA | |
| *Surrogate:* | | | | | | | | | | | |
| *o-Terphenyl* | | | | | | *110* | *107* | *50-150* | | | |
| | | | | | | | | | | | |
| Laboratory ID: | SB1206W1 | | | | | | | | | | |
| | ORIG | DUP | | | | | | | | | |
| Diesel Fuel #2 | **0.395** | **0.347** | NA | NA | | NA | | NA | 13 | NA | |
| *Surrogate:* | | | | | | | | | | | |
| *o-Terphenyl* | | | | | | *119* | *108* | *50-150* | | | |
| | | | | | | | | | | | |
| Laboratory ID: | 12-003-09 | | | | | | | | | | |
| | ORIG | DUP | | | | | | | | | |
| Diesel Range | **ND** | **ND** | NA | NA | | NA | | NA | NA | NA | X1 |
| Lube Oil Range | **ND** | **ND** | NA | NA | | NA | | NA | NA | NA | X1 |
| *Surrogate:* | | | | | | | | | | | |
| *o-Terphenyl* | | | | | | *97* | *118* | *50-150* | | | |
| | | | | | | | | | | | |
| Laboratory ID: | SB1206W1 | | | | | | | | | | |
| | ORIG | DUP | | | | | | | | | |
| Diesel Fuel #2 | **0.364** | **0.326** | NA | NA | | NA | | NA | 11 | NA | X1 |
| *Surrogate:* | | | | | | | | | | | |
| *o-Terphenyl* | | | | | | *101* | *110* | *50-150* | | | |

OnSite Environmental Inc.

**Data Qualifiers and Abbreviations**

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-naphthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in diesel range are impacting lube oil range results.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

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

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

X1- Sample extract treated with a sulfuric acid/silica gel cleanup procedure.

Y - The calibration verification for this analyte exceeded the 20% drift specified in methods 8260 & 8270, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.

Y1 - Negative effects of the matrix from this sample on the instrument caused values for this analyte in the bracketing continuing calibration verification standard (CCVs) to be outside of 20% acceptance criteria. Because of this, quantitation limits and sample concentrations should be considered estimates.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

# Chain of Custody

Page 1 of 2

**OnSite Environmental Inc.**
Analytical Laboratory Testing Services
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

Company: Farallon
Project Number: 301-004
Project Name: Cenex Auburn
Project Manager: Jason Ruark
Sampled by: G. Peters

**Turnaround Request (in working days)**

(Check One)

☐ Same Day ☐ 1 Day
☐ 2 Days ☐ 3 Days
☒ Standard (7 Days)
☐ _____ (other)

**Laboratory Number:** 12-003

| Lab ID | Sample Identification | Date Sampled | Time Sampled | Matrix | Number of Containers | NWTPH-HCID | NWTPH-Gx/BTEX | NWTPH-Gx | NWTPH-Dx (Acid / SG Clean-up) | Volatiles 8260D | Halogenated Volatiles 8260D | EDB EPA 8011 (Waters Only) | Semivolatiles 8270E/SIM (with low-level PAHs) | PAHs 8270E/SIM (low-level) | PCBs 8082A | Organochlorine Pesticides 8081B | Organophosphorus Pesticides 8270E/SIM | Chlorinated Acid Herbicides 8151A | Total RCRA Metals | Total MTCA Metals | TCLP Metals | HEM (oil and grease) 1664A | | | | | % Moisture |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | CMW-25-112921 | 11/29/21 | 1305 | Water | 5 | | X | | X | | | | | | | | | | | | | | | | | | |
| 2 | CMW-29-112921 | | 1349 | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | CMW-30-112921 | | 1432 | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | CMW-26-112921 | | 1505 | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | CMW-31-112921 | | 1540 | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | HMW-10-113021 | 11/30/21 | 912 | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | CMW-28-113021 | | 1011 | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | CMW-13-113021 | | 1150 | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | HMW-11-113021 | | 1318 | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | CMW-12-113021 | ↓ | 1355 | | | | ↓ | | ↓ | | | | | | | | | | | | | | | | | | |

| | Signature | Company | Date | Time |
|---|---|---|---|---|
| Relinquished | | Farallon | 11/30/21 | 1930 |
| Received | Van | Spdx | 12/1/21 | 1010 |
| Relinquished | Van | Spdx | 12/1/21 | 1122 |
| Received | | | 12/1/21 | 1122 |
| Relinquished | | | | |
| Received | | | | |
| Reviewed/Date | | Reviewed/Date | | |

**Comments/Special Instructions**

* Analyze Dx with and without AC/SG Cleanup

Data Package: Standard ☐ Level III ☐ Level IV ☐

Chromatograms with final report ☐ Electronic Data Deliverables (EDDs) ☐

# Chain of Custody



**OnSite Environmental Inc.**
Analytical Laboratory Testing Services
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

Company: Farallon
Project Number: 301-004
Project Name: Cemex Auburn
Project Manager: Jason Ruark
Sampled by: G. Peters

**Turnaround Request (in working days)**

(Check One)

- ☐ Same Day
- ☐ 1 Day
- ☐ 2 Days
- ☐ 3 Days
- ☒ Standard (7 Days)
- ☐ _____ (other)

**Laboratory Number:** 12-003

| Lab ID | Sample Identification | Date Sampled | Time Sampled | Matrix | Number of Containers | NWTPH-HCID | NWTPH-Gx/BTEX | NWTPH-Gx | NWTPH-Dx (☐ Acid / SG Clean-up) | Volatiles 8260D | Halogenated Volatiles 8260D | EDB EPA 8011 (Waters Only) | Semivolatiles 8270E/SIM (with low-level PAHs) | PAHs 8270E/SIM (low-level) | PCBs 8082A | Organochlorine Pesticides 8081B | Organophosphorus Pesticides 8270E/SIM | Chlorinated Acid Herbicides 8151A | Total RCRA Metals | Total MTCA Metals | TCLP Metals | HEM (oil and grease) 1664A | | | | | % Moisture |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 11 | QA/QC-1-113021 | 11/30/21 | 1415 | Water | 5 | | X | | X | | | | | | | | | | | | | | | | | | |
| 12 | CMW-27-113021 | | 1456 | | | | | | | | | | | | | | | | | | | | | | | | |
| 13 | QA/QC-2-113021 | | 1505 | | | | | | | | | | | | | | | | | | | | | | | | |
| 14 | CMW-10-113021 | | 1550 | | | | | | | | | | | | | | | | | | | | | | | | |
| 15 | CMW-2-113021 | | 1617 | | | | | | | | | | | | | | | | | | | | | | | | |
| 16 | CMW-8-113021 | | 1055 | | | | | | | | | | | | | | | | | | | | | | | | |
| 17 | HMW-13-113021 | | 1654 | | | | | | | | | | | | | | | | | | | | | | | | |
| 18 | HMW-9-113021 | | 1731 | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| | Signature | Company | Date | Time | Comments/Special Instructions |
|---|---|---|---|---|---|
| Relinquished | | Farallon | 11/30/21 | 1930 | |
| Received | Van | SPSS | 12/1/21 | 1010 | |
| Relinquished | Van | SPSS | 12/1/21 | 1122 | |
| Received | | CRS | 12/1/21 | 1122 | |
| Relinquished | | | | | |
| Received | | | | | Data Package: Standard ☐ Level III ☐ Level IV ☐ |
| Reviewed/Date | | Reviewed/Date | | | Chromatograms with final report ☐ Electronic Data Deliverables (EDDs) ☐ |

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

September 1, 2021

Javan Ruark, Project Manager
Farallon Consulting, LLC
975 5th Avenue Northwest
Issaquah, WA 98027

Dear Mr Ruark:

Included are the results from the testing of material submitted on August 26, 2021 from the Cenex Auburn 301-004, F&BI 108410 project. There are 5 pages included in this report.

We appreciate this opportunity to be of service to you and hope you will call if you have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Farallon Data, Russell Luiten
FLN0901R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on August 26, 2021 by Friedman & Bruya, Inc. from the Farallon Consulting, LLC Cenex Auburn 301-004, F&BI 108410 project. Samples were logged in under the laboratory ID's listed below.

| Laboratory ID | Farallon Consulting, LLC |
|---|---|
| 108410 -01 | Effluent-082521 |

The TO-15 gasoline range organics concentration was determined using a single point calibration at 80 ppbv.

All quality control requirements were acceptable.

## Analysis For Volatile Compounds By Method TO-15

| | | | |
|---|---|---|---|
| Client Sample ID: | Effluent-082521 | Client: | Farallon Consulting, LLC |
| Date Received: | 08/26/21 | Project: | Cenex Auburn 301-004, F&BI 108410 |
| Date Collected: | 08/25/21 | Lab ID: | 108410-01 1/6.1 |
| Date Analyzed: | 08/27/21 | Data File: | 082627.D |
| Matrix: | Air | Instrument: | GCMS7 |
| Units: | ug/m3 | Operator: | bat |

| Surrogates: | % Recovery: | Lower Limit: | Upper Limit: |
|---|---|---|---|
| 4-Bromofluorobenzene | 99 | 70 | 130 |

| Compounds: | Concentration ug/m3 | ppbv |
|---|---|---|
| Benzene | <1.9 | <0.61 |
| Toluene | <110 | <30 |
| Ethylbenzene | <2.6 | <0.61 |
| m,p-Xylene | <5.3 | <1.2 |
| o-Xylene | <2.6 | <0.61 |
| Gasoline Range Organics | 3,600 | 870 |

## Analysis For Volatile Compounds By Method TO-15

| | | | |
|---|---|---|---|
| Client Sample ID: | Method Blank | Client: | Farallon Consulting, LLC |
| Date Received: | Not Applicable | Project: | Cenex Auburn 301-004, F&BI 108410 |
| Date Collected: | Not Applicable | Lab ID: | 01-1867 MB |
| Date Analyzed: | 08/26/21 | Data File: | 082611.D |
| Matrix: | Air | Instrument: | GCMS7 |
| Units: | ug/m3 | Operator: | bat |

| Surrogates: | % Recovery: | Lower Limit: | Upper Limit: |
|---|---|---|---|
| 4-Bromofluorobenzene | 97 | 70 | 130 |

| Compounds: | Concentration ug/m3 | ppbv |
|---|---|---|
| Benzene | <0.32 | <0.1 |
| Toluene | <19 | <5 |
| Ethylbenzene | <0.43 | <0.1 |
| m,p-Xylene | <0.87 | <0.2 |
| o-Xylene | <0.43 | <0.1 |
| Gasoline Range Organics | <330 | <80 |

Date of Report: 09/01/21
Date Received: 08/26/21
Project: Cenex Auburn 301-004, F&BI 108410

## QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD TO-15

Laboratory Code: 108405-01 1/5.8 (Duplicate)

| Analyte | Reporting Units | Sample Result | Duplicate Result | RPD (Limit 30) |
|---|---|---|---|---|
| Benzene | ug/m3 | <1.9 | <1.9 | nm |
| Toluene | ug/m3 | 160 | 160 | 0 |
| Ethylbenzene | ug/m3 | 76 | 75 | 1 |
| m,p-Xylene | ug/m3 | 300 | 300 | 0 |
| o-Xylene | ug/m3 | 83 | 83 | 0 |

Laboratory Code: Laboratory Control Sample

| Analyte | Reporting Units | Spike Level | Percent Recovery LCS | Acceptance Criteria |
|---|---|---|---|---|
| Benzene | ug/m3 | 43 | 100 | 70-130 |
| Toluene | ug/m3 | 51 | 102 | 70-130 |
| Ethylbenzene | ug/m3 | 59 | 98 | 70-130 |
| m,p-Xylene | ug/m3 | 120 | 101 | 70-130 |
| o-Xylene | ug/m3 | 59 | 101 | 70-130 |

# Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

# SAMPLE CHAIN OF CUSTODY

108410

Report To Jaran Ruark, Russell Luiten

Company Farallon

Address

City, State, ZIP

Phone Email JRuark, RLuiten @Farallon Consulting.com

SAMPLERS (*signature*) Braden Lukkari ME 8/26/21

PROJECT NAME & ADDRESS: ~~301-004~~ Cemex Auburn, Auburn, WA

PO # 301-004

NOTES: * BTEX, GRO

INVOICE TO AP

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TURNAROUND TIME
☑ Standard
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☐ Default: Clean after 3 days
☐ Archive (Fee may apply)

| SAMPLE INFORMATION | | | | | | | | | | ANALYSIS REQUESTED | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Name | Lab ID | Canister ID | Flow Cont. ID | Reporting Level: IA=Indoor Air SG=Soil Gas (Circle One) | Date Sampled | Initial Vac. ("Hg) | Field Initial Time | Final Vac. ("Hg) | Field Final Time | TO15 Full Scan | *TO15 BTEXN | TO15 cVOCs | APH | Helium | | Notes |
| EFFLUENT-082521 | 01 | 8527 | 204 | IA / (SG) | 8/25/21 | 29 | 1344 | 5 | 1350 | | X | | | | * | ~~BTEX~~ GRO |
| | | | | IA / SG | | | | | | | | | | | | |
| | | | | IA / SG | | | | | | | | | | | | |
| | | | | IA / SG | | | | | | | | | | | | |
| | | | | IA / SG | | | | | | | | | | | | |
| | | | | IA / SG | | | | | | | | | | | | |
| | | | | IA / SG | | | | | | | | | | | | Samples received at 19°C |
| | | | | IA / SG | | | | | | | | | | | | |

*Friedman & Bruya, Inc.*
*3012 16th Avenue West*
*Seattle, WA 98119-2029*
*Ph. (206) 285-8282*
*Fax (206) 283-5044*

| SIGNATURE | PRINT NAME | COMPANY | DATE | TIME |
|---|---|---|---|---|
| Relinquished by: Braden Lukkari | Braden Lukkari | Farallon | 8/25/21 | 1445 |
| Received by: | Lisa Thompson | Farallon | 8/25/21 | 1445 |
| Relinquished by: | Lisa Thompson | Farallon | 8/26/21 | 0710 |
| Received by: | Will Radford | FSBI | 8/26/21 | 0710 |