

Chevron Environmental Management Company

Draft for Public Review - Preliminary Remedial Investigation Report

Former Chevron Station 97502

640 Metcalf Street

Sedro-Woolley, Washington

FSID: 61112475

CSID: 6368

July 15, 2022

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Acronyms and Abbreviations

Arcadis	Arcadis U.S., Inc.
AO	Agreed order
ASTM	ASTM International
bgs	below ground surface
BTEX	collectively benzene, toluene, ethylbenzene, and total xylenes
CEMC	Chevron Environmental Management Company
COC	constituent of concern
CUL	cleanup level
DRO	diesel range organics
Ecology	Washington Department of Ecology
EDB	ethylene dibromide
EDC	1,2-dichloroethane
EIM	Environmental Information Management
EMCON	Sweet-Edwards/EMCON
GRO	gasoline range organics
HO	heavy oil range organics
IDW	investigation-derived waste
MTBE	methyl tertiary butyl ether
MTCA	Model Toxics Control Act
PID	photo ionization detector
PLP	Potentially Liable Person
site	Former Chevron Service Station 97502, located at 640 Metcalf Street in Sedro Woolley, Washington
TPH	total petroleum hydrocarbon
USEPA	United States Environmental Protection Agency
UST	underground storage tank
VOC	volatile organic compound
WAC	Washington Administrative Code

1 Introduction

On behalf of Chevron Environmental Management Company (CEMC), Arcadis U.S., Inc. (Arcadis) has prepared this *Draft for Public Review – Preliminary Remedial Investigation (RI) Report* (report) for Former Chevron Station 97502 located at 640 Metcalf Street in Sedro-Woolley, Washington (site). The “site” is defined in the Agreed Order (AO) No. DE 18034 as the property (lots 77454, 77455, and 77456) and surrounding right-of-way (ROW) areas (Ecology 2020a). Potentially Liable Persons (PLPs) for the site are CEMC and the City of Sedro-Woolley (City). The property is currently owned by the City and is occupied by Hammer Heritage Square, a public City park. A site location map is presented on Figure 1 and a site map is included as Figure 2. A parcel map and parcel data for the site are presented in Appendix A. Site regulatory identifiers include Cleanup Site Identification No. 6368 and Facility Site Identification No. 61112475.

This report documents the investigation activities conducted at the site in September and December 2021 that were performed in general accordance with the May 20, 2021 *Remedial Investigation Work Plan* (Work Plan; Arcadis 2021), which was approved via an email from the Washington Department of Ecology (Ecology) on May 24, 2021 (Appendix A). Work was also completed pursuant to AO No. 18034, effective September 14, 2020 (Ecology 2020a).

The data collected during this site investigation was uploaded in the Ecology Environmental Information Management (EIM) database under EIM identification number FSID61112475.

The objectives of the work were to address data gaps regarding the nature and extent of contaminant releases in soil, groundwater, and soil vapor associated with the historic use of the property.

2 Site Background

This section discusses general site and background information, and the environmental history at the site.

2.1 General Site Information

The site’s general information is listed below:

- **Site Location:** 640 Metcalf Street and surrounding ROW areas
- **Site County:** Skagit County
- **Site Parcel Number, Address, Area, Current Use:**
 - Parcels P77454, P77455, P77456:
 - 640 Metcalf Street (historically shown as 124 West Ferry Street)
 - 0.21 acre
 - Currently Hammer Heritage Square Park
- **Site Land Use:** The property is zoned as Public, which allows parks, schools, public infrastructure and other developments intended primarily for public use (City of Sedro-Woolley 2019).
- **Vicinity Land Use:** Surrounding properties are zoned as Central Business District, which may be used for commercial, multi-family residential, and public uses (City of Sedro-Woolley 2019). The property is bounded

by Metcalf Street to the east, Ferry Street to the south, a pizza restaurant to the west, and a bowling alley to the north.

2.2 Site History

The property and surrounding area have been developed for commercial uses since at least the early 1900s. Historical ownership and land use of the property are described below, including historical petroleum activities and/or spills.

The earliest known development of the property occurred in 1905 with the construction of the Seidell Building. Before it burned down in 1949, the Seidell Building was used for various commercial businesses, including a bank, lawyer's office, barber shop, tailor, and stores for sporting goods, liquor, and general retail (Ecology 2020a).

The property was redeveloped as a service station around 1950, becoming the Gateway Service Station in 1953. In 1965, Standard Oil Company of California (predecessor to Chevron) acquired the Gateway Service Station property and remodeled and took over operations (Ecology 2020a).

On July 25, 1989, approximately 100 gallons of unleaded gasoline were spilled when an underground storage tank (UST) overflowed during filling. The spilled gasoline flowed south down the gutter along Metcalf Street to Ferry Street and entered a catch basin at the northwestern corner of Metcalf and Ferry Streets. The gasoline was flushed from the storm water drainage system on July 25 and 26, 1989 (Conestoga-Rovers & Associates [CRA] 2008a).

Service station operations ended in early 1992, and all USTs were removed by February 1992. An estimated eight USTs were historically present at the service station – three gasoline USTs (one 3,000-gallon supreme unleaded gasoline UST, one 6,500-gallon unleaded gasoline UST, one 8,000-gallon leaded gasoline UST), as well as one 550-gallon heating oil UST, one 550-gallon used oil UST, and one 300-gallon kerosene UST.. The service station also contained two pump islands, two hydraulic hoists, and associated underground piping (Ecology 2020a). The City purchased the lots that comprise the property in several transactions between 1997 and 2000 and constructed Hammer Heritage Square in 2005 (Ecology 2020a).

Hammer Heritage Square is primarily paved with concrete pavers and contains a gazebo, planter and landscaped areas, public restrooms, and a clock tower. The park is the location of the Sedro-Woolley Farmers Market and other community events (Ecology 2020a). Ten groundwater monitoring wells were on-site, prior to the installation of seven new wells in September 2021 (described in further detail within this report).

2.3 Site Regulatory History

Environmental activities at the site began after the 1989 release, which was documented by Skagit County Department of Emergency Management, as described above.

Based on subsurface investigations and UST removals conducted from 1991 through 1993, the City, in cooperation with CEMC, enrolled the site in Ecology's Voluntary Cleanup Program (VCP) in May 2000.

On September 6, 2000, Ecology sent a VCP Opinion letter to the City stating that additional work would be required to address environmental impacts at the site (Ecology 2020a).

Ecology sent a PLP status letter to CEMC on October 1, 2015, and a subsequent letter dated February 22, 2016 identified CEMC as a PLP at the site. An Ecology letter dated April 27, 2016 identified the City as an additional

PLP for the site. On September 14, 2020, Ecology issued AO No. DE 18034 which required the following actions and conditions:

- PLPs will complete a Draft RI Work Plan. The RI Work Plan will include all actions needed to characterize impact extent at the site in all environmental media.
- Implement the RI Work Plan and submit an RI report.
- Implement potential interim actions if needed to reduce immediate threats to human and environmental health, to prevent issues at the site that may become substantially worse if remedial action is delayed, or if needed to complete the requirements of the AO.
- Prepare a Feasibility Study (FS) report to evaluate remedial alternatives for the site.
- Following Ecology's approval of the RI/FS, the PLPs will submit a preliminary Draft Cleanup Action Plan.
- Comply with the State Environmental Policy Act and public participation processes.
- Attend key meetings listed in the AO and provide quarterly progress reports.

An AO Fact Sheet and Public Participation Plan were created by Ecology in June 2020 for public review (Ecology 2020c). Comments were accepted from June 22 to July 21, 2020. A virtual public meeting was hosted by Ecology on June 30, 2020. The presentation is available on Ecology's site information webpage, along with Ecology's response to public comments.

2.4 Environmental Setting

The site environmental setting is described below:

- **Site Elevation:** The site is generally flat, with surrounding areas sloping downhill to the south toward the Skagit River. Area elevations range from approximately 40 to 60 feet above sea level.
- **Climate:** Temperate climate with local annual precipitation averaging 46.5 inches. Local temperatures range from average lows in the mid-30s Fahrenheit in winter months to highs in the 70s Fahrenheit in summer months (U.S. Climate Data 2020).
- **Nearest Waterbodies:** The Skagit River is located 1.25 miles south of the site. Brickyard Creek is 0.5 mile northwest of the site. No other surface water is present on or within 0.5 miles of the site, and no risks to surface water have been identified. The closest drinking water wells are located approximately 0.5 mile northeast and 0.85 mile southwest and are not in hydraulic connection with the site (Ecology 2020b). Drinking water at the property is provided by Skagit County Public Utility District, sourced from Judy Reservoir, located approximately 6 miles southeast of the property, on the other side of the Skagit River.
- **Site Soils:** Geology at the site is classified as the Vashon Till, a Quaternary glacial deposit characterized by gravel, silty sand, and silty clay (CRA 2009; Skagit County Public Health Department [SCPHD] 2018).
- **Site Groundwater:** Groundwater monitoring began at the site in 1992 and continued until September 2014, when it was put on hold until 2020. Past monitoring frequency was typically quarterly; however, multiple years only had semi-annual sampling.
 - **Monitoring network:** Fourteen groundwater monitoring wells were originally installed at the site. Groundwater monitoring wells MW-1 through MW-3 were installed in 1991 and decommissioned in 1992. Groundwater monitoring well MW-9 was decommissioned in 2001. The remaining groundwater monitoring wells were regularly sampled until 2014.

- Observed depth to water: Depth to water at the site averages between 6 and 16 feet below ground surface (ft bgs) (CRA 2009; SCPHD 2018).
- Groundwater elevation: Groundwater elevation ranges from approximately 43 to 52 ft above mean sea level.
- Groundwater flow direction: Groundwater flow direction at the site is primarily toward the south and has varied from south-southeast to south-southwest (see rose diagram on Figure 3). A review of available historical groundwater contour maps indicated no seasonal or temporal trends observed.
- **Site Sediment:** No risks to sediments have been identified.

3 Previous Environmental Investigations

Investigations have been conducted at the site since 1989 and included soil, groundwater, soil vapor, and light non-aqueous phase liquid (LNAPL) assessment. Those investigations are summarized in the following sections.

3.1 Historical Soil Investigations

From 1991 to 2008, seven subsurface investigations were conducted to determine the extent of soil impacts in the vicinity of the former USTs and dispenser islands. A total of 63 soil samples were collected and submitted for laboratory analysis.

Included in the investigations were two subsurface soil investigations and two UST removal assessments, performed by Sweet-Edwards/EMCON (EMCON) from 1991 through 1993. Additional soil sampling was performed in 2002 and 2006 during the installation of groundwater monitoring wells by Cambria Environmental Technology, Inc.

Prior to the current investigation, the most recent soil investigation at the site was conducted by CRA in April 2008, with five soil borings advanced to better identify the potential source of LNAPL at the site.

The 2008 investigation included five soil borings (GB-1 through GB-5) in the vicinity of former USTs and dispenser islands. Soil borings ranged in depth from 12 to 16 ft bgs.

- TPH-GRO was the only analyte detected above MTCA Method A CULs in soil samples. The maximum concentration of TPH-GRO (110 milligrams per kilogram [mg/kg]) in the vicinity of the former USTs was detected at 5 feet bgs (boring GB-2) (CRA 2008a).
- The maximum TPH-GRO concentration detected near former dispenser islands was 380 mg/kg at 2 feet bgs (GB-4), indicating that the dispenser islands were also not the likely source of LNAPL (CRA 2008a).

Soil samples at the site have been analyzed for the following constituents: gasoline range organics (GRO), diesel range organics (DRO), heavy oil range organics (HO), benzene, toluene, ethylbenzene, and total xylenes (BTEX), lead, volatile organic compounds (VOCs), polychlorinated biphenyls (PCBs), priority pollutant metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver), carcinogenic polycyclic aromatic hydrocarbons (cPAHs), methyl tertiary-butyl ether (MTBE), ethylene dibromide (EDB), 1,2-Dichloroethane (EDC), tetrachloroethylene (PCE), and trichloroethylene (TCE).

Historically, soil concentrations of GRO, DRO, HO, and BTEX have been found in exceedance of MTCA Method A CULs between 2 and 12 ft bgs. All other constituents analyzed were either not detected or were detected at concentrations below MTCA Method A CULs. Historical soil analytical data are summarized in Table 1.

3.2 Historical Groundwater Investigations

Groundwater investigation began at the site in February 1991 with the installation of groundwater monitoring wells MW-1 through MW-5 by EMCON. A total of 14 groundwater monitoring wells (MW-1 through MW-14) were installed at the site between 1991 and 2006 with four (4) of the wells later being decommissioned. Wells MW-1, MW-2, and MW-3 were decommissioned during the 1992 UST removal events and MW-9 was decommissioned in 2001. Ten groundwater monitoring wells remain on-site and constituted the groundwater monitoring well network until 2021.

Groundwater samples were collected on a quarterly or semi-annual basis and analyzed for BTEX, GRO, DRO, HO, and lead (total and dissolved). Analysis for MTBE, EDB, di-isopropyl ether (DIPE), ethyl tertiary-butyl ether (ETBE), tertiary amyl-methyl ether (TAME), tertiary butyl alcohol (TBA), and 1,2-dichloroethene (1,2-DCE) has also been included in several sampling events.

BTEX, GRO, DRO, HO, MTBE, and lead have been detected above MTCA Method A CULs. All other constituents analyzed were non-detect or were detected at concentrations below applicable MTCA Method A CULs.

Groundwater monitoring wells were initially gauged from 1991 to 2014. LNAPL was first observed in October 1991 in MW-3 at a thickness of 1.08 feet. LNAPL historically was observed in wells MW-3, MW-7, MW-12, and MW-13. The maximum LNAPL thickness observed at the site was 1.85 feet at MW-13 in June 2007. No LNAPL has been observed at the site since 2009. A sheen was also historically observed in MW-1, MW-4, and MW-5; however, no LNAPL was measured in those wells.

In 2008, CRA conducted a subsurface investigation to identify the potential source of LNAPL. During the 2008 investigation, LNAPL was observed in groundwater monitoring wells MW-7, MW-12, and MW-13 at thicknesses ranging from 0.03 feet (MW-7) to 0.24 feet (MW-13) (CRA 2008a). As mentioned above, the investigation included five soil borings (GB-1 through GB-5) in the vicinity of former USTs and dispenser islands to depths of 12 to 16 ft bgs. Grab groundwater samples were collected from temporary wells installed in each boring. Based on the analytical results, a source area for LNAPL was not determined.

- Groundwater in one boring (GB-5) contained elevated concentrations of TPH-GRO (1,100 micrograms per liter [ug/L]) and TPH-DRO (990 ug/L). These concentrations, however, were not indicative of LNAPL (CRA 2008).

Historical groundwater gauging data and analytical results are summarized in Tables 2, 3, and 4.

3.3 Historical Soil Vapor Investigations

Three dual-nested soil vapor probes (VP-1 through VP-3 at 4.5 and 7.5 ft bgs) were installed by CRA in October 2007 to assess any potential vapor intrusion (VI) concerns downgradient from the site. The probes were installed near wells MW-10, MW-11, and MW-14 (Figure 2) and were sampled in October and December 2007. Vapor samples were analyzed for BTEX, butane, propane, and isobutane according to United States Environmental Protection Agency (USEPA) Method TO-15 and oxygen, carbon dioxide, and methane by ASTM International (ASTM) Method D-1946. Johnson & Ettinger (J&E) Vapor Intrusion modeling using the results indicated that the analytes did not pose a VI risk (CRA 2008b). However, comparing the results to current MTCA screening levels indicates that the detected concentration of benzene exceeded the MTCA Method B Sub-Slab Soil Gas Screening Level in one sample (VP-1-8) collected in October 2007. However, no MTCA Method B exceedances (including

no detections of benzene) were observed during the December 2007 re-sampling event. The soil vapor samples were not analyzed for TPH. The historical 2007 soil vapor data are shown in Table 5.

4 Summary of Previous Remedial Actions

4.1 UST and Site Structure Removals

In June and July 1991, EMCON removed two USTs (one 550-gallon used oil UST and one 300-gallon kerosene UST) located in the northwestern portion of the property.

Two additional USTs with unknown contents were discovered within a concrete vault that was part of a former building on the southwestern portion of the property. In June 1991, Northwest Enviroservices, Inc. “pumped and removed approximately 20 gallons of accumulated product, water, and saturated soil from the base of the vault” (EMCON 1993).

In February 1992, EMCON removed the remaining six USTs: one 3,000-gallon supreme unleaded gasoline UST, one 6,500-gallon unleaded gasoline UST, one 8,000-gallon leaded gasoline UST, one 550-gallon heating oil UST, one 300-gallon UST with unknown contents, and one 100-gallon UST with unknown contents. The 300- and 100-gallon USTs with unknown contents were removed from the vault area. The pump islands, hoists, underground fuel infrastructure, and former station building were also demolished or removed during this event. Concentrations of TPH and BTEX constituents were detected above MTCA Method A CULs in soil samples collected from the sidewalls and bottoms of the excavations. Soil removed was stockpiled and subsequently placed back into excavations for stabilization. Four samples were collected from stockpiles, and one sample exceeded the MTCA Method A CUL for GRO (EMCON 1993).

4.2 1992 Excavations

In June 1992, excavations were performed in the following areas of the property: the vault area, the gasoline USTs and pump island area, the used oil and kerosene USTs area, and the heating oil UST area. Groundwater monitoring wells MW-1, MW-2, and MW-3 were decommissioned as part of these excavations. The MW-1 and MW-2 well abandonment consisted of over-excavating the area to a depth of approximately 20 ft bgs. Excavation areas are shown on Figure 5.

- **Vault Area Excavation**

The vault area was excavated to a maximum depth of 19 ft bgs, with an average depth of 10 to 12 ft bgs. Approximately 300 gallons of groundwater that seeped into the excavation area were pumped and removed as well as 50 cubic yards of soil. An additional 50 cubic yards of soil were excavated and removed from the heating oil UST area. Two soil samples (VA-SEF-12 and VA-NW-10) exceeded MTCA Method A CULs (EMCON 1993).

- **Used Oil and Kerosene USTs Area Excavation**

The excavation surrounding the former used oil and kerosene USTs extended to a maximum depth of 19 ft bgs near well MW-3, with an average depth of 10 to 12 ft bgs. Groundwater with sheen seeped into the excavation area at 13 ft bgs, and approximately 500 gallons were pumped and removed. Approximately 350 cubic yards of soil were excavated in this area. This excavation removed prior soil sample UOF-1 collected in

May 1991 at 7.5 ft bgs that exceeded MTCA Method A CULs. Two soil samples (FUOE-WW-8 and FUOE-NWC-7) exceeded MTCA Method A CULs at the west and northwest limits of the excavation, near the footings of the west-adjointing building (EMCON 1993).

- **Gasoline USTs and Pump Island Area Excavation**

The excavation of the former gasoline USTs and pump islands area extended to a maximum depth of 20 ft bgs near the center of the former gasoline USTs area, with an average depth of 12 to 15 ft bgs. Groundwater with a hydrocarbon sheen seeped into the excavation area at 13 ft bgs, and approximately 4,000 gallons were pumped and removed. An estimated 1,800 cubic yards of soil were excavated from this area (EMCON 1992). Three soil samples (FPIA-ESW-8, FPIA-EW-8, and FPIA-SWW-8) from the eastern and southern limits of the pump island excavation area exceeded MTCA Method A Cleanup Levels (EMCON 1993).

- **Heating Oil UST Excavation**

The heating oil UST excavation extend to a depth of approximately 6 ft bgs, with horizontal dimensions of approximately 8 feet by 10 feet. Groundwater was not encountered in the excavation. Soil samples (HOWW-4 and HOWNE-4) were collected from the sidewalls of the heating oil UST excavation and composited in the field. A discrete soil sample (HOF-5.5) was collected from beneath the fill cap end of the heating oil UST, at approximately 5.5 ft bgs. Soil samples did not exceed MTCA Method A Cleanup Levels (EMCON 1993).

The excavated soil from the heating oil UST, vault, used oil, and kerosene UST areas (450 cubic yards) was disposed of offsite. The excavated soil from the gasoline USTs and pump areas (1,800 cubic yards) was sifted through a mechanical screening device that aerated soil to volatilize hydrocarbons. Soils excavated from the gasoline UST and pump area were stockpiled between June 17 and August 14, 1992. The stockpiled soils were screened via photoionization detector (PID) and laboratory analytical samples (analyzed for TPH and BTEX) to ensure treatment to below MTCA Method A CULs and then used as backfill (EMCON 1993).

Samples collected from excavation sidewalls and bottoms were analyzed for GRO, DRO, HO and BTEX (Figure 5). GRO, toluene, and total xylenes were detected above the MTCA Method A CULs in several of the collected confirmation samples. Specifically, GRO, HO, and/or BTEX concentrations exceeded MTCA Method A CULs in two samples collected from the northwestern/western sidewalls of the used oil UST area excavation, three samples from the eastern/southern sidewall of the pump island area excavation, and two samples collected from the limits of the vault excavation. BTEX concentrations exceeded MTCA Method A CULs in four soil samples from the pump island area and vault excavations (EMCON 1993).

Total lead analysis was conducted on soil samples from the gasoline UST excavation area and excavated soils. Total lead was either not detected or was detected below MTCA Method A CULs (EMCON 1993).

A soil sample collected from beneath the service bay floor drain (SBFD-4) was submitted for analysis of VOCs, PCBs, and priority pollutant metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver). VOCs, PCBs, and metals were not detected in soil sample SBFD-4 (EMCON 1993).

4.3 Bimonthly Vacuum Extraction

Bimonthly vacuum truck extraction events were performed on groundwater monitoring wells MW-7 and MW-13 between March 2006 and May 2007. Extractions were discontinued due to insufficient LNAPL reduction and the appearance of LNAPL in MW-13, where it was detected at 1.85 feet in June 2007 (CRA 2009).

4.4 2009 Surfactant Extraction

In September 2009, in an attempt to decrease the LNAPL observed in wells MW-7, MW-12, and MW-13, which at the time contained LNAPL thicknesses of 0.01, 0.7, and 0.01 feet, respectively, Gold Crew HAD-O81 non-ionic surfactant at 4 percent (%) concentration was injected into these wells. Approximately 85 gallons of surfactant were injected into MW-12 and MW-13 at a rate of 5.7 gallons per minute; and approximately 75 gallons were injected into MW-7 over two hours. A vacuum truck then extracted 720 gallons of groundwater from the affected groundwater monitoring wells over the next several days (CRA 2009; Ecology 2008).

Subsequent groundwater monitoring in October 2009 found that the injections and vacuum extractions were effective at removing LNAPL from wells MW-7, MW-12, and MW-13. However, no decreases in dissolved phase hydrocarbon concentrations were observed in wells MW-4, MW-8, MW-10, and MW-11. Hydrocarbon concentrations increased at well MW-14 following injections (CRA 2009). No LNAPL has been observed in the treated wells since October 2009.

5 Remedial Investigation Activities

Arcadis conducted site investigation activities on September 20 through 22 and October 7, 2021. An additional groundwater monitoring event was conducted December 2021. In September, three exploratory borings (SB-1 through SB-3) were advanced and seven additional groundwater monitoring wells (MW-15 through MW-21) were installed to further evaluate the extent of petroleum impacts in soil and groundwater at the site. The location of MW-20 was modified from the proposed location in the Work Plan based on site conditions. MW-20 was planned to be installed in the alley south of the building across West Ferry Street from the property; however, the utility locate indicated this location was not feasible due to utilities running through the alley as well as overhead lines above. As a result, the well was moved to the south end of the alley west of the building; Arcadis verified this new location with Ecology via phone on September 17, 2021. In October, existing nested soil vapor probes VP-1 and VP-2 were sampled to further evaluate soil vapor quality and potential vapor intrusion concerns (note that VP-3 could not be located and was likely decommissioned). This section discusses objectives, field activities, analytical results, and the management of investigation-derived waste (IDW) associated with the completed site investigation.

5.1 Data Gap Investigation Objectives

RI activities were completed to further delineate the extent of residual soil and groundwater impacts at the site, and to evaluate current soil vapor conditions.

The investigation consisted of the advancement of three soil borings and the installation of seven groundwater monitoring wells. Soil samples were collected from the borings to further delineate soil impacts to the north and west of former gasoline USTs, to the south of the former vault area, and to the east of the property.

Groundwater monitoring wells were installed to further delineate downgradient groundwater impacts to the south, southeast, and southwest. Groundwater monitoring wells on the northwestern and central portions of the property were previously destroyed; therefore, additional groundwater monitoring wells were warranted in those areas to further assess groundwater quality at the site.

Additional soil vapor samples were collected from the existing off-property soil vapor probes to evaluate current soil vapor quality against MTCA screening levels.

5.2 Pre-field Activities

Before mobilizing to the site, Arcadis performed the following activities:

- Updated the site-specific health and safety plan and prepared job safety analyses and traffic control plans
- Secured ROW permits from the City
- Marked the proposed boring locations and contacted the state one-call public locate service a minimum of 48 hours prior to initiating the field activities; and
- Contracted a private utility locator to additionally identify potential conflicting utilities or other underground structures in addition to potential preferential pathways.

5.3 Utility Locate

At least 48 hours prior to conducting subsurface activities, Washington811 was notified to mark known public utilities within the work areas. In addition, Geomarkout Locating Company, a private utility locating company, conducted a utility survey within 24 hours prior to the start of the investigation. The utility locate survey was conducted on August 17, 2020. The survey included the use of ground-penetrating radar, to confirm that the proposed boring locations were clear of underground utilities and other features. Survey results, along with utility site plans provided by the City, were used to map utilities.

The City Public Works Department used a sonde locator to verify and mark the exact location of a sewer pipe beneath the Site.

5.4 Soil and Well Boring Drilling and Sampling

Drilling activities were conducted by a licensed drilling subcontractor, Holt Services, Inc. of Edgewood, Washington under the supervision of Arcadis personnel. Borings were first pre-cleared by air knife, vacuum truck, and/or hand auger to a minimum depth of 5 ft bgs. After pre-clearance, boreholes were advanced using direct-push technology or hollow stem auger drilling methods to a target depth of approximately 20 ft bgs. Boring depths and sampling intervals are presented in the table below and well construction details are presented in Table 6. Groundwater was encountered in the borings at depths ranging from 6.9 (MW-15) to 10.2 ft bgs (MW-21).

Location	Boring Type	Total Depth (feet bgs)	Laboratory Analytical Sample Intervals (feet bgs)
SB-1	Soil boring	20	7.5-8.5, 15-16, and 19-20
SB-2	Soil boring	20	6-7, 10.5-11.5, 15.5-16.5, and 18-19

Location	Boring Type	Total Depth (feet bgs)	Laboratory Analytical Sample Intervals (feet bgs)
SB-3	Soil boring	20	7.5-8.5 and 18-19
MW-15	Monitoring well	20	6.5-7.5, 10-11, 14-15, and 19-20
MW-16	Monitoring well	20	4-5, 14-15, and 19-20
MW-17	Monitoring well	20	8-9, 11.5-13, 15-16, and 19-20
MW-18	Monitoring well	20	8-9 and 19-20
MW-19	Monitoring well	20	7.5-8.5 and 18-19
MW-20	Monitoring well	20	7-8 and 15-16
MW-21	Monitoring well	20	2.5-3.5, 9-10, 11.5-12.5, 14-15, and 19-20

During pre-clearance, soil samples were collected by hand auger at approximately 2.5 ft bgs for lithologic logging and screened for VOCs using a PID. During drilling, Arcadis conducted lithologic logging in accordance with the Arcadis TGI for Soil Description (Appendix B). Boring logs can be found in Appendix C. Field samples were placed into sealed zipper-locked bags for visual inspection and VOC screening.

One blind duplicate soil sample was collected for data quality assurance purposes. The blind duplicate soil sample was collected from MW-20 at 15-16' (sample DUP-1).

Analytical samples were collected in laboratory-provided containers and placed in a cooler with ice. Samples were submitted to Pace Analytical (an Ecology-accredited laboratory) located in Mount Juliet, Tennessee (Pace), under standard chain-of-custody protocols. Soil samples were analyzed for the following:

- GRO analyzed by Northwest Method Total Petroleum Hydrocarbons – Gasoline (NWTPH-Gx)
- DRO and HO analyzed by Northwest Method Total Petroleum Hydrocarbons – Gasoline (NWTPH-Dx)
- BTEX by USEPA Method 8260D
- Lead by USEPA Method 6010
- MTBE by USEPA Method 8260

In addition, had there been soil samples that exceeded the MTCA Method A CUL for DRO additional analyses would have been performed for cPAHs by USEPA Method 8270. However, DRO was not detected in soil samples at concentrations exceeding the MTCA Method A CUL; therefore, cPAH analysis was not performed.

5.5 Monitoring Well Installation

Arcadis installed a total of seven groundwater monitoring wells (MW-15 through MW-21) during the September field activities. Groundwater monitoring wells were installed in accordance with the Washington Administrative Code by a licensed Washington driller. Groundwater monitoring wells were installed to a target depth of 20 ft bgs.

Construction details for monitoring wells MW-15 through MW-21 are summarized in Table 6. Each well was installed in accordance with the Minimum Standards for Construction and Maintenance of Wells (Washington Administrative Code [WAC] 173-160; Ecology 2013). Well construction diagrams are included on the boring logs in Appendix C.

The wellheads were completed at the ground surface with a locking well cap and traffic-rated bolt-down well vault. Following the installation of monitoring wells, the well location, ground surface, and top-of-casing elevations were surveyed by a professional Washington-licensed land surveyor, OTAK, Inc. of Lake Oswego, Oregon. Monitoring wells were developed subsequent to installation in September 2021 to ensure removal of fine-grained sediments from the vicinity of the well screen.

5.6 Groundwater Monitoring and Sampling

Groundwater at the Site is currently monitored with a network of seventeen (17) monitoring wells (MW-4 through MW-8 and MW-10 through MW-21). Quarterly gauging for the new monitoring network was started in 2021 and was performed on September 28th and December 15th. Groundwater levels during 2021 were comparable to historically recorded elevations. The groundwater flow direction during the 3rd quarter September monitoring event was to the south-southwest as shown on Figure 3. The groundwater flow direction during the 4th quarter December monitoring event was to the south as shown on Figure 4.

During the 3rd quarter sampling event, groundwater samples were collected from wells MW-4 through MW-8, MW-10 through MW-18, and MW-21.

Due to access agreement issues, monitoring wells MW-19 and MW-20 were not sampled during the 3rd quarter sampling event in September 2021. Monitoring wells MW-19 and MW-20 were originally thought to be in a public ROW but were later determined to be on private property, and access was not immediately granted by the property owner. Access to monitoring wells MW-19 and MW-20 was granted by the property owner at a later date. In December 2021, all monitoring wells, including MW-19 and MW-20, were sampled.

Samples were collected using low-flow methods and in accordance with the methodology described in the Arcadis TGI for Standard Groundwater Sampling for Monitoring Wells (Appendix D). Groundwater sampling field forms are included in Appendix E. Groundwater samples were collected in pre-preserved laboratory-provided bottles and placed in a cooler with ice. Samples were submitted to Pace under standard chain-of-custody protocol for the following analysis:

- GRO by NWTPH-Gx
- DRO and HO by NWTPH-Dx
- BTEX by USEPA Method 8260
- Dissolved Lead by USEPA Method 6000 series
- MTBE by USEPA Method 8260

Based on a 2007 benzo(a) pyrene exceedance in MW-7, groundwater in MW-7 was also analyzed for cPAHs by USEPA Method 8270E

5.7 Soil Vapor Sampling

On October 7, 2021, Arcadis collected soil vapor samples from existing soil vapor probes VP-1 and VP-2. Both vapor probe locations are nested, with screened intervals at 5 and 7 ft bgs. Probe VP-3 is assumed to have been paved over and was unable to be sampled. Note that due to a field oversight (lack of enough canisters), the probe in VP-2 at 5 feet was not sampled.

Sample trains were constructed at each probe location to allow for purging and sample collection. Sampling trains were assembled using 0.25-inch Teflon tubing (or equivalent) and connected to the soil vapor probes. Prior to sampling, approximately 1,500 milliliters (mL) of stagnant air were purged from the soil vapor probe and sample train to ensure samples were representative of subsurface conditions. The volume purged from the soil vapor probe was calculated based on the construction details of the existing soil vapor probes and a standard three-volume purge.

Soil vapor samples were collected using 1-liter stainless steel passivated canisters individually cleaned and batch certified by Friedman & Bruya, Inc. (a Washington-certified laboratory). Canisters were connected to soil vapor sampling regulators set to less than 200 milliliters per minute (mL/min). Canisters were allowed to collect for up to 10 minutes or when the remaining vacuum reached 5 inches of mercury (inHg), whichever came first.

An equipment blank and a duplicate soil vapor sample were collected for data quality assurance. The blind duplicate sample (DUP-1) was collected from VP-2 at 7 ft bgs.

Soil vapor sampling field forms are included in Appendix F.

Samples were submitted to Friedman & Bruya, Inc. under standard chain-of-custody procedures for the following analyses:

- Total petroleum hydrocarbons (TPH) with carbon chain specific results: EC5-8 (aliphatics), EC9-12 (aliphatics), and EC9-10 (aromatics) by TPH Massachusetts Air Phase Hydrocarbons (APH)
- BTEX, naphthalene, and MTBE by USEPA Method TO-15
- Helium (leak check) by ASTM Method 1946.

The approximate soil vapor probe locations are shown on Figure 2.

5.8 Investigation-Derived Waste

Soil cuttings, purged groundwater, and equipment rinse water generated during investigation activities were contained in Department of Transportation-approved 55-gallon steel drums. The investigation-derived waste (IDW) was labeled and temporarily stored on-site pending disposal. Following receipt of laboratory analytical data, the soil and water IDW were transported for appropriate disposal at a certified waste disposal facility. A waste manifest is provided in Appendix G.

6 Analytical Results

6.1 Quality Analyses

The following quality assurance and quality control (QA/QC) samples were collected during the 2021 Q3 and Q4 sampling events.

- A minimum of one field duplicate sample of soil vapor, groundwater, and soil were collected and submitted as blind samples to the analytical laboratory per 10 samples.
- One matrix spike/matrix spike duplicate per 20 samples.
- One rinsate blank sample per day for decontaminated, non-dedicated sampling equipment, as needed.
- One trip blank per cooler containing samples was analyzed for BTEX and GRO.
- One equipment blank sample was collected from the vapor sampling equipment to ensure equipment cleanliness.

6.2 Soil Results

Soil encountered in each boring generally consisted of sand and silt with some clay to the explored depths. Additional information on the encountered soil is provided on the boring logs in Appendix C.

Soil analytical results for samples collected from borings SB-2, SB-3, and MW-16 through MW-21 were either below MTCA Method A CULs or the analytes were not detected.

Soil analytical results for samples collected from borings SB-1 and MW-15 exceeded MTCA Method A CULs for the following COCs and depths:

- Soil collected from SB-1 at 15-16 ft bgs exceeded the MTCA Method A CUL for benzene (0.0651 mg/kg)
- Soil collected from SB-2 at 10.5-11.5 bgs exceeded the MTCA Method A CUL for GRO (45.6 mg/kg)
- Soil collected from MW-15 at 10-11 ft bgs exceeded the MTCA Method A CUL for GRO (467 mg/kg)
- Soil collected from MW-21 at 2.5-3.5 ft bgs and 11.5-12.5 bgs exceeded MTCA Method A CUL for GRO (64.4 mg/kg and 65.8 mg/kg, respectively)

It should be noted that both the above exceedances were collected from soil below the water table (with the exception of the MW-21 sample collected from 2.5-3.5 ft bgs) and thus may not be representative of actual subsurface soil conditions. The benzene exceedance in SB-1 was at a depth of 15-16 ft bgs, and benzene was not detected above the MTCA Method A CUL in samples collected above and below this depth. Benzene has also not been detected in groundwater since 2008 in MW-12, which is located downgradient of SB-1.

The GRO exceedance in MW-15 was at a depth of 10-11 ft bgs. GRO was not detected above the MTCA Method A CUL in samples collected above and below this depth.

Current soil analytical results are presented in Table 7. A soil status map showing the historical and current footprint of soil locations exceeding MTCA Method A CULs is shown on Figure 5. The soil laboratory analytical report and chain-of-custody documentation are provided in Appendix H.

6.3 Groundwater Results

Groundwater analytical results were collected in September for Q3 and December for Q4 of 2021 in conjunction with gauging events. During September, samples were collected from MW-4 through MW-8, MW-10 through MW-18, and MW-21. During December, samples were collected from MW-4 through MW-8 and MW-10 through MW-21. As discussed in Section 5.6, groundwater samples were not collected from MW-19 and MW-20 during the September sampling event due to access agreement issues. MTCA Method A CUL exceedances are listed below:

September 2021 MTCA Method A CULs COC Exceedances

- MW-4 exceeded MTCA Method A CULs for GRO (8,850 µg/L)
- MW-7 exceeded MTCA Method A CULs for GRO (8,990 µg/L) and DRO (565 µg/L)
- MW-8 exceeded MTCA Method A CULs for GRO (3,600 µg/L)
- MW-10 exceeded MTCA Method A CULs for GRO (4,150 [4,150] µg/L) and DRO (986 [1,000] µg/L)
- MW-11 exceeded MTCA Method A CULs for GRO (4,190 µg/L) and DRO (543 µg/L)
- MW-13 exceeded MTCA Method A CULs for GRO (4,940 [4,530] µg/L) and DRO (730 [752] µg/L)
- MW-14 exceeded MTCA Method A CULs for GRO (5,110 µg/L) and DRO (556 µg/L)
- MW-17 exceeded MTCA Method A CULs for DRO (546 µg/L)

December 2021 MTCA Method A CULs COC Exceedances

- MW-8 exceeded MTCA Method A CULs for GRO (7,270 µg/L)
- MW-14 exceeded MTCA Method A CULs for GRO (7,390 µg/L), DRO (686 µg/L), and Xylenes (1,240 µg/L).
- MW-17 exceeded MTCA Method A CULs for GRO (2,800 µg/L)

The groundwater laboratory analytical reports and chain-of-custody documentation are provided in Appendix I. Current groundwater gauging data and analytical results are presented in Tables 8 and 9. Groundwater analytical results with MTCA boundary maps from the current investigation are shown for September 2021 on Figure 6 and December 2021 on Figure 7.

6.4 Soil Vapor Results

Soil vapor samples were collected from existing off-property soil vapor probes VP-1 and VP-2 to evaluate current soil vapor quality against MTCA Method B screening levels. The analyzed constituents were not detected in soil vapor samples collected in 2021, except for C9-12 range TPH (aliphatics) which were detected at concentrations ranging from 340 to 460 µg/m³. Based on the soil vapor analytical results, there are no vapor intrusion concerns for the off property building to the south; this will be confirmed with another VI sampling event in May 2022.

Current soil vapor analytical results are presented in Table 10 and shown on Figure 8. The analytical laboratory report and chain-of-custody documentation are provided in Appendix J.

7 Conceptual Site Model

The conceptual site model uses data collected during previous investigations and remediation activities to understand constituent occurrence, movement, and potential exposures at the site.

7.1 Source Characterization

As described in Sections 3 and 4, multiple investigations and remediation activities have been conducted at the site. Known sources of petroleum contaminants are the overfill gasoline release in 1989 and former USTs and dispenser islands. No other known source has been identified onsite. A 2008 subsurface investigation was conducted to determine whether an additional source existed on site; however, no indication of an additional source was discovered. Based on the current and historical data, the soil and groundwater MTCA boundary is delineated to the north, southwest, and west.

Based on known sources of contamination and on MTCA Table 830-1. Required Testing for Petroleum Releases (WAC 173-340-900), selected soil samples collected from the used oil UST location were tested for the following constituents: GRO, DRO, HO, BTEX, EDB, EDC, MTBE, lead, cPAHs, PCBs, and VOCs.

Results of analytical testing conducted in 2021 as well as during previous environmental investigations at the site have indicated that EDB, EDC, cPAHs (except for benzo(a)pyrene at MW-7 in 2007), PCBs, DIPE, ETBE, TAME, TBA, TCE, and PCE are below MTCA Method A CULs. This data can be seen in Tables 1, 2, 3, 4, and 9.

Based on historical results, GRO, DRO, HO, BTEX, MTBE, and lead are considered constituents of concern (COCs) and have been confirmed in soil and groundwater at the site. Additionally, based on the detected concentration of benzo(a) pyrene in a groundwater sample collected from well MW-7, cPAHs are considered constituents of potential concern (COPCs) in groundwater. Accordingly, groundwater samples collected from this location were also for analyzed for cPAHs.

7.2 Nature and Extent of Contamination

Contaminated soil was removed from areas of the site during the 1991 and 1992 excavations; however, some confirmation samples from the excavations indicated that contamination may remain on site in the area of the former gasoline USTs and pump islands, near the former used oil UST, and near the former vault area. Except for one exceedance of benzene in SB-1, as discussed in section 6.2, soil samples collected off-property during the current investigation did not contain COCs above MTCA Method A CULs.

Groundwater analytical results indicate that COCs exceed MTCA Method A CULs in groundwater on the southern portion and to the south of the property, in monitoring wells located on the south side of Ferry Street. Concentrations of COCs were variable between the two 2021 groundwater monitoring events; therefore, additional groundwater data is needed to further evaluate the extent of impacted groundwater and any concentration trends.

7.3 Fate and Transport

7.3.1 General Fate and Transport Mechanism

As a generality (non-site-specific), petroleum hydrocarbons can exist in four phases in soils (unsaturated vadose zone and/or smear zone):

- *Residual phase.* Petroleum hydrocarbons are sorbed to soil or trapped within soil pore space.
- *Dissolved or aqueous phase.* Petroleum hydrocarbons are dissolved in water within soil pore space.
- *Vapor phase.* Petroleum hydrocarbons are volatilized into soil pore space.
- *Free phase.* Recoverable LNAPL.

Following a release, petroleum hydrocarbons are driven by gravity toward the water table and, depending on the quantity released, soil type, and depth to groundwater, may reach the groundwater table. As the hydrocarbons migrate toward the water table, residual LNAPL may be left behind in each of the phases (residual, dissolved, and free).

When residual-, dissolved-, or free-phase LNAPL comes into contact with groundwater, dissolution of the hydrocarbons to the groundwater can occur. If a release of petroleum hydrocarbons is large enough, LNAPL may overcome the capillary forces at the capillary fringe within smear zone soil and pool on top of the groundwater. When rainwater infiltrates subsurface soil in the area of a release, the water will flow downward through the soil and may preferentially follow high-conductivity soil lenses horizontally and pick up constituents before reaching groundwater.

7.3.2 Site Fate and Transport Mechanism

Petroleum hydrocarbons encountered at the site are described below:

- *Residual phase.* Previous soil investigations indicated that residual soil impacts at the site are primarily in the vicinity of former used oil and gasoline USTs and dispenser islands. Historical soil impacts were encountered at a range from 2 to 12 ft bgs. As noted above, COC exceedances in soil (at SB-1 and MW-15) were collected from below the water table and thus may not reflect actual soil conditions. The USTs and associated equipment on-site were the source of soil impacts; former station infrastructure and most soils surrounding the former tanks have been removed by excavation.
- *Dissolved phase.* Recent and historical sampling indicate that petroleum impacts remain in groundwater at the site. Downgradient wells MW-10, MW-11, and MW-14 have shown a stable or decreasing trend in GRO concentrations over the last decade. Additionally, COC concentrations in wells MW-4, MW-5, and MW-8, located on property, appear to fluctuate seasonally, but have exhibited an overall decreasing trend over time. Wells MW-15, MW-16, and MW-21, installed as part of this remedial investigation, indicate that dissolved phase COC concentrations in the vicinity of the former gasoline USTs and pump islands are below Method A CULs. Downgradient wells MW-19 and MW-20 demonstrate that petroleum impacts have not migrated further to the south-southwest. Based on the above information, the dissolved-phase plume appears to be stable,
- *Vapor phase.* GRO was detected above MTCA Method A CULs in one soil sample collected from MW-15 at a depth of 10 ft bgs; however, this sample was from below the water table and groundwater samples collected from this location have not contained COCs at concentrations above MTCA Method A CULs. Accordingly,

based on Ecology’s guidance (Ecology 2022), detected GRO concentrations in soil do not pose a risk for vapor intrusion into the west-adjointing building. Soil vapor samples collected in 2021 indicate that vapor phase COCs do not pose a risk for vapor intrusion into the building located south of the subject property.

- *Free phase.* LNAPL was historically observed in wells MW-3, MW-7, MW-12, and MW-13. However, following a surfactant-enhanced LNAPL recovery event in 2009, LNAPL has not been observed on or off-Property. COC concentrations in site wells also are not indicative of the presence of LNAPL at the site.

7.4 Exposure Pathways and Potential Receptors

7.4.1 Potential Receptors

The primary human receptors at the site are members of the public using the park, customers of surrounding businesses, including the businesses located south across Ferry Street, and potential future construction workers. Current ecological receptors are limited due to the presence of primarily paved areas and landscaping at the site. Additionally, due to the location of the site and its land use designation, future native and invasive vegetation are not expected to grow at the site.

There is less than 1.5 acres of contiguous undeveloped land on or within 500 feet of any area of the site; therefore, no further terrestrial ecological evaluation (TEE) is required under WAC 173-240-749(1)(c). The TEE Form is included in Appendix K.

7.4.2 Potential Exposure Pathways

Potential exposure pathways for the site are:

- *Soil.* Potential exposure to soil via incidental ingestion, dermal contact, and inhalation of windblown dust and leaching to groundwater.
- *Groundwater.* Potential exposure to groundwater via incidental ingestion and dermal contact.
- *Soil vapor.* Potential exposure to soil vapor via inhalation (volatilization of petroleum impacts contained in groundwater and/or soil).

Potential exposure pathways are evaluated below.

7.4.2.1 Potential Soil Exposure Pathways

Potential soil exposure pathways for the site include:

Soil samples collected during soil investigations have indicated COC concentrations above the MTCA Method A CULs at depths of 2 to 12 ft bgs.

- *Exposure to soil via incidental ingestion, dermal contact, and inhalation of windblown dust.* The site is primarily paved, and subsurface soil in landscaped areas is covered with landscape mulch, vegetation, and planting soil; therefore, potential exposure via incidental ingestion, dermal contact, or inhalation of windblown dust is not a complete pathway for visitors of Hammer Heritage Square. Potential exposure via incidental ingestion, dermal contact, or inhalation of windblown dust for construction workers is a complete pathway as soil concentrations above MTCA Method A CULs are observed as shallow as 2 ft bgs.

- *Soil leaching to groundwater.* COC concentrations in groundwater have been shown to be above Method A groundwater CULs. Therefore, the soil leaching to groundwater pathway is potentially complete.

7.4.2.2 Potential Groundwater Exposure Pathway

Groundwater analytical data from sampling events in 2013, 2014, 2020, and 2021 showed concentrations of GRO and DRO above MTCA Method A CULs. However, current human receptors (park visitors) are not exposed to groundwater and groundwater beneath the site is not used as drinking water. Drinking water in the area comes from Judy Reservoir, located above the town of Clear Lake, Washington. Due to the depth of groundwater (ranging from 8 to 12 ft bgs), no ingestion or dermal contact are likely during any future subsurface construction work. However, per WAC 173-340-720(2), groundwater in Washington State is generally classified as potable unless it can be demonstrated that groundwater is not a possible future source, to protect potential beneficial uses.

7.4.2.3 Soil Vapor Potential Pathway

Because the site is mostly paved and open-air, current human receptors (park visitors) are not likely to be exposed to vapor phase petroleum hydrocarbons. Future construction workers may be exposed to vapor phase petroleum hydrocarbons through inhalation when working at depths of 2 ft bgs or greater. The 2021 soil vapor analytical results indicate that there is no vapor intrusion risk to inhabitants of the building across West Ferry Street to the south of the property.

8 Proposed Cleanup Standards

MTCA Method A CULs are considered the CULs for the site. For this RI, soil and groundwater concentrations are compared to current MTCA Method A CULs and impacts are identified as analyte concentrations detected greater than current MTCA Method A CULs.

The preliminary COCs for the site include GRO, DRO, HO, BTEX, lead, MTBE, benzo(a)pyrene, and cPAHs.

MTCA Method A CULs for the site COCs in soil and groundwater are presented in the table below.

MTCA Method A CULs for Site COCs for Soil and Groundwater

COC	MTCA CUL Groundwater (µg/L)	MTCA CUL Soil (mg/kg)
GRO ¹	800/1,000	30/100
DRO	500	2,000
HO	500	2,000
Benzene	5	0.03
Toluene	1,000	7
Ethylbenzene	700	6

COC	MTCA CUL Groundwater (µg/L)	MTCA CUL Soil (mg/kg)
Total Xylenes	1,000	9
Lead	15 (dissolved lead)	250
MTBE	20	0.1
Benzo(a)-pyrene	0.1	--
Total cPAHs	0.1	--

¹For GRO, MTCA CULs depend on the presence of benzene: with benzene present (800 micrograms per liter [µg/L] and 30 milligrams per kilogram [mg/kg]) and without (1,000 µg/L and 100 mg/kg).

MTCA Method B indoor air CULs and sub-slab soil vapor screening levels for site COCs are presented below.

MTCA Method B CULS for Air

COC	MTCA Method B CUL Indoor Air ¹ (µg/m ³)	MTCA Method B Screening Level Sub-Slab Soil Vapor ¹ (µg/m ³)
Benzene	0.32	11
Toluene	2,300	76,000
Ethylbenzene	460	15,000
Total Xylenes	46	1,500
Naphthalene	0.073	2.5
Total Petroleum Hydrocarbons ²	46	1,500

¹Method B cancer risk values used when provided. If cancer risk values are not provided, noncancer risk is listed.

² Total petroleum hydrocarbon (TPH) concentration is the sum total of volatile organic compounds and aliphatic and aromatic hydrocarbons.

µg/m³ = micrograms per cubic meter

9 Conclusions and Recommendations

This report documents RI activities conducted in 2021 which were completed to further delineate the extent of residual soil and groundwater impacts at the site, and to evaluate current off-property soil vapor conditions.

The investigation included the advancement of three soil borings (SB-1 through SB-3), the installation and sampling of seven additional monitoring wells (MW-15 through MW-21) in September and December 2021, and the sampling of existing off-property soil vapor probes VP-1 and VP-2. Soil samples were collected from the borings to further delineate soil impacts to the north and west of the vicinity of the former gasoline USTs, to the south of the vault area, and to the east of the property. Based on the results, COCs remain in soil at concentrations above MTCA Method A CULs to the east of the former pump islands and gasoline USTs (SB-1), and in the vicinity of the former station building (MW-15).

The additional groundwater monitoring wells were installed to further delineate groundwater impacts to the south, southeast, and southwest, and to evaluate current groundwater quality in the northern and central portions of the property. Based on the analytical results, the extent of COCs in groundwater above MTCA Method A CULs is not delineated off-property to the south and/or southeast. However, since only two events have been performed in the new wells, additional groundwater monitoring is recommended to further evaluate groundwater quality and any concentration trends.

LNAPL has not been observed in site monitoring wells since 2009 and, based on historical groundwater sampling, the dissolved-phase plume appears to be stable or receding. However, additional evaluation of groundwater impacts will be conducted after four consecutive quarters of groundwater samples are collected from the current monitoring well network.

The current soil vapor sample results yielded a similar conclusion as the 2007 data that site COCs do not pose a vapor intrusion risk to receptors (occupants of the building located across Ferry Street to the south); this will be confirmed with an additional VI sampling event in May 2022, approximately 6 months from the first event.

Based on the results of this investigation, Arcadis recommends the following actions:

- Continue quarterly groundwater gauging and sampling in 2022;
- Evaluate groundwater conditions after four groundwater monitoring events have been completed; and
- Perform one additional soil vapor sampling event in June 2022.

10 References

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Tables

Table 1. Historical Soil Analytical Results
 Chevron Service Station No. 97502
 640 Metcalf Street, Sedro-Woolley, Washington
 Analytical results are presented in milligrams per kilogram (mg/kg)

Sample ID	Date	Depth	TPH	GRO	DRO	HO	DRO+HO	Benzene	Toluene	Ethylbenzene	Total Xylenes	Lead	MTBE	Benzo(a)-anthracene	Chrysene	Benzo(b)-fluoranthene	Benzo(k)-fluoranthene	Benzo(a)-pyrene	Indeno(1,2,3-cd)-pyrene	Dibenz(a,h)-anthracene	Total cPAHs	EDC	TCE	PCE		
MTCA Method A CULs			--	30/100	2,000	2,000	2,000	0.03	7	6	9	250	0.1	--	--	--	--	0.1	--	--	0.1	--	0.05	0.03		
B-12	5/2/2006	15	--	<1	<3	<10	6.5	<0.0005	0.002	0.013	0.047	--	--	--	--	--	--	--	--	--	--	--	--	--		
B-13	5/2/2006	10	--	<1	<3	<10	6.5	<0.0005	<0.0009	<0.0009	<0.0009	--	--	--	--	--	--	--	--	--	--	--	--	--		
B-13	5/2/2006	15	--	18	9.5	<10	14.5	0.001	0.004	0.047	0.095	--	--	--	--	--	--	--	--	--	--	--	--	--		
B-14	5/2/2006	10	--	<1	<3	<10	8	<0.0005	<0.0009	<0.0009	<0.0009	--	--	--	--	--	--	--	--	--	--	--	--	--		
B-14	5/2/2006	15	--	10	<3	<10	6.5	<0.0005	<0.0009	<0.0009	<0.0009	--	--	--	--	--	--	--	--	--	--	--	--	--		
CRA April 2008																										
GB-1	4/1/2008	5	--	97.0	150.0	95.0	245.0	0.0009	<0.001	<0.001	<0.001	<0.171	<0.0005	0.010	0.014	0.023	0.0085	0.015	0.011	0.0033	0.02081	<0.001	<0.001	<0.001		
GB-1	4/1/2008	8	--	37.0	34.0	48.0	82.0	0.003	0.002	<0.0009	0.005	<0.175	<0.0005	0.0095	0.013	0.020	0.0081	0.014	0.0096	0.0028	0.01913	<0.0009	<0.0009	<0.0009		
GB-2	4/1/2008	5	--	110.0	190.0	79.0	269.0	0.003	0.004	0.001	0.008	13.6	<0.0006	0.010	0.016	0.022	0.0084	0.014	0.0083	0.0026	0.01929	<0.001	<0.001	<0.001		
GB-2	4/2/2008	11.5	--	<1.6	<3.8	<13.0	8.4	<0.0006	<0.001	<0.001	<0.001	<0.186	<0.0006	<0.00085	<0.00043	0.0011	<0.00085	<0.00085	<0.00085	<0.00085	0.00070715	<0.001	<0.001	<0.001		
GB-3	4/1/2008	11	--	330.0	98.0	<12.0	104	<0.033	<0.066	<0.066	<0.066	31.1	<0.033	0.0077	0.011	0.014	0.0054	0.0093	0.0049	0.0015	0.01276	<0.066	<0.066	<0.066		
GB-3	4/1/2008	2	--	340.0	430.0	87.0	517.0	0.002	0.002	<0.001	0.001	<0.167	<0.0006	0.019	0.026	0.035	0.016	0.025	0.015	0.0047	0.03423	<0.001	<0.001	<0.001		
GB-3	4/1/2008	5	--	320.0	370.0	180.0	550.0	0.004	0.005	0.003	0.011	<0.165	<0.0005	0.027	0.037	0.047	0.021	0.034	0.019	0.0056	0.04633	<0.001	<0.001	<0.001		
GB-4	4/1/2008	11.5	--	47.0	15.0	<13.0	21.5	<0.030	<0.059	<0.059	<0.059	0.748	<0.030	<0.00086	<0.00043	<0.00086	<0.00086	<0.00086	<0.00086	<0.00086	0.0006473	<0.059	<0.059	<0.059		
GB-4	4/1/2008	2	--	380.0	430.0	62.0	492.0	<0.036	<0.071	<0.071	<0.071	18.3	<0.036	0.022	0.030	0.040	0.017	0.027	0.018	0.0065	0.03765	<0.071	<0.071	<0.071		
GB-4	4/1/2008	5	--	28.0	35.0	30.0	65.0	0.002	0.002	<0.001	0.003	12.6	<0.0005	0.0044	0.0068	0.0088	0.0049	0.0066	0.0047	0.0013	0.009078	<0.001	<0.001	<0.001		
GB-5	4/2/2008	5.5	--	<1.7	<4.0	<13.0	8.5	<0.0006	<0.001	<0.001	<0.001	5.21	<0.0006	<0.00089	0.00064	0.00091	<0.00089	<0.00089	<0.00089	<0.00089	0.0006749	<0.001	<0.001	<0.001		
GB-5	4/2/2008	11.5	--	<1.6	<3.9	<13.0	8.45	<0.0006	<0.001	<0.001	<0.001	<0.191	<0.0006	<0.00086	<0.00043	<0.00086	<0.00086	<0.00086	<0.00086	<0.00086	0.00064715	<0.001	<0.001	<0.001		
GB-5	4/2/2008	8	--	19.0	<3.9	<13.0	8.54	<0.0006	<0.001	<0.001	<0.001	<0.191	<0.0006	<0.00086	0.00086	<0.00086	<0.00086	<0.00086	<0.00086	<0.00086	0.006493	<0.001	<0.001	<0.001		

Notes:
 30/100 = GRO MTCA Method A CUL with benzene present is 30 mg/kg and without benzene present is 100 mg/kg
 Grey text indicates soil that has been excavated
BOLD and highlighted values are greater than their respective MTCA Method A CUL
BOLD values are non-detect below the laboratory MDL, but the MDL is greater than the MTCA Method A CUL
 MW-1, MW-2, and MW-3 are over-excavated
 Map of sample locations and laboratory results not available for non-detect analytes
 Sample depth measured in feet below ground surface

Abbreviations:
 ID = Identification
 GB = Grab-groundwater sample
 MW = Groundwater monitoring well
 -- = Not applicable, not available, or not analyzed
 ND = Not detected
 MDL = Method detection limit
 MTCA = Model Toxics Control Act Cleanup
 CUL = Cleanup Level
 USEPA = United States Environmental Protection Agency

Laboratory Qualifiers:
 <n = Not detected at or above the laboratory MDL

Analytical Methods:
 Samples analyzed by USEPA Method 418.1
 TPH = Total Petroleum Hydrocarbons
 Samples analyzed by NWTPH-Gx
 GRO = Total Petroleum Hydrocarbons as Gasoline Range Organics
 Samples analyzed by NWTPH-Dx
 DRO = Total Petroleum Hydrocarbons as Diesel Range Organics
 HO = Total Petroleum Hydrocarbons as Heavy Oil Range Organics
 Samples analyzed by USEPA Method 8260B
 BTEX = benzene, toluene, ethylbenzene, and total xylenes
 MTBE = Methyl tertiary butyl ether
 EDC = 1,2-Dichloroethane
 TCE = Trichloroethene
 PCE = Tetrachloroethene
 Samples analyzed by USEPA Method 6020
 Lead
 Samples analyzed by USEPA Method 8270C-SIM
 Benzo(a)anthracene
 Chrysene
 Benzo(b)fluoranthene
 Benzo(k)fluoranthene
 Benzo(a)pyrene
 Indeno(1,2,3-cd)pyrene
 Dibenz(a,h)anthracene

Table 2. Historical Groundwater Gauging Data and Select Analytical Results

Chevron Service Station No. 97502

640 Metcalf Street, Sedro-Woolley, Washington

Analytical results are presented in micrograms per liter (µg/L)

Well	Date	TOC	DTP	DTW	GWE	NAPL	Total					Dissolved			Comments			
							GRO	DRO	HO	DRO+HO	Benzene	Toluene	Ethylbenzene	Xylenes		MTBE	Lead	Total Lead
MTCA Method A CULs							800/1,000	500	500	500	5	1,000	700	1,000	20	15	15	0.01
GB-1	4/1/2008	--	--	--	--	--	<250	150	110	260	<4	<4	<4	<4	<4	--	--	<4
GB-2	4/2/2008	--	--	--	--	--	100 [130]	330	<98	379	<0.5 [<0.5]	<0.5 [<0.5]	<0.5 [<0.5]	<0.5 [<0.5]	<0.5 [<0.5]	--	8.5	--
GB-3	4/1/2008	--	--	--	--	--	79.0	88.0	<94.0	135	<0.5	<0.5	0.7	<0.5	<0.5	--	--	--
GB-4	4/1/2008	--	--	--	--	--	<50.0	<81.0	<100.0	90.5	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	--
GB-5	4/2/2008	--	--	--	--	--	1100.0	990.0	<97.0	1038.5	<0.5	<0.5	<0.5	<0.5	<0.5	--	27.8	--
MW-1	2/12/1991	--	--	--	--	--	4,800	--	--	--	386	356	73	463	--	--	--	--
MW-1	10/21/1991	--	--	10.97	--	--	10,000	1,000	<100	1050	1500	1100	200	1,700	--	--	--	--
MW-1	11/22/1991	--	--	10.69	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	1/29/1992	--	--	--	--	--	10,000	<1000	<1000	1000	1700	600	167	2,400	--	--	--	--
MW-2	2/12/1991	--	--	--	--	1	2,800	--	--	--	125	128	64	238	--	--	--	--
MW-2	10/21/1991	--	--	10.71	--	--	4,000	<100	<100	100	257	159	135	490	--	--	--	--
MW-2	11/22/1991	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-2	1/29/1992	--	--	--	--	--	2,000	<1000	<1000	1000	309	67	113	415	--	--	--	--
MW-3	2/12/1991	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	10/21/1991	--	--	--	--	1.08	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	11/22/1991	--	--	10.75	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	1/29/1992	--	--	--	--	--	14,000	ND	ND	--	4,400	340	2,000	1,600	--	--	--	--
MW-4	9/25/1992	56.37	--	--	--	--	25,000	5,060	ND	5060	2,800	830	4,600	4,000	--	--	--	--
MW-4	2/24/1993	56.37	--	10.42	45.95	--	7,970	3,460	ND	3460	352	2	418	1,360	--	--	--	--
MW-4	5/17/1993	56.37	--	10.20	46.17	--	9,180	2,630	ND	2630	314	281	981	1,610	--	--	--	--
MW-4	8/2/1993	56.37	--	10.44	45.93	--	--	1,390	ND	1390	--	--	--	--	--	--	--	--
MW-4	8/24/1993	56.37	--	--	--	--	14,900	--	--	--	152	614	499	2,880	--	--	--	--
MW-4	11/3/1993	56.37	--	11.67	44.70	--	16,100	1,092	ND	1092	114	605	79	1,980	--	--	--	--
MW-4	2/15/1994	56.37	--	11.54	44.83	--	16,300	1,070	ND	1070	203	552	210	1,810	--	--	--	--
MW-4	5/20/1994	56.37	--	11.00	45.37	--	11,400	1,230	ND	1230	92.2	357	20	612	--	--	--	--
MW-4	8/23/1994	56.37	--	11.84	44.53	--	12,400	830	ND	830	67.1	489	77	1,740	--	--	--	--
MW-4	11/16/1994	56.37	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	2/10/1995	56.37	--	11.23	45.14	--	11,000	1,700	ND	1700	95	160	310	890	--	--	ND	--
MW-4	5/12/1995	56.37	--	10.80	45.57	--	12,000	1,600	ND	1600	55	34	380	890	--	--	ND	--
MW-4	8/11/1995	56.37	--	11.40	44.97	--	11,000	1,000	ND	1000	27	33	340	980	--	--	ND	--
MW-4	11/2/1995	56.37	--	11.73	44.64	--	12,000	1,400	940	2340	24	24	220	430	--	--	ND	--
MW-4	1/31/1996	56.37	--	9.62	46.75	--	6,200	900	ND	900	17	6.4	250	410	--	--	--	--
MW-4	5/9/1996	56.37	--	9.88	46.49	--	97.7	253	ND	253	1.7	0.975	7.01	78	--	--	--	--
MW-4	2/3/1997	56.37	--	8.83	47.54	--	ND	ND	ND	--	ND	ND	2.1	1.98	--	--	--	--
MW-4	8/5/1997	56.37	--	10.10	46.27	--	172	ND	ND	--	0.876	0.635	7.36	17.3	--	--	--	--
MW-4	2/11/1998	56.37	--	9.97	46.40	--	ND	ND	ND	--	1.15	0.975	0.997	2.66	--	--	--	--
MW-4	8/27/1998	56.37	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	3/13/2000	56.37	--	9.75	46.62	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	9/19/2000	56.37	--	10.71	45.66	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	3/20/2001	56.37	--	10.45	45.92	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	8/21/2001	56.37	--	11.08	45.29	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	7/2/2005	56.37	--	7.86	48.51	--	<48	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	--	3.3	<0.5
MW-4	9/15/2005	56.37	--	8.93	47.44	--	1,200	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	--	1.2	--
MW-4	12/31/2005	56.37	--	8.64	47.73	--	<48	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.87	<0.87	--
MW-4	3/11/2006	56.37	--	8.00	48.37	--	<48	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.87	<0.87	--
MW-4	6/13/2006	56.37	--	7.59	48.78	--	<48	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.51	<0.51	--
MW-4	8/10/2006	56.37	--	8.58	47.79	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	12/5/2006	56.37	--	8.48	47.89	--	<260	79 J	<260	209	<1.0	<1.0	<1.0	<3.0	<1.0	0.085 BJ	4.8 B	--
MW-4	1/24/2007	56.37	--	7.71	48.66	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	5/8/2007	56.37	--	7.92	48.45	--	110	<130	--	65	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	3.5	--
MW-4	6/4/2007	56.37	--	9.72	46.65	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	9/5/2007	56.37	--	8.76	47.61	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	12/19/2007	56.37	--	9.07	47.30	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	3/6/2008	56.37	--	7.78	48.59	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	6/16/2008	56.37	--	7.08	49.29	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	9/11/2008	56.37	--	7.35	49.02	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	11/20/2008	56.37	--	7.38	48.99	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 2. Historical Groundwater Gauging Data and Select Analytical Results

Chevron Service Station No. 97502

640 Metcalf Street, Sedro-Woolley, Washington

Analytical results are presented in micrograms per liter (µg/L)

Well	Date	TOC	DTP	DTW	GWE	NAPL	MTCA Method A CULs					Benzene	Toluene	Ethylbenzene	Total Xylenes	Dissolved			Comments	
							GRO	DRO	HO	DRO+HO	MTBE					Lead	Total Lead	EDB		
							800/1,000	500	500	500	5	1,000	700	1,000	20	15	15	0.01		
MW-4	3/4/2009	56.37	--	6.89	49.48	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	6/4/2009	56.37	--	7.21	49.16	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	9/22/2009	56.37	--	9.04	47.33	--	<50	110	<70	145	--	--	--	--	--	--	--	--	--	
MW-4	9/23/2009	56.37	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	10/1/2009	56.37	--	9.80	46.57	--	2,000	520	<67	553.5	--	--	--	--	--	--	--	--	--	
MW-4	10/8/2009	56.37	--	10.11	46.26	--	330	570	<69	604.5	--	--	--	--	--	--	--	--	--	
MW-4	10/15/2009	56.37	--	10.18	46.19	--	420	1,000	<66	1033	--	--	--	--	--	--	--	--	--	
MW-4	10/22/2009	56.37	--	10.03	46.34	--	370	1,100	<66	1133	--	--	--	--	--	--	--	--	--	
MW-4	11/18/2009	56.37	--	9.11	47.26	--	1,500	860	<70	895	--	--	--	--	--	--	--	--	--	
MW-4	12/3/2009	56.37	--	8.16	48.21	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	12/16/2009	56.37	--	--	--	--	<50	53 J	<69	87.5	--	--	--	--	--	--	--	--	--	
MW-4	1/27/2010	56.37	--	8.50	47.87	--	58	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	2/12/2010	56.37	--	8.60	47.77	--	<50	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	3/30/2010	56.37	--	7.66	48.71	--	63	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	6/18/2010	56.37	--	7.80	48.57	--	<50	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	9/2/2010	56.37	--	9.33	47.04	--	1,600	770	<71	805.5	--	--	--	--	--	--	--	--	--	
MW-4	12/7/2010	56.37	--	9.33	47.04	--	440	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	3/7/2011	56.37	--	6.98	49.39	--	<50	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	6/9/2011	56.37	--	6.48	49.89	--	110	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	9/16/2011	56.37	--	8.10	48.27	--	<50	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	12/13/2011	56.37	--	8.65	47.72	--	530	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	12/19/2011	56.37	--	8.65	47.72	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	3/15/2012	56.37	--	9.75	46.62	--	<50	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	6/13/2012	56.37	--	7.00	49.37	--	<50	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	9/10/2012	56.37	--	8.40	47.97	--	160	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	12/10/2012	56.37	--	7.31	49.06	--	<50	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	3/11/2013	56.37	--	6.68	49.69	--	<50	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	6/12/2013	56.37	--	6.91	49.46	--	<50	<28	<66	47	--	--	--	--	--	--	--	--	--	
MW-4	9/18/2013	56.37	--	8.08	48.29	--	150	120	<67	153.5	--	--	--	--	--	--	--	--	--	
MW-4	12/11/2013	56.37	--	7.64	48.73	--	<50	<28	<66	47	--	--	--	--	--	--	--	--	--	
MW-4	3/12/2014	56.37	--	7.64	48.73	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	9/27/2014	56.37	--	8.11	48.26	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	8/17/2020	56.37	--	8.62	47.75	--	37.1 BJ	<66.7	<83.3	75	<0.0941	<0.278	<0.137	<0.174	--	--	--	<2.95	--	
MW-4	9/28/2021	56.42	--	9.8	46.62	--	8,850	440	<250	565	<1.00	<1.00	<1.00	<3.00	<1.00	--	--	<6.00	--	
MW-5	1/29/1992	--	--	--	--	--	2,000	2,000	ND	2000	345	32	213	95	--	--	--	--	--	
MW-5	9/25/1992	56.54	--	--	--	--	2,740	4,100	ND	4100	833	80	491	172	--	--	--	--	--	
MW-5	2/24/1993	56.54	--	9.35	47.19	--	509	6,620	ND	6620	254	ND	7	6	--	--	--	--	--	
MW-5	5/17/1993	56.54	--	9.21	47.33	--	ND	410	ND	410	15.5	ND	2	2	--	--	--	--	--	
MW-5	8/2/1993	56.54	--	9.59	46.95	--	--	ND	ND	--	--	--	--	--	--	--	--	--	--	
MW-5	8/24/1993	56.54	--	--	--	--	260	--	--	--	62	8	ND	9	--	--	--	--	--	
MW-5	11/3/1993	56.54	--	11.00	45.54	--	1,780	1,800	ND	1800	243	1	38	27	--	--	--	--	--	
MW-5	2/15/1994	56.54	--	10.76	45.78	--	950	1,610	ND	1610	914	165	49	148	--	--	--	--	--	
MW-5	5/20/1994	56.54	--	10.15	46.39	--	3,180	2,200	ND	2200	599	108	22	129	--	--	--	--	--	
MW-5	8/23/1994	56.54	--	10.95	45.59	--	3,310	2,160	ND	2160	701	140	45	207	--	--	--	--	--	
MW-5	11/16/1994	56.54	--	11.22	45.32	--	1,090	1,620	ND	1620	258	54	15	135	--	--	--	--	--	
MW-5	2/10/1995	56.54	--	10.36	46.18	--	4,200	2,000	310	2310	560	24	140	180	--	--	--	ND	--	
MW-5	5/12/1995	56.54	--	9.86	46.68	--	1,200	2,200	ND	2200	480	13	110	120	--	--	--	ND	--	
MW-5	8/11/1995	56.54	--	10.68	45.86	--	4,400	1,700	ND	1700	400	14	140	180	--	--	--	ND	--	
MW-5	11/2/1995	56.54	--	10.89	45.65	--	4,600	1,800	ND	1800	500	16	110	160	--	--	--	ND	--	
MW-5	1/31/1996	56.54	--	8.40	48.14	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	5/9/1996	56.54	--	8.73	47.81	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	2/3/1997	56.54	--	7.20	49.34	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	8/5/1997	56.54	--	9.36	47.18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	2/11/1998	56.54	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	8/27/1998	56.54	--	10.14	46.40	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	1/19/1999	56.54	--	8.31	48.23	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	8/30/1999	56.54	--	9.58	46.96	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	3/13/2000	56.54	--	8.57	47.97	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	9/19/2000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Well inaccessible
MW-5	3/20/2001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Well inaccessible
MW-5	8/21/2001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Well inaccessible

Table 2. Historical Groundwater Gauging Data and Select Analytical Results

Chevron Service Station No. 97502

640 Metcalf Street, Sedro-Woolley, Washington

Analytical results are presented in micrograms per liter (µg/L)

Well	Date	TOC	DTP	DTW	GWE	NAPL	MTCA Method A CULs					Benzene	Toluene	Ethylbenzene	Total Xylenes	Dissolved			Comments
							GRO	DRO	HO	DRO+HO	5					1,000	700	1,000	
MW-5	3/11/2002	56.54	--	8.50	48.04	--	<50	--	--	--	<0.50	<0.50	<0.50	<1.5	<2.5	--	--	--	
MW-5	7/3/2002	56.54	--	8.96	47.58	--	<50	--	--	--	<0.50	<0.50	<0.50	<1.5	<2.5	--	--	--	
MW-5	9/13/2002	56.54	--	10.43	46.11	--	72	--	--	--	0.85	<0.50	<0.50	<1.5	<2.5	--	--	--	
MW-5	12/16/2002	56.54	--	10.59	45.95	--	730	--	--	--	80	1.6	6.7	<1.5	<5.0	--	--	--	
MW-5	3/6/2003	56.54	--	9.84	46.70	--	<50	--	--	--	0.54	<0.50	<0.50	<1.5	<2.5	--	--	--	
MW-5	6/4/2003	56.54	--	9.30	47.24	--	<50	--	--	--	5.3	<0.5	<0.5	<1.5	<2.5	--	--	--	
MW-5	9/11/2003	56.54	--	10.86	45.68	--	990	--	--	--	110	1.7	7.7	<1.5	<2.5	--	--	--	
MW-5	12/17/2003	56.54	--	8.86	47.68	--	<50	--	--	--	<0.5	<0.5	<0.5	<1.5	<2.5	--	--	--	
MW-5	3/17/2004	56.54	--	8.22	48.32	--	<50	--	--	--	<0.5	<0.5	<0.5	<1.5	<2.5	--	--	--	
MW-5	6/11/2004	56.54	--	8.42	48.12	--	<50	--	--	--	<0.5	<0.5	<0.5	<1.5	<2.5	--	--	--	
MW-5	9/21/2004	56.54	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Well inaccessible
MW-5	12/21/2004	56.54	--	6.85	49.69	--	<50	--	--	--	<0.5	<0.5	<0.5	<1.5	<2.5	--	--	--	
MW-5	7/2/2005	56.54	--	8.31	48.23	--	<48	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	--	4.1	<0.5	
MW-5	9/15/2005	56.54	--	9.48	47.06	--	130	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	--	4.7	--	
MW-5	12/31/2005	56.54	--	8.98	47.56	--	<48	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.87	2.7	--	
MW-5	3/11/2006	56.54	--	8.18	48.36	--	<48	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.87	1.3	--	
MW-5	6/13/2006	56.54	--	7.89	48.65	--	<48	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.51	<0.51	--	
MW-5	8/10/2006	56.54	--	8.90	47.64	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	12/5/2006	56.54	--	8.82	47.72	--	100	64 J	90	154	<1.0	0.071 J	<1.0	<3.0	<1.0	0.050 BJ	12 B	--	
MW-5	1/24/2007	56.54	--	8.13	48.41	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	5/8/2007	56.54	--	8.19	48.35	--	58	<130	--	65	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	18	--	
MW-5	6/4/2007	56.54	--	8.59	47.95	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	9/5/2007	56.54	--	9.07	47.47	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	12/19/2007	56.54	--	9.24	47.30	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	3/6/2008	56.54	--	8.22	48.32	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	6/16/2008	56.54	--	7.04	49.50	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	9/11/2008	56.54	--	7.48	49.06	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	11/20/2008	56.54	--	7.45	49.09	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	3/4/2009	56.54	--	6.92	49.62	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	6/4/2009	56.54	--	7.30	49.24	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	12/3/2009	56.54	--	8.38	48.16	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	3/30/2010	56.54	--	7.65	48.89	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	6/18/2010	56.54	--	8.07	48.47	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	9/2/2010	56.54	--	9.64	46.90	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	12/7/2010	56.54	--	9.56	46.98	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	3/7/2011	56.54	--	7.10	49.44	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	6/9/2011	56.54	--	6.41	50.13	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	9/16/2011	56.54	--	8.40	48.14	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	12/13/2011	56.54	--	9.00	47.54	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	12/19/2011	56.54	--	8.90	47.64	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	3/15/2012	56.54	--	8.80	47.74	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	6/13/2012	56.54	--	7.15	49.39	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	9/10/2012	56.54	--	8.76	47.78	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	12/10/2012	56.54	--	7.82	48.72	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	3/11/2013	56.54	--	6.98	49.56	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	6/12/2013	56.54	--	7.22	49.32	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	9/18/2013	56.54	--	8.60	47.94	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	12/11/2013	56.54	--	8.10	48.44	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	3/12/2014	56.54	--	8.86	47.68	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	9/27/2014	56.54	--	8.63	47.91	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	8/18/2020	56.54	--	9.03	47.51	--	92.8 BJ	121 J	<83.3	162.65	<0.0941	<0.278	<0.137	<0.174	--	--	9.29	--	
MW-5	9/28/2021	56.53	--	10.25	46.28	--	539	305	<250	430	<1.00	<1.00	0.593 J	1.36 J	<1.00	--	<6.00	--	
MW-6	1/29/1992	--	--	--	--	--	ND	ND	ND	--	39	3	2	8	--	--	--	--	
MW-6	9/25/1992	57.07	--	--	--	--	ND	ND	ND	--	5.5	ND	ND	ND	--	--	--	--	
MW-6	2/24/1993	57.07	--	9.33	47.74	--	ND	360	ND	360	8.6	ND	ND	1	--	--	--	--	
MW-6	5/17/1993	57.07	--	9.03	48.04	--	ND	930	ND	930	19	ND	ND	1	--	--	--	--	
MW-6	8/2/1993	57.07	--	9.99	47.08	--	--	290	ND	290	--	--	--	--	--	--	--	--	
MW-6	8/24/1993	57.07	--	--	--	--	ND	--	--	--	5	ND	ND	ND	--	--	--	--	
MW-6	11/3/1993	57.07	--	10.35	46.72	--	ND	ND	ND	--	ND	ND	ND	ND	--	--	--	--	
MW-6	2/15/1994	57.07	--	10.14	46.93	--	ND	ND	ND	--	ND	ND	ND	ND	--	--	--	--	
MW-6	5/20/1994	57.07	--	9.79	47.28	--	ND	270	ND	270	7.7	ND	ND	ND	--	--	--	--	

Table 2. Historical Groundwater Gauging Data and Select Analytical Results

Chevron Service Station No. 97502

640 Metcalf Street, Sedro-Woolley, Washington

Analytical results are presented in micrograms per liter (µg/L)

Well	Date	TOC	DTP	DTW	GWE	NAPL	GRO	DRO	HO	DRO+HO	Benzene	Toluene	Ethylbenzene	Total		Dissolved			Comments
														Xylenes	MTBE	Lead	Total Lead	EDB	
MTCA Method A CULs							800/1,000	500	500	500	5	1,000	700	1,000	20	15	15	0.01	
MW-6	8/23/1994	57.07	--	10.49	46.58	--	ND	ND	ND	--	ND	ND	ND	ND	--	--	--	--	
MW-6	11/16/1994	57.07	--	10.47	46.60	--	ND	440	ND	440	ND	ND	ND	ND	--	--	--	--	
MW-6	2/10/1995	57.07	--	9.84	47.23	--	ND	240	240	480	ND	ND	ND	ND	--	--	ND	--	
MW-6	5/12/1995	57.07	--	9.64	47.43	--	ND	270	ND	270	ND	ND	ND	ND	--	--	ND	--	
MW-6	8/11/1995	57.07	--	10.13	46.94	--	ND	ND	ND	--	ND	ND	ND	ND	--	--	ND	--	
MW-6	11/2/1995	57.07	--	10.27	46.80	--	ND	390	ND	390	ND	ND	ND	ND	--	--	ND	--	
MW-6	1/31/1996	57.07	--	8.48	48.59	--	59	270	ND	270	ND	ND	ND	ND	--	--	--	--	
MW-6	5/9/1996	57.07	--	8.78	48.29	--	ND	494	ND	494	0.587	ND	ND	ND	--	--	--	--	
MW-6	2/3/1997	57.07	--	7.75	49.32	--	ND	280	1,100	1380	ND	ND	ND	ND	--	--	--	--	
MW-6	8/5/1997	57.07	--	9.00	48.07	--	54.6	ND	ND	--	ND	ND	ND	ND	--	--	--	--	
MW-6	2/11/1998	57.07	--	9.48	47.59	--	ND	269	ND	269	0.917	ND	ND	ND	--	--	--	--	
MW-6	8/27/1998	57.07	--	9.81	47.26	--	ND	ND	ND	--	ND	ND	ND	ND	ND	--	ND	--	
MW-6	1/19/1999	57.07	--	8.28	48.79	--	ND	287	ND	287	0.835	ND	ND	ND	--	--	--	--	
MW-6	8/30/1999	57.07	--	9.40	47.67	--	ND	ND	ND	--	ND	ND	ND	ND	--	--	--	--	
MW-6	3/13/2000	57.07	--	8.53	48.54	--	ND	317	ND	317	ND	ND	ND	ND	--	--	--	--	
MW-6	9/19/2000	57.07	--	9.52	47.55	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	3/20/2001	57.07	--	9.17	47.90	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	8/21/2001	57.07	--	9.78	47.29	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	3/11/2002	57.07	--	8.09	48.98	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	7/3/2002	57.07	--	8.36	48.71	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	9/13/2002	57.07	--	9.49	47.58	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	12/16/2002	57.07	--	10.02	47.05	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	3/6/2003	57.07	--	9.23	47.84	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	6/4/2003	57.07	--	8.78	48.29	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	9/11/2003	57.07	--	10.33	46.74	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	12/17/2003	57.07	--	8.40	48.67	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	3/17/2004	57.07	--	7.51	49.56	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	6/11/2004	57.07	--	7.59	49.48	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	9/21/2004	57.07	--	7.43	49.64	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	12/21/2004	57.07	--	7.22	49.85	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	7/2/2005	57.07	--	8.30	48.77	--	<48	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	--	15.6	<0.5	
MW-6	9/15/2005	57.07	--	9.22	47.85	--	<48	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	--	28.9	--	
MW-6	12/31/2005	57.07	--	8.75	48.32	--	<48	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.87	4.1	--	
MW-6	3/11/2006	57.07	--	8.22	48.85	--	<48	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.87	<0.87	--	
MW-6	6/13/2006	57.07	--	7.98	49.09	--	<48	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.51	<0.51	--	
MW-6	8/10/2006	57.07	--	8.82	48.25	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	12/5/2006	57.07	--	8.53	48.54	--	<50	49 J	110 J	159	<1.0	<1.0	<1.0	<3.0	<1.0	0.050 BJ	45 B	--	
MW-6	1/24/2007	57.07	--	7.88	49.19	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	5/8/2007	57.07	--	8.04	49.03	--	<50	<130	--	65	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	18	--	
MW-6	6/4/2007	57.07	--	8.78	48.29	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	9/5/2007	57.07	12.57	9.85	47.22	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	12/19/2007	57.07	--	9.21	47.86	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	3/6/2008	57.07	--	8.34	48.73	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	6/16/2008	57.07	--	7.72	49.35	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	9/11/2008	57.07	--	7.98	49.09	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	11/20/2008	57.07	--	7.90	49.17	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	3/4/2009	57.07	--	7.68	49.39	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	6/4/2009	57.07	--	8.06	49.01	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	12/3/2009	57.07	--	8.29	48.78	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	3/30/2010	57.07	--	8.26	48.81	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	6/18/2010	57.07	--	8.23	48.84	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	9/2/2010	57.07	--	9.30	47.77	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	12/7/2010	57.07	--	9.10	47.97	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	3/7/2011	57.07	--	7.52	49.55	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	6/9/2011	57.07	--	7.27	49.80	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	9/16/2011	57.07	--	8.52	48.55	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	12/13/2011	57.07	--	8.60	48.47	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	12/19/2011	57.07	--	8.52	48.55	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	3/15/2012	57.07	--	8.50	48.57	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	6/13/2012	57.07	--	7.40	49.67	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	9/10/2012	57.07	--	8.60	48.47	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	12/10/2012	57.07	--	7.61	49.46	--	--	--	--	--	--	--	--	--	--	--	--	--	

Table 2. Historical Groundwater Gauging Data and Select Analytical Results
 Chevron Service Station No. 97502
 640 Metcalf Street, Sedro-Woolley, Washington
 Analytical results are presented in micrograms per liter (µg/L)

Well	Date	TOC	DTP	DTW	GWE	NAPL	GRO	DRO	HO	DRO+HO	Benzene	Toluene	Ethylbenzene	Total		Dissolved			Comments	
														Xylenes	MTBE	Lead	Total Lead	EDB		
MTCA Method A CULs							800/1,000	500	500	500	5	1,000	700	1,000	20	15	15	0.01		
MW-6	3/11/2013	57.07	--	7.07	50.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	6/12/2013	57.07	--	6.83	50.24	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	9/18/2013	57.07	--	8.44	48.63	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	12/11/2013	57.07	--	7.81	49.26	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	3/12/2014	57.07	--	12.06	45.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	9/27/2014	57.07	--	8.48	48.59	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	8/18/2020	57.07	--	8.78	48.29	--	44.7 BJ	75.6 J	<83.3	117.25	<0.0941	<0.278	<0.137	<0.174	--	--	--	<2.95	--	
MW-6	9/27/2021	57.02	--	10.3	46.72	--	<100	<200	<250	225	<1.00	<1.00	<1.00	<3.00	<1.00	--	--	<6.00	--	
MW-7	1/29/1992	--	--	--	--	--	30,000	ND	ND	--	3,400	870	2,900	4,500	--	--	--	--	--	
MW-7	9/25/1992	58.98	--	--	--	--	2,770	ND	ND	--	863	81	509	168	--	--	--	--	--	
MW-7	2/24/1993	58.98	9.84	9.99	49.11	0.15	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-7	5/17/1993	58.98	9.75	9.90	49.20	0.15	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-7	8/2/1993	58.98	--	9.99	48.99	--	--	13,800	ND	13,800	--	--	--	--	--	--	--	--	--	
MW-7	8/24/1993	58.98	--	--	--	--	88,000	--	--	--	1,100	620	2,200	13,000	--	--	--	--	--	
MW-7	11/3/1993	58.98	--	11.01	47.97	--	100,000	59,000	ND	59,000	2,500	898	6,300	6,470	--	--	--	--	--	
MW-7	2/15/1994	58.98	--	10.85	48.13	--	31,000	1,340	ND	1,340	1,210	751	2,910	3,960	--	--	--	--	--	
MW-7	5/20/1994	58.98	--	10.34	48.64	--	47,000	4,950	ND	4,950	1,200	700	2,000	4,200	--	--	--	--	--	
MW-7	8/23/1994	58.98	--	11.13	47.85	--	25,400	11,200	800	12,000	1,070	844	2,200	4,130	--	--	--	--	--	
MW-7	11/16/1994	58.98	--	11.70	47.28	--	56,000	52,700	3,150	55,850	380	917	2,500	8,100	--	--	--	--	--	
MW-7	2/10/1995	58.98	--	10.62	48.36	--	93,000	69,000	ND	69,000	1,200	3,700	1,300	8,100	--	--	24	--	--	
MW-7	5/12/1995	58.98	10.14	10.14	48.84	Sheen	37,000	19,000	2,800	21,800	1,300	2,800	1,100	6,400	--	--	8.2	--	--	
MW-7	8/11/1995	58.98	10.79	10.79	48.19	Sheen	61,000	1,600	ND	1,600	440	2,000	1,300	6,100	--	--	5.8	--	--	
MW-7	11/2/1995	58.98	11.12	11.12	47.86	Sheen	94,000	57,000	ND	57,000	360	1,300	1,000	5,500	--	--	5.5	--	--	
MW-7	1/31/1996	58.98	--	9.20	49.78	--	27,000	3,700	ND	3,700	250	1,100	650	3,800	--	--	--	--	--	
MW-7	5/9/1996	58.98	9.40	9.40	49.58	Sheen	163,000	11,600	ND	11,600	638	2,390	1,850	10,600	--	--	--	--	--	
MW-7	2/3/1997	58.98	--	8.85	88.76	--	10,600	961	ND	961	11.1	10.6	32.3	185	--	--	--	--	--	
MW-7	8/5/1997	58.98	9.56	9.56	49.42	Sheen	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-7	2/11/1998	58.98	9.52	9.52	49.46	Sheen	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-7	8/27/1998	58.98	10.29	10.30	48.69	0.01	62,000	2,600	ND	2,600	1,600	7,440	1,340	9,210	--	--	24	--	--	
MW-7	1/19/1999	58.98	--	9.44	49.54	--	9,190	1,480	ND	1,480	59.6	2,070	251	935	--	--	--	--	--	
MW-7	8/30/1999	58.98	10.07	10.07	48.91	Sheen	26,900	5,580	ND	5,580	100	1,040	413	2,640	--	--	--	--	--	
MW-7	3/13/2000	58.98	9.30	9.30	49.68	Sheen	49,600	4,330	ND	4,330	795	4,500	1,080	7,190	--	--	--	--	--	
MW-7	9/19/2000	58.98	10.14	10.28	48.81	0.14	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-7	3/20/2001	58.98	9.84	9.98	49.04	0.05	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-7	8/21/2001	58.98	10.31	10.36	48.66	0.05	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-7	3/11/2002	58.98	--	9.23	49.75	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-7	7/3/2002	--	--	11.68	--	--	37,000	--	--	--	640	2,500	550	3,700	<6.0	--	--	--	--	
MW-7	7/26/2002	--	--	10.81	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-7	8/17/2002	--	--	10.93	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-7	9/13/2002	--	12.33	12.36	--	0.03	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-7	10/15/2002	--	--	11.97	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-7	11/8/2002	--	--	12.41	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-7	12/16/2002	--	12.75	12.77	--	0.02	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-7	1/11/2003	--	10.77	10.81	--	0.04	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-7	2/14/2003	--	12.12	12.15	--	0.03	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-7	3/6/2003	--	11.92	11.94	--	0.02	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-7	4/22/2003	--	12.01	12.04	--	0.03	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-7	5/21/2003	--	12.01	12.04	--	0.03	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-7	6/4/2003	--	--	11.84	--	--	96,000	--	--	--	580	4,100	1,500	10,000	<20	--	--	--	--	
MW-7	7/17/2003	--	12.87	12.90	--	0.03	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-7	8/12/2003	--	12.04	12.06	--	0.02	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-7	9/11/2003	--	12.95	13.01	--	0.06	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-7	10/20/2003	--	12.78	12.82	--	0.04	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-7	12/17/2003	--	--	11.32	--	--	53,000	--	--	--	80	820	530	4,700	11	--	--	--	--	
MW-7	3/17/2004	--	10.88	10.90	--	0.02	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-7	5/22/2004	--	--	11.39	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-7	6/11/2004	--	--	10.98	--	--	1,600	--	--	--	<1.0	1.3	8.2	57	<2.5	--	--	--	--	
MW-7	7/22/2004	--	11.42	11.44	--	0.02	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-7	9/1/2004	--	11.02	11.04	--	0.02	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-7	9/21/2004	--	--	10.79	--	--	10,000	--	--	--	<5.0	28	66	500	<5.0	--	--	--	--	
MW-7	12/21/2004	--	--	10.31	--	--	25,000	--	--	--	<5.0	180	270	2,100	<5.0	--	--	--	--	

Table 2. Historical Groundwater Gauging Data and Select Analytical Results
 Chevron Service Station No. 97502
 640 Metcalf Street, Sedro-Woolley, Washington
 Analytical results are presented in micrograms per liter (µg/L)

Well	Date	TOC	DTP	DTW	GWE	NAPL	MTCA Method A CULs							Total		Dissolved		Comments	
							GRO	DRO	HO	DRO+HO	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Lead	Total Lead		EDB
							800/1,000	500	500	500	5	1,000	700	1,000	20	15	15	0.01	
MW-7	7/2/2005	58.98	--	11.01	47.97	--	520	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	--	786	<0.5	
MW-7	9/15/2005	58.98	--	11.84	47.14	--	7,400	--	--	--	43	1,200	130	740	<1	--	203	--	
MW-7	12/31/2005	58.98	--	11.61	47.37	--	20,000	--	--	--	45	1,900	470	2,600	<3	12.8	34.8	--	
MW-7	3/11/2006	58.98	--	10.99	47.99	--	2,900	--	--	--	<0.5	10	16	140	<0.5	2.4	32.4	--	
MW-7	6/13/2006	58.98	--	10.81	48.17	--	160,000	--	--	--	8	1,100	640	4,800	<3	15.5	159	--	
MW-7	8/10/2006	58.98	11.77	11.80	47.20	0.03	--	--	--	--	--	--	--	--	--	--	--	--	
MW-7	12/5/2006	58.98	--	11.57	47.41	--	45,000	210,000	4,300	214,300	3.1	1,300	950	7,100	<1.0	92 B	920 B	--	
MW-7	1/24/2007	58.98	10.50	10.62	48.46	0.12	--	--	--	--	--	--	--	--	--	--	--	--	
MW-7	5/8/2007	58.98	10.81	10.88	48.16	0.07	--	--	--	--	--	--	--	--	--	--	--	--	
MW-7	6/4/2007	58.98	--	11.56	47.42	--	9,200	2,200	<190	2,295	14	360	67	520	<0.5	--	26.2	<0.5	
MW-7	9/5/2007	58.98	12.57	12.69	46.39	0.12	--	--	--	--	--	--	--	--	--	--	--	--	
MW-7	12/19/2007	58.98	--	12.22	46.76	--	15,000	--	--	--	<1	210	250	1,500	<1	--	52.5	<1	In analyzing DRO w/ silica gel, the observed sample pattern includes #2 fuel/diesel and an additional pattern that elutes earlier in the DRO range.
MW-7	3/6/2008	58.98	11.00	11.03	47.97	0.03	--	--	--	--	--	--	--	--	--	--	--	--	
MW-7	6/16/2008	58.98	10.22	10.25	48.75	0.03	--	--	--	--	--	--	--	--	--	--	--	--	
MW-7	9/11/2008	58.98	10.45	10.47	48.53	0.02	--	--	--	--	--	--	--	--	--	--	--	--	
MW-7	11/20/2008	58.98	10.46	10.47	48.52	0.01	56,000	--	--	--	<13	71	590	4,300	<13	--	--	<13	In analyzing DRO w/ silica gel, the observed sample pattern is not typical of #2 fuel/diesel, eluting in the DRO range earlier than #2 fuel.
MW-7	3/4/2009	58.98	--	9.67	49.31	--	2,400	--	--	--	<0.5	<0.5	4	65	<0.5	--	--	<0.5	In analyzing DRO w/ silica gel, the observed sample pattern includes #2 fuel/diesel and an additional pattern that elutes earlier in the DRO range.
MW-7	6/4/2009	58.98	--	10.04	48.94	--	2,800	--	--	--	<0.5	<0.5	0.9	18	<0.5	--	--	<0.5	
MW-7	9/22/2009	58.98	--	12.08	46.90	Sheen	--	--	--	--	--	--	--	--	--	--	--	--	
MW-7	9/23/2009	58.98	--	13.02	45.96	--	370,000	530,000	110,000 J	640,000	--	--	--	--	--	--	--	--	
MW-7	9/24/2009	58.98	--	12.69	46.29	--	160,000	48,000	27,000 J	75,000	--	--	--	--	--	--	--	--	
MW-7	10/1/2009	58.98	--	12.63	46.35	--	22,000	4,800	27,000	31,800	--	--	--	--	--	--	--	--	
MW-7	10/8/2009	58.98	--	12.81	46.17	--	16,000	590	440 J	1,030	--	--	--	--	--	--	--	--	
MW-7	10/15/2009	58.98	--	12.95	46.03	--	14,000	790	430	1,220	--	--	--	--	--	--	--	--	
MW-7	10/22/2009	58.98	--	12.86	46.12	--	11,000	430	95 J	525	--	--	--	--	--	--	--	--	
MW-7	11/18/2009	58.98	--	12.12	46.86	--	24,000	1,400	1,600 J	3,000	--	--	--	--	--	--	--	--	
MW-7	12/3/2009	58.98	--	11.27	47.71	--	37,000	--	--	--	<10	560	770	4,800	<10	--	--	<10	In analyzing DRO w/ silica gel, the observed sample pattern includes #2 fuel/diesel and an additional pattern that elutes earlier in the DRO range.
MW-7	12/16/2009	58.98	--	--	--	--	22,000	2,000	970 J	2,970	--	--	--	--	--	--	--	--	

Table 2. Historical Groundwater Gauging Data and Select Analytical Results

Chevron Service Station No. 97502

640 Metcalf Street, Sedro-Woolley, Washington

Analytical results are presented in micrograms per liter (µg/L)

Well	Date	TOC	DTP	DTW	GWE	NAPL	MTCA Method A CULs					Benzene	Toluene	Ethylbenzene	Total Xylenes	Dissolved			EDB	Comments
							GRO	DRO	HO	DRO+HO	MTBE					Lead	Total Lead			
							800/1,000	500	500	500	5	1,000	700	1,000	20	15	15	0.01		
MW-7	1/27/2010	58.98	--	11.24	47.74	--	33,000	--	--	--	--	--	--	--	--	--	--	--	--	In analyzing DRO w/ silica gel, the observed sample pattern includes #2 fuel/diesel and an additional pattern that elutes earlier in the DRO range.
MW-7	2/12/2010	58.98	--	11.30	47.68	--	36,000	--	--	--	--	--	--	--	--	--	--	--	--	In analyzing DRO w/ silica gel, the observed sample pattern is not typical of #2 fuel/diesel, eluting in the DRO range earlier than #2 fuel.
MW-7	3/30/2010	58.98	--	10.85	48.13	--	32,000	--	--	--	--	--	--	--	--	--	--	--	--	In analyzing DRO w/ silica gel, the observed sample pattern includes #2 fuel/diesel and an additional pattern that elutes earlier in the DRO range.
MW-7	6/18/2010	58.98	--	10.71	48.27	--	2,500	--	--	--	<0.5	2	2	30	--	--	--	--	--	In analyzing DRO w/ silica gel, the observed sample pattern includes #2 fuel/diesel and an additional pattern that elutes later in the DRO range.
MW-7	9/2/2010	58.98	--	12.21	46.77	--	22,000	3,500	370	3870	2	480	720	4,200	--	--	--	--	--	
MW-7	12/7/2010	58.98	--	12.85	46.13	--	30,000	460	--	460	<3	380	800	4,500	--	--	--	--	--	
MW-7	3/7/2011	58.98	--	9.71	49.27	--	<50	--	--	--	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	
MW-7	6/9/2011	58.98	--	9.28	49.70	--	<50	--	--	--	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	
MW-7	9/16/2011	58.98	--	10.90	48.08	--	<50	--	--	--	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	
MW-7	12/13/2011	58.98	--	11.40	47.58	--	2,100	--	--	--	0.9	91	82	440	--	--	--	--	--	
MW-7	12/19/2011	58.98	--	11.33	47.65	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-7	3/15/2012	58.98	--	9.80	49.18	--	<50	--	--	--	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	
MW-7	6/13/2012	58.98	--	9.60	49.38	--	230	--	--	--	<0.5	<0.5	0.8	<0.5	--	--	--	--	--	
MW-7	9/10/2012	58.98	--	11.20	47.78	--	240	--	--	--	<0.5	4	5	29	--	--	--	--	--	In analyzing HO w/ silica gel, the observed sample pattern includes #2 fuel/diesel, eluting in the DRO range later than #2 fuel.
MW-7	12/10/2012	58.98	--	10.21	48.77	--	<50	--	--	--	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	
MW-7	3/11/2013	58.98	--	9.41	49.57	--	<50	--	--	--	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	
MW-7	6/12/2013	58.98	--	9.85	49.13	--	<50	82	<68	116	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	
MW-7	9/18/2013	58.98	--	11.16	47.82	--	1,300	190	<67	223.5	0.8	150	41	210	--	--	--	--	--	
MW-7	12/11/2013	58.98	--	10.67	48.31	--	<50	360	190	550	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	
MW-7	3/12/2014	58.98	--	9.18	49.80	--	<50	--	--	--	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	
MW-7	9/27/2014	58.98	--	11.23	47.75	--	<50	--	--	--	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	
MW-7	8/17/2020	58.98	--	11.45	47.53	--	2,080	549	143 J	692	0.561 J	23.7	101	488	--	--	--	<2.95	--	
MW-7	9/28/2021	58.93	--	12.73	46.20	--	8,990	565	<250	690	0.124 J	14.6	359 E	1,390 E	<1.00	--	--	<6.00	--	
MW-8	1/29/1992	--	--	--	--	--	37,000	2,000	ND	2,000	4,600	320	8,900	1,600	--	--	--	--	--	
MW-8	9/25/1992	56.56	--	--	--	--	24,000 [25,000]	5,350	ND	5,350	6,100 [6,400]	378/376	8,000 [8,200]	1,600 [1,700]	--	--	--	--	--	
MW-8	2/24/1993	56.56	--	9.90	46.66	--	28,000	590	ND	590	520	200	8,300	950	--	--	--	--	--	
MW-8	5/17/1993	56.56	--	9.63	46.93	--	34,000	540	ND	540	2,000	180	11,000	770	--	--	--	--	--	
MW-8	8/2/1993	56.56	--	10.19	46.37	--	--	970	ND	970	--	--	--	--	--	--	--	--	--	
MW-8	8/24/1993	56.56	--	--	--	--	68,000	--	--	--	1,050	220	16,000	1,660	--	--	--	--	--	

Table 2. Historical Groundwater Gauging Data and Select Analytical Results

Chevron Service Station No. 97502

640 Metcalf Street, Sedro-Woolley, Washington

Analytical results are presented in micrograms per liter (µg/L)

Well	Date	TOC	DTP	DTW	GWE	NAPL	Total					Dissolved			Comments				
							GRO	DRO	HO	DRO+HO	Benzene	Toluene	Ethylbenzene	Xylenes		MTBE	Lead	Total Lead	EDB
MTCA Method A CULs							800/1,000	500	500	500	5	1,000	700	1,000	20	15	15	0.01	
MW-8	11/3/1993	56.56	--	11.28	45.28	--	2,100	1,340	ND	1,340	18.9	ND	ND	200	--	--	--	--	
MW-8	2/15/1994	56.56	--	11.15	45.41	--	2,860	1,630	ND	1,630	942	140	377	286	--	--	--	--	
MW-8	5/20/1994	56.56	--	10.56	46.00	--	14,000	910	ND	910	740	130	3,600	410	--	--	--	--	
MW-8	8/23/1994	56.56	--	11.41	45.15	--	7,990	1,830	ND	1,830	2,060	298	1,160	1,160	--	--	--	--	
MW-8	11/16/1994	56.56	--	11.70	44.86	--	17,600	2,160	ND	2,160	1,130	207	2,700	892	--	--	--	--	
MW-8	2/10/1995	56.56	--	10.87	45.69	--	10,000	1,600	500	2100	1,100	1,300	180	820	--	--	17	--	
MW-8	5/12/1995	56.56	--	10.37	46.19	--	19,000	870	ND	870	1,200	5,700	240	1,000	--	--	ND	--	
MW-8	8/11/1995	56.56	--	10.98	45.58	--	9,000	990	ND	990	470	860	320	1,300	--	--	ND	--	
MW-8	11/2/1995	56.56	--	11.35	45.21	--	11,000	1,700	1,100	2800	820	710	300	1,200	--	--	ND	--	
MW-8	1/31/1996	56.56	--	9.03	47.53	--	15,000	510	ND	510	370	4,600	170	710	--	--	--	--	
MW-8	5/9/1996	56.56	--	9.37	47.19	--	17,000	300	ND	300	421	6,200	198	807	--	--	--	--	
MW-8	2/3/1997	56.56	--	8.27	48.29	--	11,600	360	ND	360	258	3,750	225	910	--	--	--	--	
MW-8	8/5/1997	56.56	--	9.46	47.10	--	9,160	ND	ND	--	ND	1,810	167	615	--	--	--	--	
MW-8	2/11/1998	56.56	--	9.97	46.59	--	6,310	ND	ND	--	476	680	158	585	--	--	--	--	
MW-8	8/27/1998	56.56	--	10.50	46.06	--	2,810	ND	ND	--	ND	425	113	448	ND	--	--	--	
MW-8	1/19/1999	56.56	--	9.12	47.44	--	ND	271	ND	271	ND	249	27.4	96.1	--	--	--	--	
MW-8	8/30/1999	56.56	--	10.01	46.55	--	1,180	623	ND	623	15.8	17.8	57.9	198	--	--	--	--	
MW-8	3/13/2000	56.56	--	9.19	47.37	--	1,990	318	ND	318	11.5	168	73.4	255	--	--	--	--	
MW-8	9/19/2000	56.56	--	10.21	46.35	--	1,540	268	ND	268	ND	ND	66.3	239	ND	--	--	--	
MW-8	3/20/2001	56.56	--	10.10	46.46	--	ND	--	--	--	ND	ND	ND	117	ND	--	--	--	
MW-8	8/21/2001	56.56	--	12.31	44.25	--	5,230	309	<500	559	33.8	6.81	58.9	196	27.3	--	--	--	
MW-8	3/11/2002	56.56	--	9.14	47.42	--	1,100	--	--	--	6.4	41	73	250	<2.5	--	--	--	
MW-8	7/3/2002	56.56	--	9.60	46.96	--	1,100	--	--	--	<2.0	<5.0	69	230	<2.5	--	--	--	
MW-8	9/13/2002	56.56	--	9.99	46.57	--	920	--	--	--	<20	2.1	34	150	67	--	--	--	
MW-8	12/16/2002	56.56	--	11.00	45.56	--	1,300	--	--	--	<50	4.8	30	69	<20	--	--	--	
MW-8	3/6/2003	56.56	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Well inaccessible
MW-8	6/4/2003	56.56	--	9.85	46.71	--	680	--	--	--	<50	1.9	31	110	<50	--	--	--	
MW-8	9/11/2003	56.56	--	11.08	45.48	--	2,400	--	--	--	31	14	110	170	<5.0	--	--	--	
MW-8	3/6/2003	56.56	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Well inaccessible
MW-8	3/17/2004	56.56	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Well inaccessible
MW-8	6/11/2004	56.56	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Well inaccessible
MW-8	9/21/2004	56.56	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Well inaccessible
MW-8	12/21/2004	56.56	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Well inaccessible
MW-8	8/10/2006	56.56	--	9.30	47.26	--	580	210	<110	265	1	<0.5	14	29	<0.5	<0.047	8.5	--	
MW-8	12/5/2006	56.56	--	9.26	47.30	--	850	230 J	170 J	400	0.64 J	0.49 J	24	62.9	<1.0	0.51 BJ	15 B	--	
MW-8	1/24/2007	56.56	--	8.41	48.15	--	690	180	<270	315	<1.0	<1.0	30	98.1	<1.0	<2.0	19	--	
MW-8	5/8/2007	56.56	--	8.65	47.91	--	1,200	410	--	410	<2.0	28	37	155	<2.0	<2.0	13	--	
MW-8	6/4/2007	56.56	--	9.03	47.53	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-8	9/5/2007	56.56	--	9.70	46.86	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-8	12/19/2007	56.56	--	9.88	46.68	--	570	--	--	--	<0.5	0.7	3	4	<0.5	--	8	<0.5	In analyzing DRO w/ silica gel, the observed sample pattern includes #2 fuel/diesel and an additional pattern that elutes later in the DRO range.
MW-8	3/6/2008	56.56	--	8.48	48.08	--	260	--	--	--	<0.5	<0.5	8	17	--	--	--	--	
MW-8	6/16/2008	56.56	--	7.72	48.84	--	190	--	--	--	<1	<1	3	4	--	--	--	--	
MW-8	9/11/2008	56.56	--	8.10	48.46	--	510	--	--	--	<1	<1	16	25	--	--	--	--	
MW-8	11/20/2008	56.56	--	8.22	48.34	--	280	--	--	--	<0.5	<0.5	3	6	--	--	--	--	
MW-8	3/4/2009	56.56	--	7.39	49.17	--	180	--	--	--	<0.5	<0.5	4	8	--	--	--	--	
MW-8	6/4/2009	56.56	--	7.68	48.88	--	730	--	--	--	<3	<3	20	47	--	--	--	--	
MW-8	9/22/2009	56.56	--	9.69	46.87	--	550	880	1,300	2,180	--	--	--	--	--	--	--	--	
MW-8	10/1/2009	56.56	--	10.28	46.28	--	380	76 J	94 J	170	--	--	--	--	--	--	--	--	
MW-8	10/8/2009	56.56	--	10.51	46.05	--	620	89 J	<69	123.5	--	--	--	--	--	--	--	--	
MW-8	10/15/2009	56.56	--	10.65	45.91	--	420	340	310 J	650	--	--	--	--	--	--	--	--	
MW-8	10/22/2009	56.56	--	10.60	45.96	--	480	77 J	<67	110.5	--	--	--	--	--	--	--	--	
MW-8	11/18/2009	56.56	--	9.71	46.85	--	510	140	<70	175	--	--	--	--	--	--	--	--	
MW-8	12/3/2009	56.56	--	8.87	47.69	--	580	--	--	--	<1	<1	7	28	--	--	--	--	
MW-8	12/16/2009	56.56	--	--	--	--	420	240	<66	273	--	--	--	--	--	--	--	--	
MW-8	1/27/2010	56.56	--	8.90	47.66	--	790	--	--	--	--	--	--	--	--	--	--	--	
MW-8	2/12/2010	56.56	--	8.98	47.58	--	570	--	--	--	--	--	--	--	--	--	--	--	

Table 2. Historical Groundwater Gauging Data and Select Analytical Results

Chevron Service Station No. 97502

640 Metcalf Street, Sedro-Woolley, Washington

Analytical results are presented in micrograms per liter (µg/L)

Well	Date	TOC	DTP	DTW	GWE	NAPL	GRO	DRO	HO	DRO+HO	Benzene	Toluene	Ethylbenzene	Total		Dissolved			Comments	
														Xylenes	MTBE	Lead	Total Lead	EDB		
MTCA Method A CULs							800/1,000	500	500	500	5	1,000	700	1,000	20	15	15	0.01		
MW-8	3/30/2010	56.56	--	8.45	48.11	--	710	--	--	--	--	--	--	--	--	--	--	--	--	
MW-8	6/18/2010	56.56	--	8.32	48.24	--	1,000	--	--	--	--	--	--	--	--	--	--	--	--	
MW-8	9/2/2010	56.56	--	9.87	46.69	--	390 J	290	330	620	--	--	--	--	--	--	--	--	--	
MW-8	12/7/2010	56.56	--	9.81	46.75	--	610	--	--	--	--	--	--	--	--	--	--	--	--	
MW-8	3/7/2011	56.56	--	7.46	49.10	--	520	--	--	--	--	--	--	--	--	--	--	--	--	
MW-8	6/9/2011	56.56	--	6.95	49.61	--	280	--	--	--	--	--	--	--	--	--	--	--	--	
MW-8	9/16/2011	56.56	--	8.48	48.08	--	500	--	--	--	--	--	--	--	--	--	--	--	--	
MW-8	12/13/2011	56.56	--	9.10	47.46	--	460	--	--	--	--	--	--	--	--	--	--	--	--	
MW-8	12/19/2011	56.56	--	9.02	47.54	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-8	3/15/2012	56.56	--	9.70	46.86	--	<50	--	--	--	--	--	--	--	--	--	--	--	--	
MW-8	6/13/2012	56.56	--	7.35	49.21	--	330	--	--	--	--	--	--	--	--	--	--	--	--	In analyzing HO w/ silica gel, the observed sample pattern includes #2 fuel/diesel, eluting in the DRO range later than #2 fuel.
MW-8	9/10/2012	56.56	--	8.80	47.76	--	220	--	--	--	--	--	--	--	--	--	--	--	--	
MW-8	12/10/2012	56.56	--	8.05	48.51	--	630	--	--	--	--	--	--	--	--	--	--	--	--	
MW-8	3/11/2013	56.56	--	7.24	49.32	--	510	--	--	--	--	--	--	--	--	--	--	--	--	In analyzing HO w/ silica gel, the observed sample pattern includes #2 fuel/diesel and an additional pattern that elutes later in the DRO range.
MW-8	6/12/2013	56.56	--	7.43	49.13	--	610	200	360	560	--	--	--	--	--	--	--	--	--	
MW-8	9/18/2013	56.56	--	8.82	47.74	--	380	48	96	144	--	--	--	--	--	--	--	--	--	
MW-8	12/11/2013	56.56	--	8.36	48.20	--	500	100	190	290	--	--	--	--	--	--	--	--	--	
MW-8	3/12/2014	56.56	--	7.02	49.54	--	--	500	510	1010	--	--	--	--	--	--	--	--	--	In analyzing HO, the observed sample
MW-8	9/27/2014	56.56	--	8.86	47.70	--	--	16,000	--	16000	--	--	--	--	--	--	--	--	--	
MW-8	8/18/2020	56.56	--	9.02	47.54	--	6,210	123 J	<83.3	164.65	<0.0941	<0.278	1.64	1.16 J	--	--	--	<2.95	--	
MW-8	9/28/2021	56.52	--	10.38	46.14	--	3,600	305	<250	430	<1.00	<1.00	1.11	0.574 J	<1.00	--	--	<6.00	--	
MW-9	1/29/1992	--	--	--	--	--	ND	1,000	ND	1,000	1.0	1.0	ND	4.0	--	--	--	--	--	
MW-9	9/25/1992	57.79	--	--	--	--	370	1,970	ND	1,970	1.2	ND	1.0	2.0	--	--	--	--	--	
MW-9	2/24/1993	57.79	--	10.07	47.72	--	439	2,340	ND	2,340	27	ND	ND	1.0	--	--	--	--	--	
MW-9	5/17/1993	57.79	--	9.75	48.04	--	330	770	ND	770	5.9	1.0	ND	2.0	--	--	--	--	--	
MW-9	8/2/1993	57.79	--	10.20	47.59	--	--	1,560	ND	1,560	--	--	--	--	--	--	--	--	--	
MW-9	8/24/1993	57.79	--	--	--	--	5,590	--	--	--	4.0	14	12	409	--	--	--	--	--	
MW-9	11/3/1993	57.79	--	11.43	46.36	--	1,070	990	ND	990	1.9	1.0	ND	2.0	--	--	--	--	--	
MW-9	2/15/1994	57.79	--	11.27	46.52	--	853	750	ND	750	2.1	ND	ND	2.0	--	--	--	--	--	
MW-9	5/20/1994	57.79	--	10.75	47.04	--	740	1,610	ND	1,610	0.6	ND	ND	ND	--	--	--	--	--	
MW-9	8/23/1994	57.79	--	11.69	46.10	--	640	1,220	ND	1,220	0.7	ND	ND	ND	--	--	--	--	--	
MW-9	11/16/1994	57.79	--	10.88	46.91	--	ND	300	ND	300	ND	ND	ND	ND	--	--	--	--	--	
MW-9	2/10/1995	57.79	--	10.94	46.85	--	950	890	400	1290	ND	ND	1.5	6.0	--	--	--	ND	--	
MW-9	5/12/1995	57.79	--	10.49	47.30	--	910	740	ND	740	ND	ND	ND	ND	--	--	--	ND	--	
MW-9	8/11/1995	57.79	--	11.14	46.65	--	1,200	1,800	ND	1800	0.63	ND	ND	1.2	--	--	--	ND	--	
MW-9	11/2/1995	57.79	--	11.49	46.30	--	990	980	ND	980	0.68	ND	ND	ND	--	--	--	3.5	--	
MW-9	1/31/1996	57.79	--	8.98	48.81	--	740	710	ND	710	2.6	ND	ND	ND	--	--	--	--	--	
MW-9	5/9/1996	57.79	--	9.31	48.48	--	128	477	ND	477	ND	0.74	ND	ND	--	--	--	--	--	
MW-9	2/3/1997	57.79	--	7.70	50.09	--	190	355	ND	355	ND	ND	ND	ND	--	--	--	--	--	
MW-9	8/5/1997	57.79	--	9.85	47.94	--	236	447	ND	447	ND	ND	ND	ND	--	--	--	--	--	
MW-9	2/11/1998	57.79	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-9	8/27/1998	57.79	--	10.72	47.07	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-9	1/19/1999	57.79	--	8.87	48.92	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-9	8/30/1999	57.79	--	10.18	47.61	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-9	3/13/2000	57.79	--	9.13	48.66	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-9	9/19/2000	57.79	--	10.41	47.38	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-9	3/20/2001	57.79	--	10.07	47.72	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-9	8/21/2001	57.79	--	10.79	47.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	

Table 2. Historical Groundwater Gauging Data and Select Analytical Results
 Chevron Service Station No. 97502
 640 Metcalf Street, Sedro-Woolley, Washington
 Analytical results are presented in micrograms per liter (µg/L)

Well	Date	TOC	DTP	DTW	GWE	NAPL	Total							Dissolved			Comments		
							GRO	DRO	HO	DRO+HO	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Lead		Total Lead	EDB
MTCA Method A CULs							800/1,000	500	500	500	5	1,000	700	1,000	20	15	15	0.01	
MW-10	12/16/2002	--	--	10.41	--	--	1,800	--	--	--	<10	3.5	31	98	9.3	<8.90	--	--	
MW-10	3/6/2003	--	--	9.74	--	--	99	--	--	--	<1.0	<0.50	<0.50	<1.5	<2.5	--	--	--	
MW-10	6/4/2003	--	--	9.28	--	--	<50	--	--	--	2.4	<0.5	2.4	<1.5	<2.5	--	--	--	
MW-10	9/11/2003	--	--	11.18	--	--	12,000	--	--	--	71	380	430	1,500	<10	--	--	--	
MW-10	12/17/2003	--	--	9.15	--	--	<50/<50	--	--	--	<0.5/2.8	<0.5/1.4	<0.5/1.5	<1.5/1.8	<2.5/<2.5	--	--	--	
MW-10	6/11/2004	--	--	8.95	--	--	<50	--	--	--	2.5	<0.5	<0.5	<1.5	<2.5	--	--	--	
MW-10	9/21/2004	--	--	8.90	--	--	120	--	--	--	9.6	0.8	1.2	<1.5	<5.0	--	--	--	
MW-10	12/21/2004	--	--	8.61	--	--	780	--	--	--	27	19	13	25	<5.0	--	--	--	
MW-10	7/2/2005	56.21	--	8.98	47.23	--	1,100	--	--	--	8	6	10	190	<0.5	--	1.3	<0.5	
MW-10	9/15/2005	56.21	--	9.48	46.73	--	17,000	--	--	--	32	1,200	520	2,600	<1	--	<0.87	--	
MW-10	12/31/2005	56.21	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Well inaccessible
MW-10	3/11/2006	56.21	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Well inaccessible
MW-10	6/13/2006	56.21	--	8.98	47.23	--	2,800	--	--	--	4	68	92	360	<0.5	<0.51	1.3	--	
MW-10	8/10/2006	56.21	--	9.53	46.68	--	16,000	620	<100	670	6	330	390	1,600	<1	0.4	1	--	
MW-10	12/5/2006	56.21	--	10.03	46.18	--	22,000	1,400	530	1930	15	380	700	3,800	<10	0.57 BJ	2.6 B	--	
MW-10	1/24/2007	56.21	--	9.30	46.91	--	12,000	1,300	<260	1430	7.7	48	310	1,450	<5.0	<2.0	<2.0	--	
MW-10	5/8/2007	56.21	--	9.41	46.80	--	13,000	610	--	610	<10	370	350	1,790	<10	<2.0	<2.0	--	
MW-10	6/4/2007	56.21	--	9.24	46.97	--	15,000	--	<100	50	6	160	370	1,900	<1	--	1.2	<1	
MW-10	9/5/2007	56.21	--	10.50	45.71	--	13,000	--	--	--	3	210	340	1,400	<1	--	0.88	<1	
MW-10	12/19/2007	56.21	--	10.45	45.76	--	8,700	--	--	--	14	44	250	850	<0.5	--	1.9	<0.5	In analyzing DRO w/ silica gel, the observed sample pattern is not typical of #2 fuel/diesel.
MW-10	3/6/2008	56.21	--	9.08	47.13	--	2,100	--	--	--	7	29	61	210	<0.5	--	--	<0.5	
MW-10	6/16/2008	56.21	--	8.62	47.59	--	1,500	--	--	--	0.6	44	51	190	<0.5	--	--	<0.5	
MW-10	9/11/2008	56.21	--	8.77	47.44	--	7,000	--	--	--	2	140	170	1,000	<0.5	--	--	<0.5	
MW-10	11/20/2008	56.21	--	9.01	47.20	--	7,700	--	--	--	<3	83	190	1,300	<3	--	--	<3	
MW-10	3/4/2009	56.21	--	7.86	48.35	--	3,600	--	--	--	0.9	38	95	390	<0.5	--	--	<0.5	
MW-10	6/4/2009	56.21	--	8.10	48.11	--	5,000	--	--	--	2	73	170	440	<0.5	--	--	<0.5	
MW-10	9/22/2009	56.21	--	10.03	46.18	--	15,000	610	<81	650.5	--	--	--	--	--	--	--	--	
MW-10	9/24/2009	56.21	--	10.04	46.17	--	22,000	800	150 J	950	--	--	--	--	--	--	--	--	
MW-10	10/1/2009	56.21	--	10.44	45.77	--	14,000	460	<66	493	--	--	--	--	--	--	--	--	
MW-10	10/8/2009	56.21	--	10.64	45.57	--	13,000	330	<69	364.5	--	--	--	--	--	--	--	--	
MW-10	10/15/2009	56.21	--	10.80	45.41	--	17,000	560	<66	593	--	--	--	--	--	--	--	--	
MW-10	10/22/2009	56.21	--	10.82	45.39	--	12,000	420	<68	454	--	--	--	--	--	--	--	--	
MW-10	11/18/2009	56.21	--	10.14	46.07	--	11,000	36 J	<72	72	--	--	--	--	--	--	--	--	
MW-10	12/3/2009	56.21	--	9.28	46.93	--	5,600	--	--	--	2	33	200	480	<0.5	--	--	<0.5	
MW-10	12/16/2009	56.21	--	--	--	--	2,800	140	<69	174.5	--	--	--	--	--	--	--	--	
MW-10	1/27/2010	56.21	--	8.81	47.40	--	2,000	--	--	--	--	--	--	--	--	--	--	--	
MW-10	2/12/2010	56.21	--	8.83	47.38	--	1,800	--	--	--	--	--	--	--	--	--	--	--	
MW-10	3/30/2010	56.21	--	8.80	47.41	--	130	--	--	--	--	--	--	--	--	--	--	--	
MW-10	6/18/2010	56.21	--	8.55	47.66	--	120	--	--	--	<0.5	<0.5	4	2	--	--	--	--	
MW-10	9/2/2010	56.21	--	10.01	46.20	--	3,900	380	120	500	2	7	140	260	--	--	--	--	
MW-10	12/7/2010	56.21	--	10.07	46.14	--	7,600	--	--	--	3	70	240	700	--	--	--	--	
MW-10	3/7/2011	56.21	--	7.79	48.42	--	700	--	--	--	2	3	23	22	--	--	--	--	
MW-10	6/9/2011	56.21	--	7.30	48.91	--	3,600	--	--	--	3	40	130	370	--	--	--	--	
MW-10	9/16/2011	56.21	--	8.60	47.61	--	5,100	--	--	--	1	13	190	370	--	--	--	--	
MW-10	12/13/2011	56.21	--	9.08	47.13	--	560	--	--	--	0.6	1	11	10	--	--	--	--	
MW-10	12/19/2011	56.21	--	9.00	47.21	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-10	3/15/2012	56.21	--	7.80	48.41	--	77	--	--	--	<0.5	<0.5	1	<0.5	--	--	--	--	
MW-10	6/13/2012	56.21	--	7.45	48.76	--	620	--	--	--	0.8	6	38	15	--	--	--	--	
MW-10	9/10/2012	56.21	--	8.75	47.46	--	4,200	--	--	--	1	35	87	220	--	--	--	--	
MW-10	12/10/2012	56.21	--	8.12	48.09	--	1,700	--	--	--	0.6	19	31	210	--	--	--	--	
MW-10	3/11/2013	56.21	--	7.54	48.67	--	1,200	--	--	--	0.5	6	18	48	--	--	--	--	
MW-10	6/12/2013	56.21	--	7.55	48.66	--	1,800	59	<67	92.5	0.9	13	47	150	--	--	--	--	
MW-10	9/18/2013	56.21	--	8.93	47.28	--	4,000	200	<67	233.5	0.8	17	29	330	--	--	--	--	
MW-10	12/11/2013	56.21	--	8.56	47.65	--	3,100	76	<69	110.5	1	10	54	140	--	--	--	--	
MW-10	3/12/2014	56.21	--	12.79	43.42	--	1,700	--	--	--	<0.5	6	28	83	--	--	--	--	
MW-10	9/27/2014	56.21	--	8.97	47.24	--	2,300	--	--	--	<0.5	<0.5	0.7	0.6	--	--	--	--	
MW-10	8/17/2020	56.21	--	9.45	46.76	--	582	222	<83.3	305.3	0.152 J	2.41	28.5	19.1	--	--	<2.95	--	

Table 2. Historical Groundwater Gauging Data and Select Analytical Results
 Chevron Service Station No. 97502
 640 Metcalf Street, Sedro-Woolley, Washington
 Analytical results are presented in micrograms per liter (µg/L)

Well	Date	TOC	DTP	DTW	GWE	NAPL	MTCA Method A CULs					Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	Dissolved		EDB	Comments
							GRO	DRO	HO	DRO+HO	500						500	500		
MW-10	9/29/2021	56.17		10.33	45.84	--	4,150 [4150]	986 [1,000]	<250 [-<250]	1,111 [1,125]	0.230 J [0.230 J]	9.90 [9.78]	19.7 [19.4]	87 [85.6]	<1.00	--	<6.00 [-<6.00]			
MW-11	12/16/2002	--	--	11.68	--	--	22,000	--	--	--	170	980	740	3,000	70	<8.90	--	--		
MW-11	3/6/2003	--	--	10.34	--	--	19,000	--	--	--	150	70	680	2,300	<50	--	--	--		
MW-11	6/4/2003	--	--	9.83	--	--	16,000	--	--	--	88	590	480	2,100	<20	--	--	--		
MW-11	9/11/2003	--	--	10.26	--	--	63	--	--	--	<0.5	<0.5	<0.5	<1.5	<2.5	--	--	--		
MW-11	12/17/2003	--	--	9.61	--	--	5,300/83	--	--	--	46/1.4	67/0.8	220/3.9	770/9.4	21/<2.5	--	--	--		
MW-11	6/11/2004	--	--	9.12	--	--	4,700	--	--	--	35	19	190	520	<2.5	--	--	--		
MW-11	9/21/2004	--	--	9.42	--	--	3,800	--	--	--	28	28	140	540	<10	--	--	--		
MW-11	12/21/2004	--	--	8.46	--	--	1,400	--	--	--	19	7.6	65	93	<2.5	--	--	--		
MW-11	7/2/2005	56.32	--	9.32	47.00	--	1,100	--	--	--	7	3	29	110	<1	--	0.98	<1		
MW-11	9/15/2005	56.32	--	10.38	45.94	--	2,800	--	--	--	15	10	170	360	<0.5	--	<0.87	--		
MW-11	12/31/2005	56.32	--	10.31	46.01	--	8,700	--	--	--	29	140	310	1,000	<0.5	<0.87	<0.87	--		
MW-11	3/11/2006	56.32	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Well inaccessible	
MW-11	6/13/2006	56.32	--	11.68	44.64	--	3,500	--	--	--	26	15	170	350	<0.5	<0.51	<0.51	--		
MW-11	8/10/2006	56.32	--	10.20	46.12	--	3,700	150	<110	210	13	11	<0.5	330	<0.5	<0.047	0.5	--		
MW-11	12/5/2006	56.32	--	10.67	45.65	--	6,500	730	100 J	830	36	21	270	894	<10	0.085 BJ	0.49 BJ	--		
MW-11	1/24/2007	56.32	--	9.85	46.47	--	4,300	320	<300	470	28	14	180	557	<5.0	<2.0	<2.0	--		
MW-11	5/8/2007	56.32	--	10.07	46.25	--	420	<130	--	65	3.1	<2.0	21	12	<2.0	<2.0	<2.0	--		
MW-11	6/4/2007	56.32	--	9.85	46.47	--	950	<400	<500	450	5	2	53	82	<1	--	1	<1		
MW-11	9/5/2007	56.32	--	11.13	45.19	--	1,000	--	--	--	10	5	35	41	<2	--	0.45	<2		
MW-11	12/19/2007	56.32	--	10.85	45.47	--	1,300	--	--	--	12	12	46	82	<1	--	0.1	<1		
MW-11	3/6/2008	56.32	--	9.48	46.84	--	270	--	--	--	0.8	1	20	36	<0.5	--	--	<0.5		
MW-11	6/16/2008	56.32	--	8.43	47.89	--	<50	--	--	--	<0.5	<0.5	0.6	<0.5	<0.5	--	--	<0.5		
MW-11	9/11/2008	56.32	--	8.85	47.47	--	94	--	--	--	<0.5	<0.5	4	3	<0.5	--	--	<0.5		
MW-11	11/20/2008	56.32	--	9.82	46.50	--	740	--	--	--	<0.5	2	40	62	<0.5	--	--	<0.5		
MW-11	3/4/2009	56.32	--	7.89	48.43	--	710	--	--	--	0.9	5	37	58	<0.5	--	--	<0.5		
MW-11	6/4/2009	56.32	--	8.10	48.22	--	210	--	--	--	0.5	1	6	8	<0.5	--	--	<0.5		
MW-11	9/22/2009	56.32	--	11.05	45.27	--	2,500	110	<66	143	--	--	--	--	--	--	--	--		
MW-11	9/24/2009	56.32	--	11.17	45.15	--	1,900	130	<66	163	--	--	--	--	--	--	--	--		
MW-11	10/1/2009	56.32	--	11.31	45.01	--	2,900	74 J	<66	107	--	--	--	--	--	--	--	--		
MW-11	10/8/2009	56.32	--	11.42	44.90	--	2,100	63 J	<68	97	--	--	--	--	--	--	--	--		
MW-11	10/15/2009	56.32	--	11.57	44.75	--	3,200	150	<69	184.5	--	--	--	--	--	--	--	--		
MW-11	10/22/2009	56.32	--	11.46	44.86	--	2,900	100 J	<70	135	--	--	--	--	--	--	--	--		
MW-11	11/18/2009	56.32	--	10.64	45.68	--	3,100	140	<70	175	--	--	--	--	--	--	--	--		
MW-11	12/3/2009	56.32	--	9.77	46.55	--	2,300	--	--	--	3	8	130	320	<0.5	--	--	<0.5		
MW-11	12/16/2009	56.32	--	--	--	--	3,600	130	<70	165	--	--	--	--	--	--	--	--		
MW-11	1/27/2010	56.32	--	9.35	46.97	--	5,000	--	--	--	--	--	--	--	--	--	--	--		
MW-11	2/12/2010	56.32	--	9.46	46.86	--	3,800	--	--	--	--	--	--	--	--	--	--	--		
MW-11	3/30/2010	56.32	--	9.42	46.90	--	5,000	--	--	--	--	--	--	--	--	--	--	--		
MW-11	6/18/2010	56.32	--	8.72	47.60	--	670	--	--	--	2	2	16	66	--	--	--	--		
MW-11	9/2/2010	56.32	--	10.59	45.73	--	2,900	200	<69	234.5	3	8	130	330	--	--	--	--		
MW-11	12/7/2010	56.32	--	10.38	45.94	--	2,500	--	--	--	3	7	120	270	--	--	--	--		
MW-11	3/7/2011	56.32	--	7.91	48.41	--	1,300	--	--	--	0.9	3	61	65	--	--	--	--		
MW-11	6/9/2011	56.32	--	7.35	48.97	--	1,400	--	--	--	2	5	68	62	--	--	--	--		
MW-11	9/16/2011	56.32	--	8.70	47.62	--	850	--	--	--	2	3	39	22	--	--	--	--		
MW-11	12/13/2011	56.32	--	9.75	46.57	--	1,800	--	--	--	3	5	97	160	--	--	--	--		
MW-11	12/19/2011	56.32	--	9.62	46.70	--	--	--	--	--	--	--	--	--	--	--	--	--		
MW-11	3/15/2012	56.32	--	7.95	48.37	--	1,500	--	--	--	3	3	78	94	--	--	--	--		
MW-11	6/13/2012	56.32	--	7.55	48.77	--	2,200	--	--	--	7	7	160	180	--	--	--	--		
MW-11	9/10/2012	56.32	--	8.94	47.38	--	1,300	--	--	--	<5	<5	24	31	--	--	--	--		
MW-11	12/10/2012	56.32	--	8.40	47.92	--	1,700	--	--	--	6	6	63	120	--	--	--	--		
MW-11	3/11/2013	56.32	--	7.56	48.76	--	3,200	--	--	--	7	9	150	190	--	--	--	--		
MW-11	6/12/2013	56.32	--	7.68	48.64	--	3,600	98	<66	131	9	12	190	250	--	--	--	--		
MW-11	9/18/2013	56.32	--	9.53	46.79	--	4,000	210	<66	243	6	9	170	230	--	--	--	--		
MW-11	12/11/2013	56.32	--	9.04	47.28	--	2,700	100	<67	133.5	4	7	140	210	--	--	--	--		
MW-11	3/12/2014	56.32	--	12.88	43.44	--	5,100	--	--	--	7	14	260	340	--	--	--	--		
MW-11	9/27/2014	56.32	--	9.51	46.81	--	2,200	--	--	--	<0.5	<0.5	0.8	<0.5	--	--	--	--		
MW-11	8/17/2020	56.32	--	9.14	47.18	--	5,650	724	<83.3	765.65	3.76	<0.278	4.91	2.28 J	--	<2.95	--	--		
MW-11	9/29/2021	57.20		10.78	46.42	--	4,190	543	<250	668	3.03	1.78	67.9	4.36	<1.00	--	<6.00	--		
MW-12	8/10/2006	--	--	9.23	--	--	89,000	62,000	<21,000	72500	4	230	990	4,400	<3	4.3	164	--		

Table 2. Historical Groundwater Gauging Data and Select Analytical Results
 Chevron Service Station No. 97502
 640 Metcalf Street, Sedro-Woolley, Washington
 Analytical results are presented in micrograms per liter (µg/L)

Well	Date	TOC	DTP	DTW	GWE	NAPL	GRO				Benzene	Toluene	Ethylbenzene	Total Xylenes	Dissolved			Comments	
							800/1,000	500	HO	DRO+HO					MTBE	Lead	Total Lead		EDB
MTCA Method A CULs							800/1,000	500	500	500	5	1,000	700	1,000	20	15	15	0.01	
MW-12	12/5/2006	--	--	9.04	--	--	14,000	3,700	76 J	3776	1.6	52	280	1,390	<1.0	4.2 J	20 B	--	
MW-12	1/24/2007	--	--	8.24	--	--	9,500	1,600	<250	1725	<5.0	34	89	1,140	<5.0	11	65	--	
MW-12	5/8/2007	--	--	8.59	--	--	9,400	1,400	--	1400	3.2	61	77	540	<2.0	2	14	--	
MW-12	6/4/2007	56.79	--	9.05	47.74	--	12,000	330,017	<100	330067	<3	19	120	560	<3	--	7.9	<3	
MW-12	9/5/2007	56.79	--	10.18	46.61	--	3,100	--	--	--	<0.5	1	31	55	<0.5	--	2.5	<0.5	
MW-12	12/19/2007	56.79	--	9.72	47.07	--	2,200	--	--	--	<0.5	0.5	24	19	<0.5	--	13.4	<0.5	In analyzing DRO w/ silica gel, the observed sample pattern includes #2 fuel/diesel and an additional pattern that elutes earlier in the DRO range.
MW-12	3/6/2008	56.79	--	8.56	48.23	--	7,100	--	--	12	--	250	180	1,100	<0.5	--	--	<0.5	In analyzing DRO w/ silica gel, the observed sample pattern is not typical of #2 fuel/diesel.
MW-12	6/16/2008	56.79	7.98	8.03	48.80	0.05	--	--	--	--	--	--	--	--	--	--	--	--	
MW-12	9/11/2008	56.79	8.12	8.17	48.66	0.05	--	--	--	--	--	--	--	--	--	--	--	--	
MW-12	11/20/2008	56.79	8.15	8.27	48.62	0.12	--	--	--	--	--	--	--	--	--	--	--	--	
MW-12	3/4/2009	56.79	7.52	7.56	49.26	0.04	--	--	--	--	--	--	--	--	--	--	--	--	
MW-12	6/4/2009	56.79	7.74	7.80	49.04	0.06	--	--	--	--	--	--	--	--	--	--	--	--	
MW-12	9/22/2009	56.79	9.51	10.21	47.14	0.70	--	--	--	--	--	--	--	--	--	--	--	--	
MW-12	9/23/2009	56.79	--	12.68	44.11	--	980,000	460,000	530,000	990,000	--	--	--	--	--	--	--	--	
MW-12	9/24/2009	56.79	--	9.81	46.98	--	44,000	30,000	35,000	65,000	--	--	--	--	--	--	--	--	
MW-12	10/1/2009	56.79	--	10.23	46.56	--	12,000 J	5,000	25,000	30,000	--	--	--	--	--	--	--	--	
MW-12	10/8/2009	56.79	--	10.47	46.32	--	3,700	3,800	14,000	17,800	--	--	--	--	--	--	--	--	
MW-12	10/15/2009	56.79	--	10.60	46.19	--	3,400	1,900 J	4800 J	6700	--	--	--	--	--	--	--	--	
MW-12	10/22/2009	56.79	--	10.45	46.34	--	4,900	810 J	2,800	3,610	--	--	--	--	--	--	--	--	
MW-12	11/18/2009	56.79	--	9.66	47.13	--	3,200	1,400 J	1,800 J	3200	--	--	--	--	--	--	--	--	
MW-12	12/3/2009	56.79	--	8.80	47.99	--	5,900	--	--	--	<10	11	35	260	<10	--	--	<10	
MW-12	12/16/2009	56.79	--	--	--	--	4,500	2,200	4,300	6,500	--	--	--	--	--	--	--	--	
MW-12	1/27/2010	56.79	--	8.93	47.86	--	9,900	--	--	--	--	--	--	--	--	--	--	--	
MW-12	2/12/2010	56.79	--	9.00	47.79	--	5,100	--	--	--	--	--	--	--	--	--	--	--	In analyzing DRO w/ silica gel, the observed sample pattern is not typical of #2 fuel/diesel.
MW-12	3/30/2010	56.79	--	8.35	48.44	--	4,900	--	--	--	--	--	--	--	--	--	--	--	
MW-12	6/18/2010	56.79	--	8.39	48.40	--	6,900	--	--	--	<0.5	5	82	290	--	--	--	--	
MW-12	9/2/2010	56.79	--	9.87	46.92	--	2,600	5,100	<350	5275	<0.5	1	29	29	--	--	--	--	
MW-12	12/7/2010	56.79	--	9.74	47.05	--	5,000	--	--	--	<0.5	0.9	28	37	--	--	--	--	
MW-12	3/7/2011	56.79	--	7.53	49.26	--	110	--	--	--	<0.5	<0.5	0.9	3	--	--	--	--	
MW-12	6/9/2011	56.79	--	7.14	49.65	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-12	9/16/2011	56.79	--	8.53	48.26	--	3,100	--	--	--	<0.5	0.5	15	48	--	--	--	--	
MW-12	12/13/2011	56.79	--	9.05	47.74	--	3,800	--	--	--	<0.5	<0.5	10	16	--	--	--	--	
MW-12	12/19/2011	56.79	--	8.96	47.83	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-12	3/15/2012	56.79	--	9.77	47.02	--	<50	--	--	--	<0.5	<0.5	<0.5	<0.5	--	--	--	--	
MW-12	6/13/2012	56.79	--	7.40	49.39	--	<50	--	--	--	<0.5	<0.5	<0.5	<0.5	--	--	--	--	
MW-12	9/10/2012	56.79	--	8.35	48.44	--	3,200	--	--	--	<0.5	<0.5	9	4	--	--	--	--	
MW-12	12/10/2012	56.79	--	7.84	48.95	--	150	--	--	--	<0.5	<0.5	<0.5	<0.5	--	--	--	--	
MW-12	3/11/2013	56.79	--	7.13	49.66	--	150	--	--	--	<0.5	<0.5	<0.5	<0.5	--	--	--	--	
MW-12	6/12/2013	56.79	--	7.32	49.47	--	310	540	<67	573.5	<0.5	<0.5	<0.5	<0.5	--	--	--	--	
MW-12	9/18/2013	56.79	--	8.68	48.11	--	1,500	1,500	<66	1533	<0.5	<0.5	1	0.9	--	--	--	--	
MW-12	12/11/2013	56.79	--	8.24	48.55	--	97	110	<66	143	<0.5	<0.5	<0.5	<0.5	--	--	--	--	
MW-12	3/12/2014	56.79	--	7.72	49.07	--	130	280	<70	315	<0.5	<0.5	<0.5	<0.5	--	--	--	--	
MW-12	9/27/2014	56.79	--	8.70	48.09	--	<50	<30	--	15	<0.5	<0.5	<0.5	<0.5	--	--	--	--	
MW-12	8/17/2020	56.79	--	9.09	47.70	--	175 B	144 J	<83.3	185.65	<0.0941	0.473 J	0.440 J	0.803 J	--	--	<2.95	--	
MW-12	9/28/2021	56.72	--	10.28	46.44	--	143	190 J	<250	315	<1.00	<1.00	<1.00	<3.00	<1.00	--	<6.00	--	
MW-13	8/10/2006	--	--	9.83	--	--	15,000	5,300	<2,200	6400	5	47	260	1,400	<1	4.3	29.6	--	

Table 2. Historical Groundwater Gauging Data and Select Analytical Results
 Chevron Service Station No. 97502
 640 Metcalf Street, Sedro-Woolley, Washington
 Analytical results are presented in micrograms per liter (µg/L)

Well	Date	TOC	DTP	DTW	GWE	NAPL	GRO		HO	DRO+HO	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	Dissolved Lead		EDB	Comments
							800/1,000	500	500	500	5	1,000	700	1,000	20	15	15		
MW-13	12/5/2006	--	--	9.68	--	--	5,000	1,700	270	1970	0.99 J	33	110	590	<1.0	1.5 BJ	17 B	--	
MW-13	1/24/2007	--	--	8.93	--	--	2,300	190	<260	320	1.5	21	41	242	<1.0	<2.0	22	--	
MW-13	5/8/2007	--	--	9.17	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-13	6/4/2007	56.71	11.15	13.00	45.19	1.85	--	--	--	--	--	--	--	--	--	--	--	--	
MW-13	9/5/2007	56.71	11.70	11.96	44.96	0.26	--	--	--	--	--	--	--	--	--	--	--	--	
MW-13	12/19/2007	56.71	10.51	10.83	46.14	0.32	--	--	--	--	--	--	--	--	--	--	--	--	
MW-13	3/6/2008	56.71	9.05	9.37	47.60	0.32	--	--	--	--	--	--	--	--	--	--	--	--	
MW-13	6/16/2008	56.71	8.25	8.49	48.41	0.24	--	--	--	--	--	--	--	--	--	--	--	--	
MW-13	9/11/2008	56.71	8.64	8.83	48.03	0.19	--	--	--	--	--	--	--	--	--	--	--	--	
MW-13	11/20/2008	56.71	8.77	8.94	47.91	0.17	--	--	--	--	--	--	--	--	--	--	--	--	
MW-13	3/4/2009	56.71	7.68	7.73	49.02	0.05	--	--	--	--	--	--	--	--	--	--	--	--	
MW-13	6/4/2009	56.71	7.94	7.99	48.76	0.05	--	--	--	--	--	--	--	--	--	--	--	--	
MW-13	9/22/2009	56.71	9.86	9.89	46.84	0.03	--	--	--	--	--	--	--	--	--	--	--	--	
MW-13	9/23/2009	56.71	--	12.98	43.73	--	96,000	31,000	49,000 J	80000	--	--	--	--	--	--	--	--	
MW-13	9/24/2009	56.71	--	12.12	44.59	--	13,000	3,300	<1,400	4000	--	--	--	--	--	--	--	--	
MW-13	10/1/2009	56.71	12.59	12.60	44.12	0.01	9,700	8,000	500 J	8500	--	--	--	--	--	--	--	--	
MW-13	10/8/2009	56.71	--	12.46	44.25	--	8,000	760	350	1110	--	--	--	--	--	--	--	--	
MW-13	10/15/2009	56.71	12.70	12.71	44.01	0.01	8,400	930	<68	964	--	--	--	--	--	--	--	--	
MW-13	10/22/2009	56.71	--	12.50	44.21	--	6,500	760	<68	794	--	--	--	--	--	--	--	--	
MW-13	11/18/2009	56.71	--	10.73	45.98	--	8,900	1,400	370	1,770	--	--	--	--	--	--	--	--	
MW-13	12/3/2009	56.71	--	9.68	47.03	--	11,000	--	--	8	30	300	1,400	<0.5	--	--	--	<0.5	
MW-13	12/16/2009	56.71	--	--	--	--	8,700	1,400	<66	1433	--	--	--	--	--	--	--	--	
MW-13	1/27/2010	56.71	--	9.45	47.26	--	16,000	--	--	--	--	--	--	--	--	--	--	--	
MW-13	2/12/2010	56.71	--	9.55	47.16	--	11,000	--	--	--	--	--	--	--	--	--	--	--	
MW-13	3/30/2010	56.71	--	9.24	47.47	--	15,000	--	--	--	--	--	--	--	--	--	--	--	
MW-13	6/18/2010	56.71	--	9.00	47.71	--	10,000	--	--	5	23	360	1,300	--	--	--	--	--	
MW-13	9/2/2010	56.71	--	10.56	46.15	--	11,000	3,300	<350	3475	5	23	280	1,100	--	--	--	--	
MW-13	12/7/2010	56.71	--	10.46	46.25	--	9,100	--	--	--	2	20	200	1,100	--	--	--	--	
MW-13	3/7/2011	56.71	--	7.68	49.03	--	4,200	--	--	--	<0.5	<0.5	2	9	--	--	--	--	
MW-13	6/9/2011	56.71	--	7.20	49.51	--	1,800	--	--	--	<0.5	0.6	10	45	--	--	--	--	
MW-13	9/16/2011	56.71	--	9.05	47.66	--	6,400	--	--	--	3	7	160	590	--	--	--	--	
MW-13	12/13/2011	56.71	--	9.60	47.11	--	7,600	--	--	--	<3	11	190	810	--	--	--	--	
MW-13	12/19/2011	56.71	--	9.60	47.11	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-13	3/15/2012	56.71	--	9.25	47.46	--	<50	--	--	--	<0.5	<0.5	<0.5	<0.5	--	--	--	--	
MW-13	6/13/2012	56.71	--	7.60	49.11	--	<50	--	--	--	<0.5	<0.5	<0.5	<0.5	--	--	--	--	
MW-13	9/10/2012	56.71	--	9.38	47.33	--	6,000	--	--	--	<5	7	140	620	--	--	--	--	
MW-13	12/10/2012	56.71	--	8.28	48.43	--	3,000	--	--	--	<5	<5	55	310	--	--	--	--	
MW-13	3/11/2013	56.71	--	7.42	49.29	--	1,300	--	--	--	<0.5	0.8	18	91	--	--	--	--	
MW-13	6/12/2013	56.71	--	7.63	49.08	--	750	<29	<67	48	<0.5	1	23	100	--	--	--	--	
MW-13	9/18/2013	56.71	--	9.42	47.29	--	5,500	500	<67	533.5	0.6	7	170	670	--	--	--	--	
MW-13	12/11/2013	56.71	--	8.78	47.93	--	4,500	290	<67	323.5	<0.5	7	170	710	--	--	--	--	
MW-13	3/12/2014	56.71	--	7.14	49.57	Sheen	<50	35	<67	68.5	<0.5	<0.5	<0.5	<0.5	--	--	--	--	
MW-13	9/27/2014	56.71	--	9.47	47.24	--	<50	<29	--	14.5	<0.5	<0.5	<0.5	<0.5	--	--	--	--	
MW-13	8/17/2020	56.71	--	9.41	47.30	--	2,290 [2,450]	731 [516]	<83.3 [<83.3]	772.65 [557.65]	<0.0941 [<0.0941]	0.580 J [0.535 J]	20.1 [21.2]	39.4 [39.7]	--	--	<2.95 [<2.95]	--	
MW-13	9/28/2021	56.67	--	10.73	45.94	--	4,940 [4,530]	730 [752]	<250 [<250]	885 [877]	0.147 J [0.194 J]	1.61 [1.56]	76.3 [73.4]	108 [122]	<1.00	--	-- [-]	--	
MW-14	8/10/2006	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Well dry
MW-14	12/5/2006	--	--	10.14	--	--	19,000	1,500	130 J	1630	31	560	690	3,300	<10	0.055 BJ	8.1 B	--	
MW-14	1/24/2007	--	--	9.27	--	--	32,000	2,300	<260	2430	29	1,200	1,000	5,500	<25	<2.0	26	--	
MW-14	5/8/2007	--	--	9.44	--	--	1,700	180	--	180	6.2	3.1	53	143	<2.0	<2.0	13	--	
MW-14	6/4/2007	56.51	--	9.58	46.93	--	3,100	<79	<98	88.5	15	7	110	290	<0.5	--	2.8	<0.5	
MW-14	9/5/2007	56.51	--	10.54	45.97	--	3,000	--	<100	50	9	17	140	370	<0.5	--	0.26	<0.5	
MW-14	12/19/2007	56.51	--	10.60	45.91	--	11,000	--	--	--	7	39	240	1,000	<1	--	4.8	<1	
MW-14	3/6/2008	56.51	--	9.38	47.13	--	2,300	--	--	--	2	66	76	330	<0.5	--	--	<0.5	
MW-14	6/16/2008	56.51	--	8.78	47.73	--	200	--	--	--	2	0.6	6	14	<0.5	--	--	<0.5	
MW-14	9/11/2008	56.51	--	9.09	47.42	--	1,800	--	--	--	9	9	81	230	<0.5	--	--	<0.5	
MW-14	11/20/2008	56.51	--	9.31	47.20	--	3,900	--	--	--	12	13	120	420	<0.5	--	--	<0.5	
MW-14	3/4/2009	56.51	--	8.14	48.37	--	5,400	--	--	--	21	21	170	480	<1	--	--	<1	
MW-14	6/4/2009	56.51	--	8.39	48.12	--	520	--	--	--	3	1	10	27	<0.5	--	--	<0.5	
MW-14	9/22/2009	56.51	--	10.23	46.28	--	7,300	210	140 J	350	--	--	--	--	--	--	--	--	
MW-14	9/24/2009	56.51	--	10.30	46.21	--	9,500	560 J	<700	910	--	--	--	--	--	--	--	--	
MW-14	10/1/2009	56.51	--	10.68	45.83	--	12,000	270	<67	303.5	--	--	--	--	--	--	--	--	

Table 2. Historical Groundwater Gauging Data and Select Analytical Results
 Chevron Service Station No. 97502
 640 Metcalf Street, Sedro-Woolley, Washington
 Analytical results are presented in micrograms per liter (µg/L)

Well	Date	TOC	DTP	DTW	GWE	NAPL	GRO					Benzene	Toluene	Ethylbenzene	Total		Dissolved		Comments
							800/1,000	500	500	500	5				1,000	700	Xylenes	MTBE	
MTCA Method A CULs							800/1,000	500	500	500	5	1,000	700	1,000	20	15	15	0.01	
MW-14	10/8/2009	56.51	--	10.80	45.71	--	11,000	220	<67	253.5	--	--	--	--	--	--	--	--	
MW-14	10/15/2009	56.51	--	10.94	45.57	--	14,000	370	<66	403	--	--	--	--	--	--	--	--	
MW-14	10/22/2009	56.51	--	10.94	45.57	--	15,000	260	<66	293	--	--	--	--	--	--	--	--	
MW-14	11/18/2009	56.51	--	10.39	46.12	--	19,000	660	<130	725	--	--	--	--	--	--	--	--	
MW-14	12/3/2009	56.51	--	9.61	46.90	--	22,000	--	--	6	200	530	2,800	<0.5	--	--	--	<0.5	
MW-14	12/16/2009	56.51	--	--	--	--	20,000	690	<66	723	--	--	--	--	--	--	--	--	
MW-14	1/27/2010	56.51	--	9.24	47.27	--	24,000	--	--	--	--	--	--	--	--	--	--	--	
MW-14	2/12/2010	56.51	--	9.29	47.22	--	19,000	--	--	--	--	--	--	--	--	--	--	--	
MW-14	3/30/2010	56.51	--	9.21	47.30	--	14,000	--	--	--	--	--	--	--	--	--	--	--	
MW-14	6/18/2010	56.51	--	8.90	47.61	--	6,600	--	--	1	83	150	680	--	--	--	--	--	
MW-14	9/2/2010	56.51	--	10.33	46.18	--	7,400	320	<350	495	1	67	1,100	--	--	--	--	--	
MW-14	12/7/2010	56.51	--	10.25	46.26	--	8,600	--	--	1	95	320	1,600	--	--	--	--	--	
MW-14	3/7/2011	56.51	--	8.14	48.37	--	8,700	--	--	0.7	53	77	1,100	--	--	--	--	--	
MW-14	6/9/2011	56.51	--	7.61	48.90	--	5,200	--	--	0.7	31	170	690	--	--	--	--	--	
MW-14	9/16/2011	56.51	--	8.85	47.66	--	7,400	--	--	3	22	75	830	--	--	--	--	--	
MW-14	12/13/2011	56.51	--	9.45	47.06	--	8,600	--	--	<3	34	280	1,400	--	--	--	--	--	
MW-14	12/19/2011	56.51	--	9.40	47.11	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-14	3/15/2012	56.51	--	8.15	48.36	--	13,000	--	--	<3	110	340	2,100	--	--	--	--	--	
MW-14	6/13/2012	56.51	--	7.80	48.71	--	4,900	--	--	<1	19	100	470	--	--	--	--	--	
MW-14	9/10/2012	56.51	--	9.10	47.41	--	13,000	--	--	<5	39	390	1,600	--	--	--	--	--	
MW-14	12/10/2012	56.51	--	8.52	47.99	--	3,000	--	--	<5	11	60	390	--	--	--	--	--	
MW-14	3/11/2013	56.51	--	7.70	48.81	--	17,000	--	--	<5	100	460	2,500	--	--	--	--	--	
MW-14	6/12/2013	56.51	--	7.90	48.61	--	10,000	120	<66	153	0.5	56	1,800	--	--	--	--	--	
MW-14	9/18/2013	56.51	--	9.28	47.23	--	12,000	190	<67	223.5	0.6	50	2,300	--	--	--	--	--	
MW-14	12/11/2013	56.51	--	8.90	47.61	--	9,200	90	<66	123	<3	39	1,900	--	--	--	--	--	
MW-14	3/12/2014	56.51	--	9.02	47.49	--	18,000	--	--	<1	54	580	2,800	--	--	--	--	--	
MW-14	9/27/2014	56.51	--	9.22	47.29	--	280	--	--	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	
MW-14	8/17/2020	56.51	--	9.65	46.86	--	5,720	480	<83.3	521.65	0.245 J	4.55	420	--	--	--	<2.95	--	
MW-14	09/28/2021	56.49	--	10.62	45.87	--	5,110	556	<250	521.65	0.394 J	7.98	837 E	<1.00	--	--	<6.00	--	
MW-15	09/27/2021	56.71	--	10.09	46.62	--	219 B	396	<250	521	<1.00	<1.00	<1.00	<3.00	<1.00	--	<6.00	--	
MW-16	09/27/2021	56.62	--	9.75	46.87	--	54.7 B J	72.0 J	<250	197	<1.00	<1.00	<1.00	<3.00	<1.00	--	<6.00	--	
MW-17	09/28/2021	56.54	--	10.34	46.20	--	<100	546	<250	671	0.124 J	125 E	152 E	616 E	<1.00	--	<6.00	--	
MW-18	09/28/2021	56.56	--	15.1	41.46	--	367	161 J	<250	286	<1.00	<1.00	<1.00	<3.00	<1.00	--	3.80 J	--	
MW-21	09/28/2021	55.95	--	9.18	46.77	--	233	244	<250	369	<1.00	<1.00	2.3	12.9	<1.00	--	4.16 J	--	

Notes:

Surveyed in 2021 by Otak, Inc. using NAD 83 (horizontal) and NAVD 88 (vertical).

800/1,000 = GRO MTCA Method A CUL with benzene present is 800 µg/L and without is 1,000 µg/L

BOLD and highlighted values are greater than their respective MTCA Method A CUL

BOLD values are non-detect below the laboratory MDL, but the MDL is greater than the MTCA Method A CUL

If NAPL is present, GWE is corrected according to the following formula: (TOC - DTW) + (0.8 x NAPL)

Abbreviations:

GB = Grab-groundwater sample

MW = Groundwater monitoring well

TOC = Top of casing in feet above NAVD 88

DTP = Depth to product in feet below TOC

DTW = Depth to water in feet below TOC

GWE = Groundwater elevation in feet relative to NAVD 88

NAPL = Non-aqueous phase liquid thickness in feet

[21.2] = Blind duplicate sample results

-- = Not applicable, not available, or not analyzed

ND = Not detected

Table 2. Historical Groundwater Gauging Data and Select Analytical Results

Chevron Service Station No. 97502

640 Metcalf Street, Sedro-Woolley, Washington

Analytical results are presented in micrograms per liter (µg/L)

Well	Date	TOC	DTP	DTW	GWE	NAPL	GRO	DRO	HO	DRO+HO	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	Dissolved Lead	Total Lead	EDB	Comments
MTCA Method A CULs							800/1,000	500	500	500	5	1,000	700	1,000	20	15	15	0.01	

MDL = Method detection limit

MTCA = Model Toxics Control Act Cleanup

CUL = Cleanup Level

NAVD 88 = North American Vertical Datum of 1988

USEPA = United States Environmental Protection Agency

Laboratory Qualifiers:

<n = Not detected at or above the laboratory MDL

J = Estimated value; result is ≥ the MDL and < the Reported Detection Limit

B = The same analyte is found in the associated blank

Analytical Methods:

Samples analyzed by NWTPH-Gx

GRO = Total Petroleum Hydrocarbons as Gasoline Range Organics,

Samples analyzed by NWTPH-Dx

DRO = Total Petroleum Hydrocarbons as Diesel Range Organics

HO = Total Petroleum Hydrocarbons as Heavy Oil Range Organics

Samples analyzed by NWTPH-Dx modified

DRO w/ Silica Gel = Total Petroleum Hydrocarbons as Diesel Range Organics with silica gel cleanup

HO w/ Silica Gel = Total Petroleum Hydrocarbons as Heavy Oil Range Organics with silica gel cleanup

Samples analyzed by USEPA Method 8260B/8260D

BTEX = benzene, toluene, ethylbenzene, and total xylenes

MTBE = Methyl tertiary-butyl ether

EDB = 1,2-Dibromoethane (ethylene dibromide)

Samples analyzed by USEPA Method 6010D

Dissolved lead

Total lead

Table 3. Historical Groundwater Analytical Results - cPAHs
 Chevron Service Station No. 97502
 640 Metcalf Street, Sedro-Woolley, Washington
 Analytical results are presented in micrograms per liter (µg/L)

Well	Date	Benzo(a)-anthracene	Chrysene	Benzo(b)-fluoranthene	Benzo(k)-fluoranthene	Benzo(a)-pyrene	Indeno(1,2,3-cd)pyrene	Dibenz(a,h)-anthracene	Total cPAHS	Naphthalene	1-Methylnaphthalene	2-Methylnaphthalene	Total Naphthalenes
MTCA Method A CULs		--	--	--	--	0.1	--	--	0.1	--	--	--	160
GB-1	4/1/2008	0.015	0.024	0.028	0.017	0.021	0.018	<0.050	0.032	<5 [0.064]	--	--	
GB-2	4/2/2008	0.027	0.040	0.052	0.028	0.037	0.031	<0.0097	0.052	0.43	--	--	0.430
GB-3	4/1/2008	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.008	1.0	--	--	1.000
GB-4	4/1/2008	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	0.007	0.16	--	--	0.160
GB-5	4/2/2008	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	0.007	16.0	--	--	16.000
MW-4	8/17/2020	<0.0203	<0.0179	<0.0168	<0.0202	<0.0184	<0.0158	<0.0160	0.0137	<0.0917	<0.0687	<0.0674	0.1139
MW-4	9/28/2021	--	--	--	--	--	--	--	--	--	--	--	
MW-5	8/18/2020	<0.0203	<0.0179	<0.0168	<0.0202	<0.0184	<0.0158	<0.0160	0.0137	<0.0917	<0.0687	<0.0674	0.1139
MW-5	9/28/2021	--	--	--	--	--	--	--	--	--	--	--	
MW-6	8/18/2020	<0.0203	<0.0179	<0.0168	<0.0202	<0.0184	<0.0158	<0.0160	0.0137	<0.0917	<0.0687	<0.0674	0.1139
MW-6	9/27/2021	--	--	--	--	--	--	--	--	--	--	--	
MW-7	6/4/2007	0.22	0.26	0.24	<0.098	0.19	0.11	<0.098	0.2594	--	--	--	--
MW-7	12/19/2007	0.25	0.34	0.28	0.11	0.23	0.14	0.047	0.3161	--	--	--	--
MW-7	8/17/2020	<0.0203	<0.0179	<0.0168	<0.0202	<0.0184	<0.0158	<0.0160	0.0137	24.1	2.94	3.00	30.04
MW-7	9/28/2021	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	0.0378	105	16.9	19.7	
MW-8	12/19/2007	0.010	0.011	0.018	<0.0099	0.013	<0.0099	<0.0099	0.0174	--	--	--	--
MW-8	8/18/2020	<0.0203	<0.0179	<0.0168	<0.0202	<0.0184	<0.0158	<0.0160	0.0137	0.105 J	0.239 J	0.261	0.605
MW-8	9/28/2021	--	--	--	--	--	--	--	--	--	--	--	
MW-10	6/4/2007	0.021	0.021	0.022	0.012	0.017	0.012	<0.010	0.0244	--	--	--	--
MW-10	9/5/2007	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	0.0083	--	--	--	--
MW-10	12/19/2007	<0.0098	<0.0098	0.014	<0.0098	0.010	<0.0098	<0.0098	0.0134	--	--	--	--
MW-10	8/17/2020	<0.0203	<0.0179	<0.0168	<0.0202	<0.0184	<0.0158	<0.0160	0.0137	9.85	3.89	1.40	15.14
MW-10	9/29/2021	--	--	--	--	--	--	--	--	--	--	--	
MW-11	6/4/2007	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.0376	--	--	--	--
MW-11	9/5/2007	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.0076	--	--	--	--
MW-11	12/19/2007	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.0076	--	--	--	--
MW-11	8/17/2020	<0.0203	<0.0179	<0.0168	<0.0202	<0.0184	<0.0158	<0.0160	0.0137	55.5	22.3	22.7	100.5
MW-11	9/29/2021	--	--	--	--	--	--	--	--	--	--	--	
MW-12	6/4/2007	0.010	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	0.0708	--	--	--	--
MW-12	9/5/2007	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	0.0083	--	--	--	--
MW-12	12/19/2007	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.0076	--	--	--	--
MW-12	8/17/2020	<0.0203	<0.0179	<0.0168	<0.0202	<0.0184	<0.0158	<0.0160	0.0137	<0.0917	<0.0687	<0.0674	0.1139
MW-12	9/28/2021	--	--	--	--	--	--	--	--	--	--	--	
MW-13	8/17/2020	<0.0203 [<0.0203]	<0.0179 [<0.0179]	<0.0168 [<0.0168]	<0.0202 [<0.0202]	<0.0184 [<0.0184]	<0.0158 [<0.0158]	<0.0160 [<0.0160]	0.0137 [0.0137]	13.3 [15.2]	13.6 [15.8]	9.72 [11.3]	36.62 [42.3]
MW-13	9/28/2021	--	--	--	--	--	--	--	--	--	--	--	

Table 3. Historical Groundwater Analytical Results - cPAHs
 Chevron Service Station No. 97502
 640 Metcalf Street, Sedro-Woolley, Washington
 Analytical results are presented in micrograms per liter (µg/L)

Well	Date	Benzo(a)-anthracene	Chrysene	Benzo(b)-fluoranthene	Benzo(k)-fluoranthene	Benzo(a)-pyrene	Indeno(1,2,3-cd)pyrene	Dibenz(a,h)-anthracene	Total cPAHS	Naphthalene	1-Methylnaphthalene	2-Methylnaphthalene	Total Naphthalenes
MTCA Method A CULs		--	--	--	--	0.1	--	--	0.1	--	--	--	160
MW-14	6/4/2007	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.0076	--	--	--	--
MW-14	9/5/2007	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	0.0091	--	--	--	--
MW-14	12/19/2007	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.0755	--	--	--	--
MW-14	8/17/2020	<0.0203	<0.0179	<0.0168	<0.0202	<0.0184	<0.0158	<0.0160	0.01374	42.2	6.24	7.30	55.74
MW-14	9/28/2021	--	--	--	--	--	--	--	--	--	--	--	--

Notes:

BOLD and highlighted values are greater than their respective MTCA Method A CUL

Abbreviations:

cPAH = Carcinogenic Polycyclic Aromatic Hydrocarbon
 GB = Grab-groundwater sample
 MW = Groundwater monitoring well
 [21.2] = Blind duplicate sample results
 -- = Not applicable, not available, or not analyzed
 ND = Not detected
 MDL = Method detection limit
 MTCA = Model Toxics Control Act Cleanup
 CUL = Cleanup Level
 USEPA = United States Environmental Protection Agency

Laboratory Qualifiers:

<n = Not detected at or above the laboratory MDL
 J = Estimated value; result is ≥ the MDL and < the Reported Detection Limit

Analytical Methods:

Samples analyzed by USEPA Method 8270E-SIM
 Benzo(a)anthracene
 Chrysene
 Benzo(b)fluoranthene
 Benzo(k)fluoranthene
 Benzo(a)pyrene
 Indeno(1,2,3-cd)pyrene
 Dibenz(a,h)anthracene
 Naphthalene
 1-Methylnaphthalene
 2-Methylnaphthalene

Table 4. Historical Groundwater Analytical Results - VOCs and sVOCs

Chevron Service Station No. 97502

640 Metcalf Street, Sedro-Woolley, Washington

Analytical results are presented in micrograms per liter (µg/L)

Well	Date	MBAS	DIPE	ETBE	TAME	TBA	EDC
MTCA Method A CULs		--	--	--	--	--	5
GB-1	4/1/2008	--	<4	<4	<4	<80	<4
GB-2	4/2/2008	--	--	--	--	--	<0.5
GB-3	4/1/2008	--	--	--	--	--	<0.5
GB-4	4/1/2008	--	--	--	--	--	<0.5
GB-5	4/2/2008	--	--	--	--	--	<0.5
MW-4	7/2/2005	--	--	<0.5	<0.5	<5	<0.5
MW-4	10/1/2009	<40	--	--	--	--	--
MW-4	10/8/2009	<40	--	--	--	--	--
MW-4	10/15/2009	68 J	--	--	--	--	--
MW-4	10/22/2009	76 J	--	--	--	--	--
MW-4	11/18/2009	<40	--	--	--	--	--
MW-4	12/16/2009	<40	--	--	--	--	--
MW-4	1/27/2010	<40	--	--	--	--	--
MW-4	2/12/2010	<40	--	--	--	--	--
MW-4	6/18/2010	<40	--	--	--	--	--
MW-4	9/2/2010	<40	--	--	--	--	--
MW-4	12/7/2010	<40	--	--	--	--	--
MW-4	3/7/2011	<80	--	--	--	--	--
MW-4	6/9/2011	<40	--	--	--	--	--
MW-4	9/16/2011	<80	--	--	--	--	--
MW-4	12/19/2011	<40	--	--	--	--	--
MW-4	3/15/2012	<40	--	--	--	--	--
MW-4	6/13/2012	<200	--	--	--	--	--
MW-4	9/10/2012	<40	--	--	--	--	--
MW-4	12/10/2012	<40	--	--	--	--	--

Table 4. Historical Groundwater Analytical Results - VOCs and sVOCs

Chevron Service Station No. 97502

640 Metcalf Street, Sedro-Woolley, Washington

Analytical results are presented in micrograms per liter (µg/L)

Well	Date	MBAS	DIPE	ETBE	TAME	TBA	EDC
MTCA Method A CULs		--	--	--	--	--	5
MW-5	7/2/2005	--	--	<0.5	<0.5	<5	<0.5
MW-6	7/2/2005	--	--	<0.5	<0.5	<5	<0.5
MW-7	7/2/2005	--	--	<0.5	<0.5	<5	<0.5
MW-7	6/4/2007	--	<0.5	<0.5	<0.5	<2	<0.5
MW-7	12/19/2007	-	<1	<1	<1	<4	<1
MW-7	11/20/2008	--	<13	<13	<13	<50	<13
MW-7	3/4/2009	--	<0.5	<0.5	<0.5	<2	<0.5
MW-7	6/4/2009	--	<0.5	<0.5	<0.5	<2	<0.5
MW-7	9/23/2009	3,000 J	--	--	--	--	--
MW-7	9/24/2009	330	--	--	--	--	--
MW-7	10/1/2009	100 J	--	--	--	--	--
MW-7	10/8/2009	42 J	--	--	--	--	--
MW-7	10/15/2009	<40	--	--	--	--	--
MW-7	10/22/2009	60 J	--	--	--	--	--
MW-7	11/18/2009	67 J	--	--	--	--	--
MW-7	12/3/2009	--	<10	<10	<10	<40	<10
MW-7	12/16/2009	<40	--	--	--	--	--
MW-7	1/27/2010	<40	--	--	--	--	--
MW-7	2/12/2010	58	--	--	--	--	--
MW-7	6/18/2010	270	--	--	--	--	--
MW-7	9/2/2010	240	--	--	--	--	--
MW-7	12/7/2010	230	--	--	--	--	--
MW-7	3/7/2011	<200	--	--	--	--	--
MW-7	6/9/2011	170	--	--	--	--	--
MW-7	9/16/2011	180	--	--	--	--	--
MW-7	12/19/2011	260	--	--	--	--	--
MW-7	3/15/2012	180	--	--	--	--	--

Table 4. Historical Groundwater Analytical Results - VOCs and sVOCs

Chevron Service Station No. 97502

640 Metcalf Street, Sedro-Woolley, Washington

Analytical results are presented in micrograms per liter (µg/L)

Well	Date	MBAS	DIPE	ETBE	TAME	TBA	EDC
MTCA Method A CULs		--	--	--	--	--	5
MW-7	6/13/2012	100	--	--	--	--	--
MW-7	9/10/2012	130	--	--	--	--	--
MW-7	12/10/2012	80	--	--	--	--	--
MW-8	12/19/2007	--	<0.5	<0.5	<0.5	<2	<0.5
MW-8	10/1/2009	66 J	--	--	--	--	--
MW-8	10/8/2009	<40	--	--	--	--	--
MW-8	10/15/2009	<40	--	--	--	--	--
MW-8	10/22/2009	<40	--	--	--	--	--
MW-8	11/18/2009	<40	--	--	--	--	--
MW-8	12/3/2009	--	--	--	--	--	--
MW-8	12/16/2009	43 J	--	--	--	--	--
MW-8	1/27/2010	<40	--	--	--	--	--
MW-8	2/12/2010	170	--	--	--	--	--
MW-8	6/18/2010	100	--	--	--	--	--
MW-8	9/2/2010	55	--	--	--	--	--
MW-8	12/7/2010	51	--	--	--	--	--
MW-8	3/7/2011	<200	--	--	--	--	--
MW-8	6/9/2011	160	--	--	--	--	--
MW-8	9/16/2011	75	--	--	--	--	--
MW-8	12/19/2011	270	--	--	--	--	--
MW-8	3/15/2012	<80	--	--	--	--	--
MW-8	6/13/2012	110	--	--	--	--	--
MW-8	9/10/2012	<40	--	--	--	--	--
MW-8	12/10/2012	86	--	--	--	--	--
MW-10	7/2/2005	--	--	<0.5	<0.5	<5	<0.5
MW-10	6/4/2007	--	<1	<1	<1	<4	<1
MW-10	9/5/2007	--	<1	<1	<1	<4	<1
MW-10	12/19/2007	--	<0.5	<0.5	<0.5	<2	<0.5
MW-10	3/6/2008	--	<0.5	<0.5	<0.5	<2	<0.5

Table 4. Historical Groundwater Analytical Results - VOCs and sVOCs

Chevron Service Station No. 97502

640 Metcalf Street, Sedro-Woolley, Washington

Analytical results are presented in micrograms per liter (µg/L)

Well	Date	MBAS	DIPE	ETBE	TAME	TBA	EDC
MTCA Method A CULs		--	--	--	--	--	5
MW-10	6/16/2008	--	<0.5	<0.5	<0.5	<2	<0.5
MW-10	9/11/2008	--	<0.5	<0.5	<0.5	<2	<0.5
MW-10	11/20/2008	--	<3	<3	<3	<10	<3
MW-10	3/4/2009	--	<0.5	<0.5	<0.5	<2	<0.5
MW-10	6/4/2009	--	<0.5	<0.5	<0.5	<2	<0.5
MW-10	9/24/2009	38 J	--	--	--	--	--
MW-10	10/1/2009	45 J	--	--	--	--	--
MW-10	10/8/2009	89 J	--	--	--	--	--
MW-10	10/15/2009	<40	--	--	--	--	--
MW-10	10/22/2009	52 J	--	--	--	--	--
MW-10	11/18/2009	170	--	--	--	--	--
MW-10	12/3/2009	--	<0.5	<0.5	<0.5	<2	<0.5
MW-10	12/16/2009	<40	--	--	--	--	--
MW-10	1/27/2010	<80	--	--	--	--	--
MW-10	2/12/2010	93	--	--	--	--	--
MW-10	3/30/2010	--	--	--	--	--	--
MW-10	6/18/2010	42	--	--	--	--	--
MW-10	9/2/2010	94	--	--	--	--	--
MW-10	12/7/2010	81	--	--	--	--	--
MW-10	3/7/2011	<200	--	--	--	--	--
MW-10	6/9/2011	67	--	--	--	--	--
MW-10	9/16/2011	130	--	--	--	--	--
MW-10	12/13/2011	--	--	--	--	--	--
MW-10	12/19/2011	580	--	--	--	--	--
MW-10	3/15/2012	<160	--	--	--	--	--
MW-10	6/13/2012	<40	--	--	--	--	--
MW-10	9/10/2012	<40	--	--	--	--	--
MW-10	12/10/2012	59	--	--	--	--	--
MW-11	7/2/2005	--	--	<1	<1	<10	<1

Table 4. Historical Groundwater Analytical Results - VOCs and sVOCs

Chevron Service Station No. 97502

640 Metcalf Street, Sedro-Woolley, Washington

Analytical results are presented in micrograms per liter (µg/L)

Well	Date	MBAS	DIPE	ETBE	TAME	TBA	EDC
MTCA Method A CULs		--	--	--	--	--	5
MW-11	6/4/2007	--	<1	<1	<1	<4	<1
MW-11	9/5/2007	--	<2	<2	<2	18	<2
MW-11	12/19/2007	--	<1	<1	<1	<4	<1
MW-11	3/6/2008	--	<0.5	<0.5	<0.5	<2	<0.5
MW-11	6/16/2008	--	<0.5	<0.5	<0.5	<2	<0.5
MW-11	9/11/2008	--	<0.5	<0.5	<0.5	<2	<0.5
MW-11	11/20/2008	--	<0.5	<0.5	<0.5	<2	<0.5
MW-11	3/4/2009	--	<0.5	<0.5	<0.5	<2	<0.5
MW-11	6/4/2009	--	<0.5	<0.5	<0.5	<2	<0.5
MW-11	9/22/2009	--	--	--	--	--	--
MW-11	9/24/2009	46 J	--	--	--	--	--
MW-11	10/1/2009	41 J	--	--	--	--	--
MW-11	10/8/2009	<40	--	--	--	--	--
MW-11	10/15/2009	<40	--	--	--	--	--
MW-11	10/22/2009	<40	--	--	--	--	--
MW-11	11/18/2009	<40	--	--	--	--	--
MW-11	12/3/2009	--	<0.5	<0.5	<0.5	<2	<0.5
MW-11	12/16/2009	56 J	--	--	--	--	--
MW-11	1/27/2010	<80	--	--	--	--	--
MW-11	2/12/2010	50	--	--	--	--	--
MW-11	3/30/2010	--	--	--	--	--	--
MW-11	6/18/2010	88	--	--	--	--	--
MW-11	9/2/2010	93	--	--	--	--	--
MW-11	12/7/2010	54	--	--	--	--	--
MW-11	3/7/2011	<200	--	--	--	--	--
MW-11	6/9/2011	69	--	--	--	--	--
MW-11	9/16/2011	<160	--	--	--	--	--
MW-11	12/13/2011	--	--	--	--	--	--
MW-11	12/19/2011	150	--	--	--	--	--
MW-11	3/15/2012	100	--	--	--	--	--

Table 4. Historical Groundwater Analytical Results - VOCs and sVOCs

Chevron Service Station No. 97502

640 Metcalf Street, Sedro-Woolley, Washington

Analytical results are presented in micrograms per liter (µg/L)

Well	Date	MBAS	DIPE	ETBE	TAME	TBA	EDC
MTCA Method A CULs		--	--	--	--	--	5
MW-11	6/13/2012	<40	--	--	--	--	--
MW-11	9/10/2012	120	--	--	--	--	--
MW-11	12/10/2012	66	--	--	--	--	--
MW-12	6/4/2007	--	<3	<3	<3	<10	<3
MW-12	9/5/2007	--	<0.5	<0.5	<0.5	3	<0.5
MW-12	12/19/2007	--	<0.5	<0.5	<0.5	34	<0.5
MW-12	3/6/2008	--	<0.5	<0.5	<0.5	5	<0.5
MW-12	9/23/2009	<140 J	--	--	--	--	--
MW-12	9/24/2009	310	--	--	--	--	--
MW-12	10/1/2009	61 J	--	--	--	--	--
MW-12	10/8/2009	44 J	--	--	--	--	--
MW-12	10/15/2009	<40	--	--	--	--	--
MW-12	10/22/2009	100 J	--	--	--	--	--
MW-12	11/18/2009	<40	--	--	--	--	--
MW-12	12/3/2009	--	<10	<10	<10	<40	<10
MW-12	12/16/2009	53	--	--	--	--	--
MW-12	1/27/2010	<40	--	--	--	--	--
MW-12	2/12/2010	<80	--	--	--	--	--
MW-12	3/30/2010	--	--	--	--	--	--
MW-12	6/18/2010	70	--	--	--	--	--
MW-12	9/2/2010	<40	--	--	--	--	--
MW-12	12/7/2010	44	--	--	--	--	--
MW-12	3/7/2011	<80	--	--	--	--	--
MW-12	6/9/2011	--	--	--	--	--	--
MW-12	9/16/2011	200	--	--	--	--	--
MW-12	12/13/2011	--	--	--	--	--	--
MW-12	12/19/2011	<160	--	--	--	--	--
MW-12	3/15/2012	90	--	--	--	--	--
MW-12	6/13/2012	<40	--	--	--	--	--

Table 4. Historical Groundwater Analytical Results - VOCs and sVOCs

Chevron Service Station No. 97502

640 Metcalf Street, Sedro-Woolley, Washington

Analytical results are presented in micrograms per liter (µg/L)

Well	Date	MBAS	DIPE	ETBE	TAME	TBA	EDC
MTCA Method A CULs		--	--	--	--	--	5
MW-12	9/10/2012	<40	--	--	--	--	--
MW-12	12/10/2012	<40	--	--	--	--	--
MW-13	9/23/2009	250 J	--	--	--	--	--
MW-13	9/24/2009	--	--	--	--	--	--
MW-13	10/1/2009	100 J	--	--	--	--	--
MW-13	10/8/2009	66 J	--	--	--	--	--
MW-13	10/15/2009	<40	--	--	--	--	--
MW-13	10/22/2009	99 J	--	--	--	--	--
MW-13	11/18/2009	<140	--	--	--	--	--
MW-13	12/3/2009	--	<0.5	<0.5	<0.5	<2	<0.5
MW-13	12/16/2009	82 J	--	--	--	--	--
MW-13	1/27/2010	90	--	--	--	--	--
MW-13	2/12/2010	130	--	--	--	--	--
MW-13	3/30/2010	--	--	--	--	--	--
MW-13	6/18/2010	98	--	--	--	--	--
MW-13	9/2/2010	66	--	--	--	--	--
MW-13	12/7/2010	120	--	--	--	--	--
MW-13	3/7/2011	<80	--	--	--	--	--
MW-13	6/9/2011	190	--	--	--	--	--
MW-13	9/16/2011	130	--	--	--	--	--
MW-13	12/13/2011	--	--	--	--	--	--
MW-13	12/19/2011	340	--	--	--	--	--
MW-13	3/15/2012	140	--	--	--	--	--
MW-13	6/13/2012	40	--	--	--	--	--
MW-13	9/10/2012	60	--	--	--	--	--
MW-13	12/10/2012	<40	--	--	--	--	--
MW-14	6/4/2007	--	<0.5	<0.5	<0.5	<2	<0.5
MW-14	9/5/2007	--	<0.5	<0.5	<0.5	<2	<0.5

Table 4. Historical Groundwater Analytical Results - VOCs and sVOCs

Chevron Service Station No. 97502

640 Metcalf Street, Sedro-Woolley, Washington

Analytical results are presented in micrograms per liter (µg/L)

Well	Date	MBAS	DIPE	ETBE	TAME	TBA	EDC
MTCA Method A CULs		--	--	--	--	--	5
MW-14	12/19/2007	--	<1	<1	<1	<4	<1
MW-14	3/6/2008	--	<0.5	<0.5	<0.5	<2	<0.5
MW-14	6/16/2008	--	<0.5	<0.5	<0.5	<2	<0.5
MW-14	9/11/2008	--	<0.5	<0.5	<0.5	<2	<0.5
MW-14	11/20/2008	--	<0.5	<0.5	<0.5	<2	<0.5
MW-14	3/4/2009	--	<1	<1	<1	<5	<1
MW-14	6/4/2009	--	<0.5	<0.5	<0.5	<2	<0.5
MW-14	9/22/2009	--	--	--	--	--	--
MW-14	9/24/2009	220 J	--	--	--	--	--
MW-14	10/1/2009	64 J	--	--	--	--	--
MW-14	10/8/2009	<40	--	--	--	--	--
MW-14	10/15/2009	<40	--	--	--	--	--
MW-14	10/22/2009	<40	--	--	--	--	--
MW-14	11/18/2009	<40	--	--	--	--	--
MW-14	12/3/2009	--	<0.5	<0.5	<0.5	<2	<0.5
MW-14	12/16/2009	80	--	--	--	--	--
MW-14	1/27/2010	<40	--	--	--	--	--
MW-14	2/12/2010	84	--	--	--	--	--
MW-14	3/30/2010	--	--	--	--	--	--
MW-14	6/18/2010	100	--	--	--	--	--
MW-14	9/2/2010	<80	--	--	--	--	--
MW-14	12/7/2010	100	--	--	--	--	--
MW-14	3/7/2011	<200	--	--	--	--	--
MW-14	6/9/2011	110	--	--	--	--	--
MW-14	9/16/2011	300	--	--	--	--	--
MW-14	12/13/2011	--	--	--	--	--	--
MW-14	12/19/2011	540	--	--	--	--	--
MW-14	3/15/2012	140	--	--	--	--	--
MW-14	6/13/2012	96	--	--	--	--	--
MW-14	9/10/2012	57	--	--	--	--	--

Table 4. Historical Groundwater Analytical Results - VOCs and sVOCs

Chevron Service Station No. 97502

640 Metcalf Street, Sedro-Woolley, Washington

Analytical results are presented in micrograms per liter (µg/L)

Well	Date	MBAS	DIPE	ETBE	TAME	TBA	EDC
MTCA Method A CULs		--	--	--	--	--	5
MW-14	12/10/2012	48	--	--	--	--	--

Notes:

BOLD values are non-detect below the laboratory MDL, but the MDL is greater than the MTCA Method A CUL

Abbreviations:

VOC = Volatile Organic Compound

sVOC = Semi-Volatile Organic Compound

GB = Grab-groundwater sample

MW = Groundwater monitoring well

-- = Not applicable, not available, or not analyzed

MDL = Method detection limit

MTCA = Model Toxics Control Act Cleanup

CUL = Cleanup Level

USEPA = United States Environmental Protection Agency

Laboratory Qualifiers:

<n = Not detected at or above the laboratory MDL

J = Estimated value; result is ≥ the MDL and < the Reported Detection Limit

Analytical Methods:

Samples analyzed by USEPA Method 5540C

M.B.A.S. = Methylene blue active substances

Samples analyzed by USEPA Method 8260B

DIPE = Di-isopropyl ether

ETBE = Ethyl tertiary-butyl ether

TAME = Tertiary amyl methyl ether

TBA = tertiary butyl alcohol

EDC = 1,2-Dichloroethane

Table 5. Historical Soil Vapor Data
 Chevron Service Station No. 97502
 640 Metcalf Street, Sedro-Woolley, Washington
 Analytical results are presented in micrograms per liter ($\mu\text{g}/\text{m}^3$)

Sample ID	Date	Average Barometric Pressure (inches)	Methane (%)	Oxygen (%)	Carbon Dioxide (%)	Benzene ($\mu\text{g}/\text{m}^3$)	Toluene ($\mu\text{g}/\text{m}^3$)	Ethylbenzene ($\mu\text{g}/\text{m}^3$)	Total Xylenes ($\mu\text{g}/\text{m}^3$)	Butane ($\mu\text{g}/\text{m}^3$)	Propane ($\mu\text{g}/\text{m}^3$)	Isopentane ($\mu\text{g}/\text{m}^3$)
MTCA Method B Sub-Slab Soil Gas Screening Level				--	--	11.00	76.000	15,000	1,500	--	--	--
VP-1-5	10/5/2007	29.99	0.00027	9.9	<0.05	8.2	35.0	41.0	172.0	--	--	--
VP-1-8	10/5/2007	29.99	0.00028	13.0	<0.05	17.0	34.0	25.0	104.0	--	--	--
VP-2-5	10/5/2007	29.99	0.00033	11.0	<0.05	4.4	24.0	19.0	78.0	--	--	--
VP-2-8	10/5/2007	29.99	0.00027	11.0	<0.05	2.0	11.0	3.0	13.5	--	--	--
VP-3-5	10/5/2007	29.99	0.00043	13.0	<0.05	5.2	35.0	9.4	41.0	--	--	--
VP-3-8	10/5/2007	29.99	0.00034	13.0	<0.05	7.5	38.0	9.1	34.6	--	--	--
Resampling Event												
VP-1-5	12/6/2007	30.00	<0.00024	11	8.9	<3.8	<5.2	<4.5	<5.2	ND	ND	ND
VP-1-8A	12/6/2007	30.00	<0.00020	11	8.8	<3.2	<4.4	5.6	5.0	20.21 JN	ND	ND
VP-1-8A (Lab Dup)	12/6/2007	30.00	<0.00020	11	8.8	<3.2	<4.4	5.2	5.0	ND	ND	ND
VP-1-8B	12/6/2007	30.00	<0.00022	11	8.8	<3.4	<4.7	4.6	<4.7	ND	ND	ND
VP-2-5	12/6/2007	30.00	<0.00021	14	6.3	<3.4	8.4	<4.0	36.8	ND	ND	ND
VP-2-8	12/6/2007	30.00	<0.00022	13	6.6	<3.5	10	6.0	46	13.31 JN	ND	ND
VP-3-5	12/6/2007	30.00	<0.00022	19	1.9	<3.5	<4.8	5.1	10	14.98 JN	ND	ND
VP-3-8	12/6/2007	30.00	<0.00023	19	2.5	<3.6	7.1	9.9	31.9	17.83 JN	ND	ND
Ambient 1	12/6/2007	30.00	<0.00023	22	0.038	<3.6	<5.0	<4.3	<5.0	ND	ND	ND
Ambient 2	12/6/2007	30.00	<0.00021	22	0.048	<3.3	<4.5	5.9	<5	ND	ND	ND
Ambient 2 (Lab Dup)	12/6/2007	30.00	--	--	==	<3.3	<4.5	5.5	<4.5	15.45 JN	ND	ND
Trip Blank	12/6/2007	30.00	<0.00010	<0.010	<0.010	<1.6	<2.2	<1.9	<2.2	ND	ND	ND

Notes:

BOLD and highlighted values are greater than their respective MTCA Method B Sub-Slab Soil Gas Screening Level

Abbreviations:

- = not applicable or not analyzed
- < = analyte was not detected at indicated reporting limit
- DUP = Duplicate sample
- ND = Not detected
- MDL = Method detection limit
- MTCA = Model Toxics Control Act Cleanup
- CUL = Cleanup Level
- USEPA = United States Environmental Protection Agency
- Average Barometric Pressures taken from Weather Underground (www.wunderground.com); averages for October 5, 2007 and December 6, 2007 in Burlington, Washington

Laboratory Qualifiers:

- <n = Not detected at or above the laboratory MDL
- J = Estimated value; result is \geq the MDL and < the Reported Detection Limit
- N = Identification of the analyte is based on presumptive evidence

Reference:

Ecology. 2018. Ecology Implementation Memorandum No. 18, Draft Petroleum Vapor Intrusion (VI): Updated Screening Levels, Cleanup Levels, and Sampling Considerations. August 7.

Table 6. Well Construction Details

Chevron Service Station No. 97502
640 Metcalf Street, Sedro-Woolley, Washington

Well ID	Installation Date	Decommission Date	Casing Diameter	Casing Elevation ¹	Top of Screen Depth	Bottom of Screen Depth	Total Well Depth	Min DTW	Max DTW
			inches	feet NAVD88	feet bgs	feet bgs	feet bgs	feet btoc	feet btoc
MW-1	2/6/1991	1992	4	--	4.5	14.5	15.0	--	--
MW-2	2/6/1991	1992	4	--	4.5	19.5	20.0	--	--
MW-3	2/7/1991	1992	4	--	4.0	19.0	19.5	--	--
MW-4	2/7/1991	NA	4	56.42	4.0	19.0	19.5	6.48	11.84
MW-5	2/7/1991	NA	4	56.53	4.5	19.5	20.0	6.41	11.22
MW-6	10/7/1991	NA	2	57.02	5.0	20.0	20.0	6.83	12.06
MW-7	10/7/1991	NA	2	58.93	5.0	20.0	20.0	8.85	13.02
MW-8	10/14/1991	NA	2	56.52	7.5	17.5	17.5	6.95	12.31
MW-9	10/14/1991	2001	2	--	6.0	16.0	16.0	7.70	11.69
MW-10	7/1/2002	NA	2	56.17	7.0	20.0	20.0	7.35	12.88
MW-11	7/1/2002	NA	2	56.27	7.0	20.0	20.0	7.30	12.79
MW-12	5/2/2006	NA	4	56.72	5.0	20.0	20.0	7.13	12.68
MW-13	5/2/2006	NA	4	56.67	5.0	20.0	20.0	7.14	13.00
MW-14	5/2/2006	NA	4	56.49	5.0	20.0	20.0	7.16	10.94
MW-15	9/20/2021	NA	2	56.71	5.0	20.0	20.0	--	--
MW-16	9/23/2021	NA	2	56.62	5.0	20.0	20.0	--	--
MW-17	9/20/2021	NA	2	56.54	5.0	20.0	20.0	--	--
MW-18	9/21/2021	NA	2	56.56	5.0	20.0	20.0	--	--
MW-19	9/21/2021	NA	2	56.72	5.0	20.0	20.0	--	--
MW-20	9/21/2021	NA	2	56.57	5.0	20.0	20.0	--	--
MW-21	9/20/2021	NA	2	55.95	5.0	20.0	20.0	--	--

Notes:

¹ Surveyed in 2021 by Otak, Inc. using NAD 83 (horizontal) and NAVD 88 (vertical).

² Sheen Observed

Shaded cells show decommissioned well.

bgs = below ground surface

MW = monitoring well; observation well used for DPE system monitoring and groundwater compliance monitoring

NA = not applicable

NAVD88 = North American Vertical Datum of 1988

Table 7. Current Soil Analytical Results
 Chevron Service Station No. 97502
 640 Metcalf Street, Sedro-Woolley, Washington
 Analytical results are presented in milligrams per kilogram (mg/kg)

Sample ID	Date	Depth	TPH	GRO	DRO	HO	DRO+HO	Benzene	Toluene	Ethylbenzene	Total Xylenes	Lead	MTBE
MTCA Method A CULs			--	30/100	2,000	2,000	2,000	0.03	7	6	9	250	0.1
MW-15	09/22/2021	6.5-7.5	--	<4.56	<5.49	<13.7	9.595	<0.00182	<0.00912	<0.00456	<0.0119	4.80	<0.00182
MW-15	09/21/2021	10.0-11.0	--	467	604	<12.9	610.45	<0.00161	0.00379 J	<0.00403	<0.0105	<0.646	<0.00161
MW-15	09/21/2021	14.0-15.0	--	1.73 J	<5.27	<13.2	9.235	0.00108 J	<0.00830	<0.00415	0.00242 J	0.514 J	<0.00166
MW-15	09/21/2021	19.0-20.0	--	2.06 J	2.23 J	7.60 J	9.83	0.0195	0.00339 J	0.0119	0.0149	4.32	<0.00191
MW-16	09/23/2021	4.0-5.0	--	3.31	79.2	60.2	139.4	0.00454	0.00916	0.00839	0.0454	6.55	<0.00120
MW-16	09/23/2021	14.0-15.0	--	4.51	5.94	11.0 J	16.94	<0.00171	<0.00854	<0.00427	0.00430 J	0.514 J	<0.00171
MW-16	09/23/2021	19.0-20.0	--	<5.00	8.68	104	112.68	0.022	<0.0100	<0.00500	<0.0130	5.08	<0.00200
MW-17	09/23/2021	8.0-9.0	--	<3.43	<4.70	<11.7	8.2	0.00124 J	0.00196 J	<0.00343	0.00290 J	0.886	<0.00137
MW-17	09/23/2021	11.5-13.0	--	<4.24	<5.27 J3 J6	<13.2	9.24	0.00275	0.029	0.0309	0.171	<0.658	<0.00170
MW-17	09/23/2021	15.0-16.0	--	3.45 J	1.80 J	<12.7	8.15	0.00304	0.0593	0.07	0.359	0.837	<0.00159
MW-17	09/23/2021	19.0-20.0	--	9.34	3.80 J	33.4	37.2	0.0166	0.015	0.206	0.781	4.67	<0.00202
MW-18	09/23/2021	8.0-9.0	--	<4.31	1.82 J	<13.3	8.47	<0.00172	<0.00862	<0.00431	<0.0112	2.25	<0.00172
MW-18	09/23/2021	19.0-20.0	--	3.92 J	<5.12	<12.8	8.96	0.00514	<0.00813	0.0366	0.265	1.34	<0.00163
MW-19	09/22/2021	7.5-8.5	--	<4.33	<5.28	<13.2	9.24	<0.00173	<0.00867	<0.00433	<0.0113	3.99	<0.00173
MW-19	09/22/2021	18.0-20.0	--	<4.83	2.21 J	10.8 J	13.01	0.00181 J J3	<0.00965 J3	<0.00483 J3	0.00647 J J3	6.17	<0.00193
MW-20	09/22/2021	7.0-8.0	--	<4.18	2.17 J	8.67 J	10.81	<0.00167	<0.00835	<0.00418	<0.0109	10.7	<0.00167
MW-20	09/22/2021	15.0-16.0	--	<3.92	10.5	28.1	38.6	<0.00157	<0.00784	<0.00392	<0.0102	2.85	<0.00157
MW-20	09/22/2021	19.0-20.0	--	<4.42	<5.35	<13.4	9.38	<0.00177	<0.00884	<0.00442	<0.0115	5.84	<0.00177
MW-21	09/20/2021	2.5-3.5	--	64.4	208	38.9	246.9	0.0254	0.0298	0.0108	0.0585	8.99	<0.00126
MW-21	09/21/2021	9.0-10.0	--	18.3	119	24.5	143.5	0.0021	0.00557 J	0.00257 J	0.0226	11.5	<0.00133
MW-21	09/21/2021	11.5-12.5	--	65.8	78.8	5.68 J	84.48	<0.00135	0.00306 J	0.00349	0.0105	4.02	<0.00135
MW-21	09/21/2021	14.0-15.0	--	2.19 J	<5.22	<13.0	9.11	<0.00162	<0.00810	<0.00405	0.00311 J	0.472 J	<0.00162
MW-21	09/21/2021	19.0-20.0	--	<4.36	3.15 J	9.27 J	12.42	<0.00174	<0.00872	<0.00436	0.00188 J	0.490 J	<0.00174
SB-1	09/23/2021	7.5-8.5	--	<4.54	<5.47	<13.7	9.59	0.00291	0.00439 J	<0.00454	0.00632 J	2.66	<0.00182
SB-1	09/23/2021	15.0-16.0	--	2.02 J	2.21 J	45.4	47.61	0.0651	0.0183	0.119	0.345	1.92	<0.00198
SB-1	09/23/2021	19.0-20.0	--	<5.10	<5.93	6.32 J	9.29	0.00447	0.00619 J	<0.00510	0.0112 J	1.13	<0.00204
SB-2	09/22/2021	6.0-7.0	--	<4.31	<5.33	<13.3	9.32	<0.00173	<0.00863	<0.00431	<0.0112	3.56	<0.00173
SB-2	09/22/2021	10.5-11.5	--	45.6	3.46 J	<13.0	9.96	<0.00165	0.00248 J	0.0136	0.00182 J	0.520 J	<0.00165
SB-2	09/22/2021	15.5-16.5	--	3.94 J	<5.20 J6	<13.0	9.1	0.00185	0.00465 J	0.00433	0.0175	3.49	<0.00164
SB-2	09/22/2021	18.0-19.0	--	4.68 J	<5.83	<14.6	10.22	0.00502	0.00298 J	0.0238	0.0554	6.69	<0.00200
SB-3	09/23/2021	7.5-8.5	--	<4.58	<5.49	<13.7	9.60	<0.00183	<0.00915	<0.00458	<0.0119	4.93	<0.00183
SB-3	09/23/2021	18.0-19.0	--	<4.64	2.57 J	15.4	17.97	0.021	0.00247 J	<0.00464	0.00236 J	4.61	<0.00186

Notes:

30/100 = GRO MTCA Method A CUL with benzene present is 30 mg/kg and without benzene present is 100 mg/kg

Grey text indicates soil that has been excavated

BOLD and highlighted values are greater than their respective MTCA Method A CUL

BOLD values are non-detect below the laboratory MDL, but the MDL is greater than the MTCA Method A CUL

Map of sample locations and laboratory results not available for non-detect analytes

Sample depth measured in feet below ground surface

Abbreviations:

ID = Identification

MW = Groundwater monitoring well

-- = Not applicable, not available, or not analyzed

MDL = Method detection limit

MTCA = Model Toxics Control Act Cleanup

CUL = Cleanup Level

USEPA = United States Environmental Protection Agency

Laboratory Qualifiers:

<n = Not detected at or above the laboratory MDL

J = The identification of the analyte is acceptable; the reported value is an estimate.

J3 = The associated batch QC was outside the established quality control range for precision.

J6 = The sample matrix interfered with the ability to make any accurate determination; spike value is low.

Analytical Methods:

Samples analyzed by USEPA Method 418.1

TPH = Total Petroleum Hydrocarbons

Samples analyzed by NWTPH-Gx

GRO = Total Petroleum Hydrocarbons as Gasoline Range Organics

Samples analyzed by NWTPH-Dx

DRO = Total Petroleum Hydrocarbons as Diesel Range Organics

HO = Total Petroleum Hydrocarbons as Heavy Oil Range Organics

Samples analyzed by USEPA Method 8260B

BTEX = benzene, toluene, ethylbenzene, and total xylenes

MTBE = Methyl tertiary butyl ether

EDC = 1,2-Dichloroethane

TCE = Trichloroethene

PCE = Tetrachloroethene

Samples analyzed by USEPA Method 6020

Lead

Samples analyzed by USEPA Method 8270C-SIM

Benzo(a)anthracene

Chrysene

Benzo(b)fluoranthene

Benzo(k)fluoranthene

Benzo(a)pyrene

Indeno(1,2,3-cd)pyrene

Dibenz(a,h)anthracene

Table 8. Current Groundwater Gauging Data and Select Analytical Results

Chevron Service Station No. 97502

640 Metcalf Street, Sedro-Woolley, Washington

Analytical results are presented in micrograms per liter (µg/L)

Well	Date	TOC	DTW	GWE	NAPL	GRO	DRO	HO	DRO+HO	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	Total Lead
MTCA Method A CULs						800/1,000	500	500	500	5	1,000	700	1,000	20	15
MW-4	9/28/2021	56.42	9.8	46.62	--	8,850	440	<250	565	<1.00	<1.00	<1.00	<3.00	<1.00	<6.00
MW-4	12/14/2021	56.42	7.39	49.03	--	<100	224	123 J	347	<1.00	<1.00	<1.00	0.402 J	<1.00	<6.00
MW-5	9/28/2021	56.53	10.25	46.28	--	539	305	<250	430	<1.00	<1.00	0.593 J	1.36 J	<1.00	<6.00
MW-5	12/16/2021	56.53	7.52	49.01	--	<100	74.9 J	104 J	178.9	<1.00	<1.00	<1.00	<3.00	<1.00	<6.00
MW-6	9/27/2021	57.02	10.3	46.72	--	<100	<200	<250	225	<1.00	<1.00	<1.00	<3.00	<1.00	<6.00
MW-6	12/14/2021	57.02	7.69	49.33	--	<100	71.7 J	<250	196.7	<1.00	<1.00	<1.00	0.21 J	<1.00	<6.00
MW-7	9/28/2021	58.93	12.73	46.20	--	8,990	565	<250	690	0.124 J	14.6	359 E	1,390 E	<1.00	<6.00
MW-7	12/15/2021	58.93	10.07	48.86	--	<100	95.7 J	185 J	280.7	<1.00	<1.00	<1.00	0.321 J	<1.00	<6.00
MW-8	9/28/2021	56.52	10.38	46.14	--	3,600	305	<250	430	<1.00	<1.00	1.11	0.574 J	<1.00	<6.00
MW-8	12/15/2021	56.52	7.83	48.69	--	7,270	228	119	347	<1.00	<1.00	<1.00	1.75 J	<1.00	<6.00
MW-10	9/29/2021	56.17	10.33	45.84	--	4,150 [4,150]	986 [1,000]	<250 [<250]	1,111 [1,125]	0.230 J [0.230 J]	9.90 [9.78]	19.7 [19.4]	87 [85.6]	<1.00	<6.00 [<6.00]
MW-10	12/15/2021	56.17	8.02	48.15	--	362	171 J	250	296	<1.00	1.54	2.16	1.89 J	<1.00	<6.00
MW-11	9/29/2021	56.27	10.78	45.49	--	4,190	543	<250	668	3.03	1.78	67.9	4.36	<1.00	<6.00
MW-11	12/15/2021	56.27	8.15	48.12	--	457	129 J	<250	254	0.896 J	0.343 J	5.67	0.609 J	<1.00	<6.00
MW-12	9/28/2021	56.72	10.28	46.44	--	143	190 J	<250	315	<1.00	<1.00	<1.00	<3.00	<1.00	<6.00
MW-12	12/16/2021	56.72	7.83	48.89	--	<100	83.6 J	101 J	184.6	<1.00	<1.00	<1.00	<3.00	<1.00	<6.00
MW-13	9/28/2021	56.67	10.73	45.94	--	4,940 [4,530]	730 [752]	<250 [<250]	855 [877]	0.147 J [0.194 J]	1.61 [1.56]	76.3 [73.4]	108 [122]	<1.00	-- [-]
MW-13	12/15/2021	56.67	7.89	48.78	--	<100 [<100]	76.8 J [70 J]	84.9 J [<250]	161.7 [195]	<1.00 [<1.00]	<1.00 [<1.00]	<1.00 [<1.00]	<3.00 [<3.00]	<1.00 [<1.00]	<6.00 [<6.00]
MW-14	09/28/2021	56.49	10.62	45.87	--	5,110	556	<250	681	0.394 J	7.98	454 E	837 E	<1.00	<6.00
MW-14	12/16/2021	56.49	8.36	48.13	--	7,390 J	686	114 J	800	0.413 J	9.46	337	1,240	<1.00	<6.00
MW-15	09/27/2021	56.71	10.09	46.62	--	219 B	396	<250	521	<1.00	<1.00	<1.00	<3.00	<1.00	<6.00
MW-15	12/14/2021	56.71	7.55	49.16	--	406 B	491	<250	616	<1.00	<1.00	<1.00	<3.00	<1.00	<6.00
MW-16	09/27/2021	56.62	9.75	46.87	--	54.7 B J	72.0 J	<250	197	<1.00	<1.00	<1.00	<3.00	<1.00	<6.00
MW-16	12/14/2021	56.62	7.38	49.24	--	<100	162 J	<250	287	<1.00	<1.00	<1.00	<3.00	<1.00	<6.00
MW-17	09/28/2021	56.54	10.34	46.20	--	<100	546	<250	671	0.124 J	125 E	152 E	616 E	<1.00	<6.00
MW-17	12/15/2021	56.54	7.99	48.55	--	2,800	411	<250	536	<1.00	40.9	68.9	382	<1.00	<6.00
MW-18	09/28/2021	56.56	15.1	41.46	--	367	161 J	<250	286	<1.00	<1.00	<1.00	<3.00	<1.00	3.80 J
MW-18	12/15/2021	56.56	8.18	48.38	--	427	174 J	<250	299	<1.00	<1.00	0.791 J	3.96	<1.00	<6.00
MW-19	12/15/2021	56.72	8.68	48.04	--	<100	<200	<250	225	<1.00	<1.00	<1.00	0.278 J	<1.00	<6.00
MW-20	12/15/2021	56.57	9.75	46.82	--	<100	<200	<250	225	<1.00	<1.00	<1.00	<3.00	<1.00	<6.00
MW-21	09/28/2021	55.95	9.18	46.77	--	233	244	<250	369	<1.00	<1.00	2.30	12.9	<1.00	4.16 J
MW-21	12/16/2021	55.95	6.72	49.23	--	<100	89.7 J	178 J	267.7	<1.00	<1.00	<1.00	<3.00	<1.00	<6.00

Notes:

Surveyed in 2021 by Otak, Inc. using NAD 83 (horizontal) and NAVD 88 (vertical).

800/1,000 = GRO MTCA Method A CUL with benzene present is 800 µg/L and without is 1,000 µg/L

BOLD and highlighted values are greater than their respective MTCA Method A CUL

Abbreviations:

DTW = Depth to water in feet below TOC

GWE = Groundwater elevation in feet relative to NAVD 88

MW = Groundwater monitoring well

TOC = Top of casing in feet above NAVD 88

NAPL = Non-aqueous phase liquid thickness in feet

[21.2] = Blind duplicate sample results

-- = Not applicable, not available, or not analyzed

MDL = Method detection limit

MTCA = Model Toxics Control Act Cleanup

CUL = Cleanup Level

NAVD 88 = North American Vertical Datum of 1988

USEPA = United States Environmental Protection Agency

Table 8. Current Groundwater Gauging Data and Select Analytical Results

Chevron Service Station No. 97502

640 Metcalf Street, Sedro-Woolley, Washington

Analytical results are presented in micrograms per liter (µg/L)

Well	Date	TOC	DTW	GWE	NAPL	GRO	DRO	HO	DRO+HO	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	Total Lead
MTCA Method A CULs						800/1,000	500	500	500	5	1,000	700	1,000	20	15

Laboratory Qualifiers:

<n = Not detected at or above the laboratory MDL

J = Estimated value; result is ≥ the MDL and < the Reported Detection Limit

E = The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).

Analytical Methods:

Samples analyzed by NWTPH-Gx

GRO = Total Petroleum Hydrocarbons as Gasoline Range Organics

Samples analyzed by NWTPH-Dx

DRO = Total Petroleum Hydrocarbons as Diesel Range Organics

HO = Total Petroleum Hydrocarbons as Heavy Oil Range Organics

Samples analyzed by USEPA Method 8260D

BTEX = benzene, toluene, ethylbenzene, and total xylenes

Samples analyzed by USEPA Method 6010D

Total lead

Table 9. Current Groundwater Analytical Results - cPAHs

Chevron Service Station No. 97502
 640 Metcalf Street, Sedro-Woolley, Washington
 Analytical results are presented in micrograms per liter (µg/L)

Well	Date	Benzo(a)-anthracene	Chrysene	Benzo(b)-fluoranthene	Benzo(k)-fluoranthene	Benzo(a)-pyrene	Indeno(1,2,3-cd)-pyrene	Dibenz(a,h)-anthracene	Total cPAHs	Naphthalene	1-Methylnaphthalene	2-Methylnaphthalene	Total Naphthalenes
MTCA Method A CULs		--	--	--	--	0.1	--	--	0.1	--	--	--	160
MW-7	9/28/2021	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0378	105	16.9	19.7	141.6
MW-7	12/15/2021	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0378	<0.25	<0.25	<0.25	0.375

Notes:

Total cPAHs and Naphthalenes are derived according to MTCA Cleanup Regulation Table 740-1 [d]

Abbreviations:

cPAH = Carcinogenic Polycyclic Aromatic Hydrocarbon
 MW = Groundwater monitoring well
 [21.2] = Blind duplicate sample results
 -- = Not applicable, not available, or not analyzed
 MDL = Method detection limit
 MTCA = Model Toxics Control Act Cleanup
 CUL = Cleanup Level
 USEPA = United States Environmental Protection Agency

Laboratory Qualifiers:

<n = Not detected at or above the laboratory MDL
 J = Estimated value; result is ≥ the MDL and < the Reported Detection Limit

Analytical Methods:

Samples analyzed by USEPA Method 8270E-SIM
 Benzo(a)anthracene
 Chrysene
 Benzo(b)fluoranthene
 Benzo(k)fluoranthene
 Benzo(a)pyrene
 Indeno(1,2,3-cd)pyrene
 Dibenz(a,h)anthracene
 Naphthalene
 1-Methylnaphthalene
 2-Methylnaphthalene

Table 10. Current Soil Vapor Data
 Chevron Service Station No. 97502
 640 Metcalf Street, Sedro-Woolley, Washington
 Analytical results are presented in micrograms per liter ($\mu\text{g}/\text{m}^3$)

Sample ID	Date	Helium (%)	MTBE ($\mu\text{g}/\text{m}^3$)	Benzene ($\mu\text{g}/\text{m}^3$)	Toluene ($\mu\text{g}/\text{m}^3$)	Ethylbenzene ($\mu\text{g}/\text{m}^3$)	Total Xylenes ($\mu\text{g}/\text{m}^3$)	Napthalene ($\mu\text{g}/\text{m}^3$)	APH EC5-8 Aliphatics ($\mu\text{g}/\text{m}^3$)	APH EC9-12 Aliphatics ($\mu\text{g}/\text{m}^3$)	APH EC9-10 Aromatics ($\mu\text{g}/\text{m}^3$)
MTCA Method B Sub-Slab Soil Gas Screening Level			--	11.00	76,000	15,000	1,500	2.5	--	--	--
VP-1-5	10/7/2021	<0.6	<9.6	<1.7	<100	<2.3	<6.9	<1.4	<400	460	<130
VP-1-7	10/7/2021	<0.6	<11	<1.9	<110	<2.6	<7.7	<1.5	<440	420	<150
VP-2-7	10/7/2021	<0.6	<11	<1.9	<110	<2.6	<7.7	<1.5	<440	390	<150
Lab Dup 1 (VP-2-7)	10/7/2021	<0.6	<9.9	<1.8	<100	<2.4	<7.2	<1.4	<410	340	<150

Notes:

BOLD and highlighted values are greater than their respective MTCA Method B Sub-Slab Soil Gas Screening Level

Abbreviations:

-- = not applicable or not analyzed
 < = analyte was not detected at indicated reporting limit
 DUP = Duplicate sample
 ND = Not detected
 MDL = Method detection limit
 MTCA = Model Toxics Control Act Cleanup
 CUL = Cleanup Level
 USEPA = United States Environmental Protection Agency
 Average Barometric Pressures taken from Weather Underground (www.wunderground.com); averages for October 5, 2007 and December 6, 2007 in Burlington, Washington

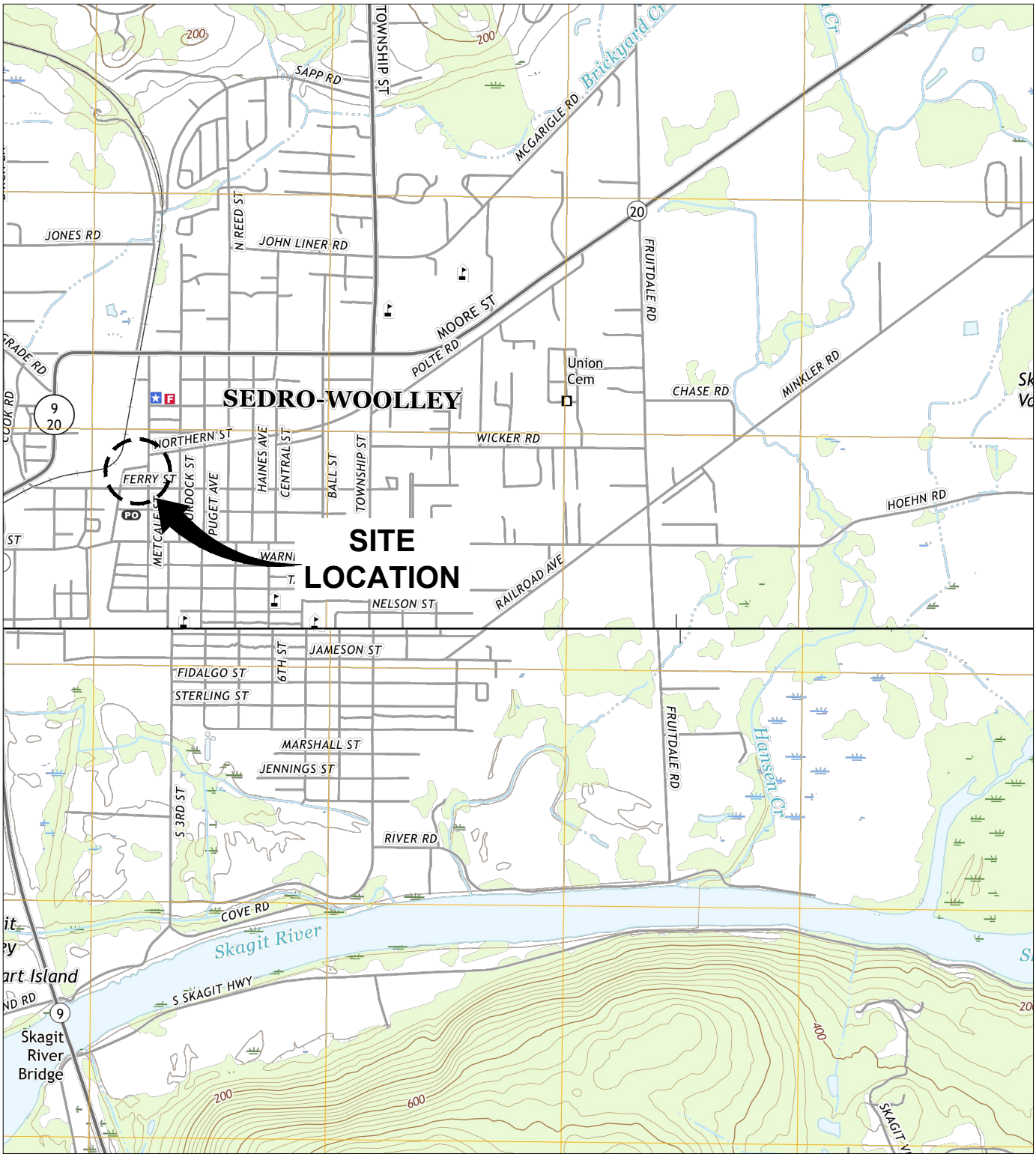
Laboratory Qualifiers:

<n = Not detected at or above the laboratory MDL
 J = Estimated value; result is \geq the MDL and < the Reported Detection Limit
 N = Identification of the analyte is based on presumptive evidence

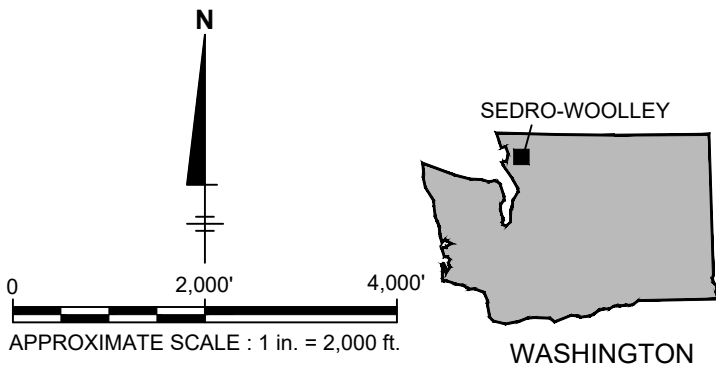
Reference:

Ecology. 2018. Ecology Implementation Memorandum No. 18, Draft Petroleum Vapor Intrusion (VI): Updated Screening Levels, Cleanup Levels, and Sampling Considerations. August 7.

Figures

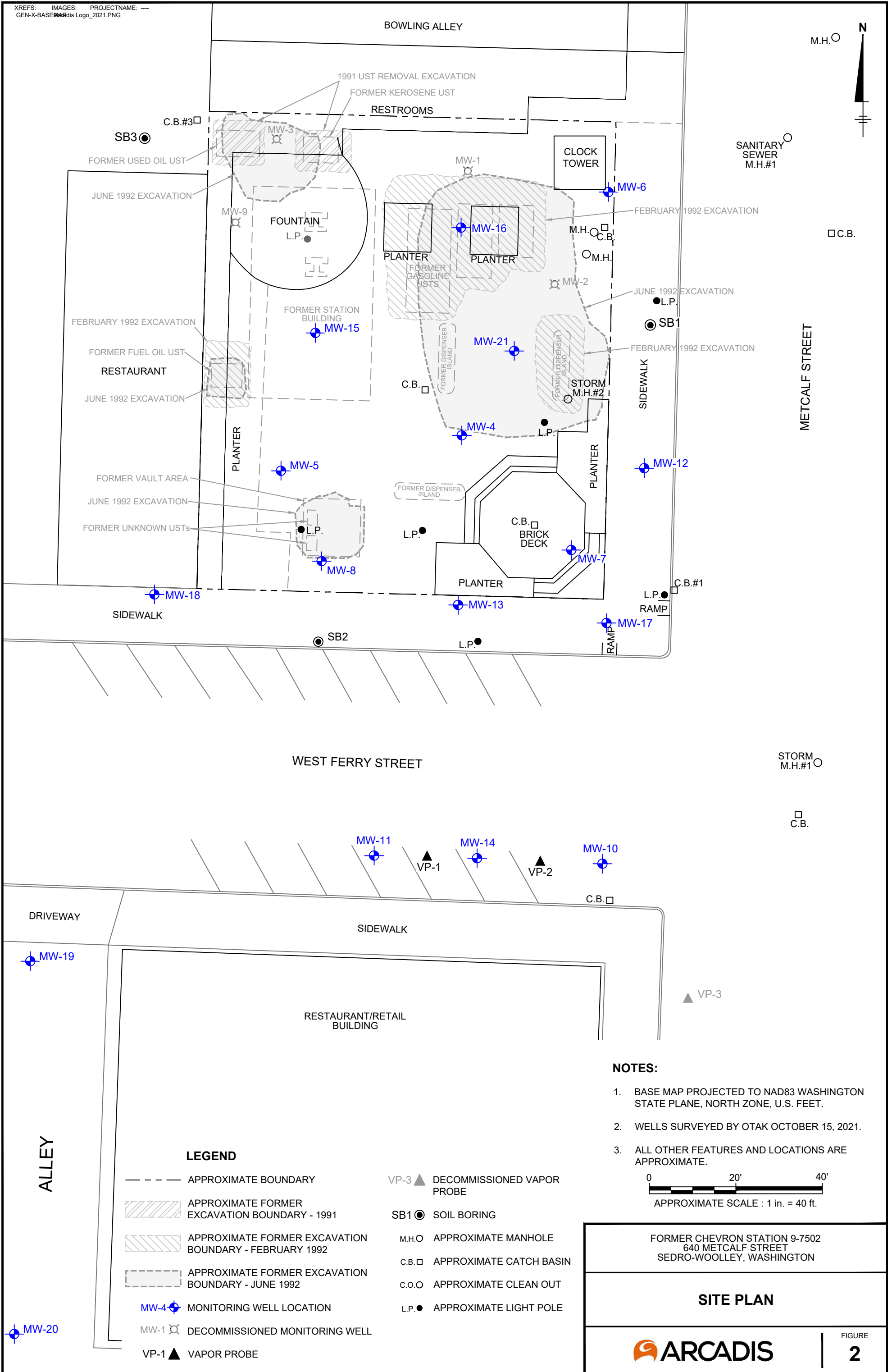


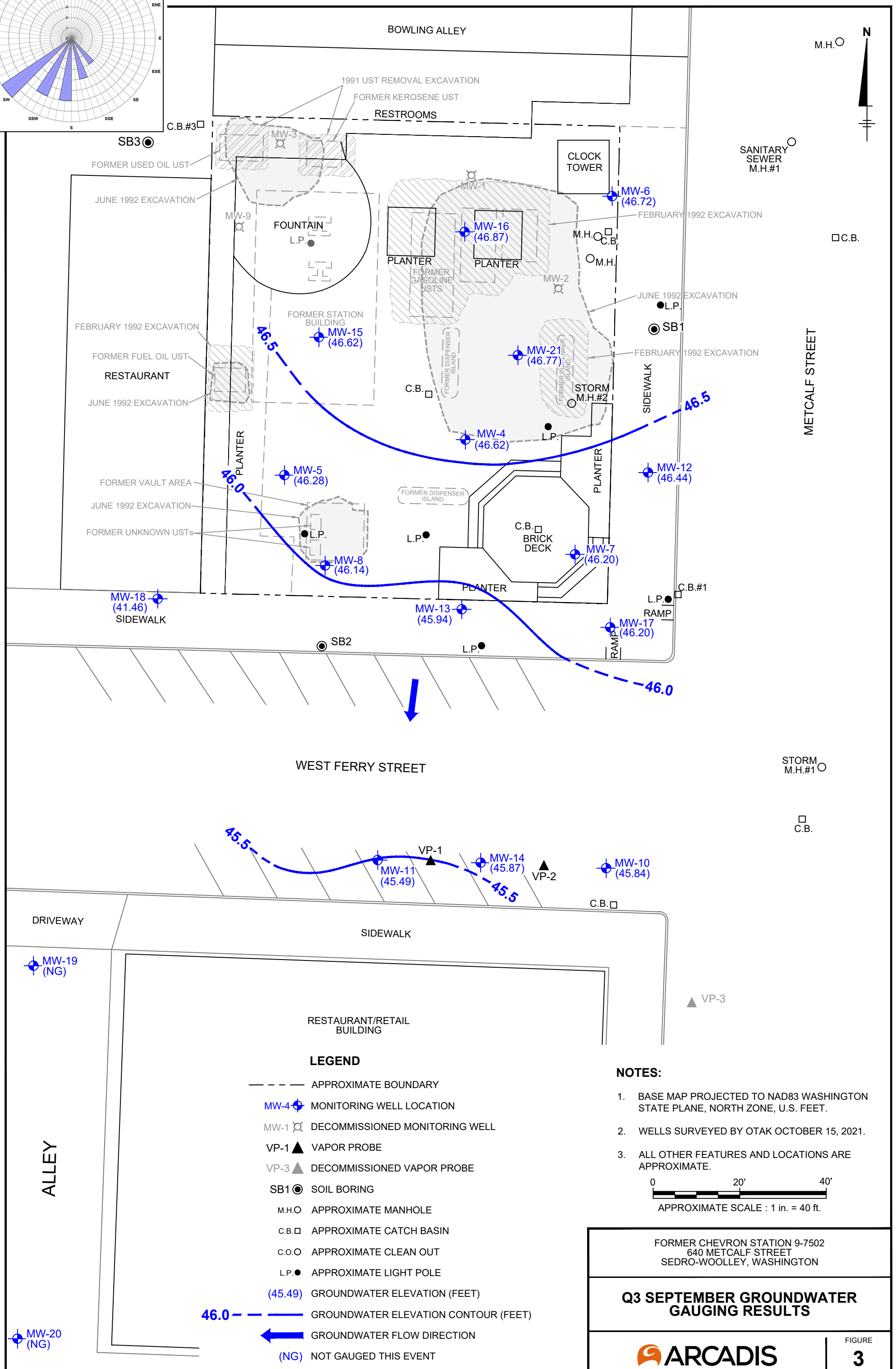
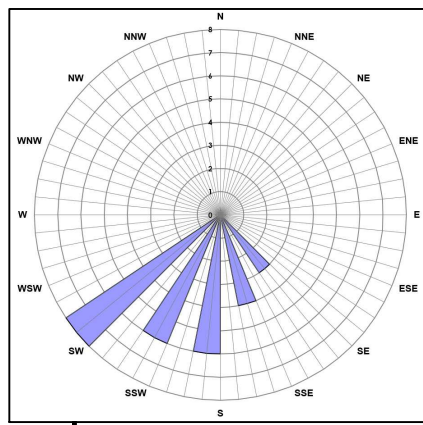
REFERENCE: BASE MAP USGS 7.5. MIN. TOPO. QUAD., NEWPORT BEACH, OE S, CA, PHOTOGRAPHED 2018

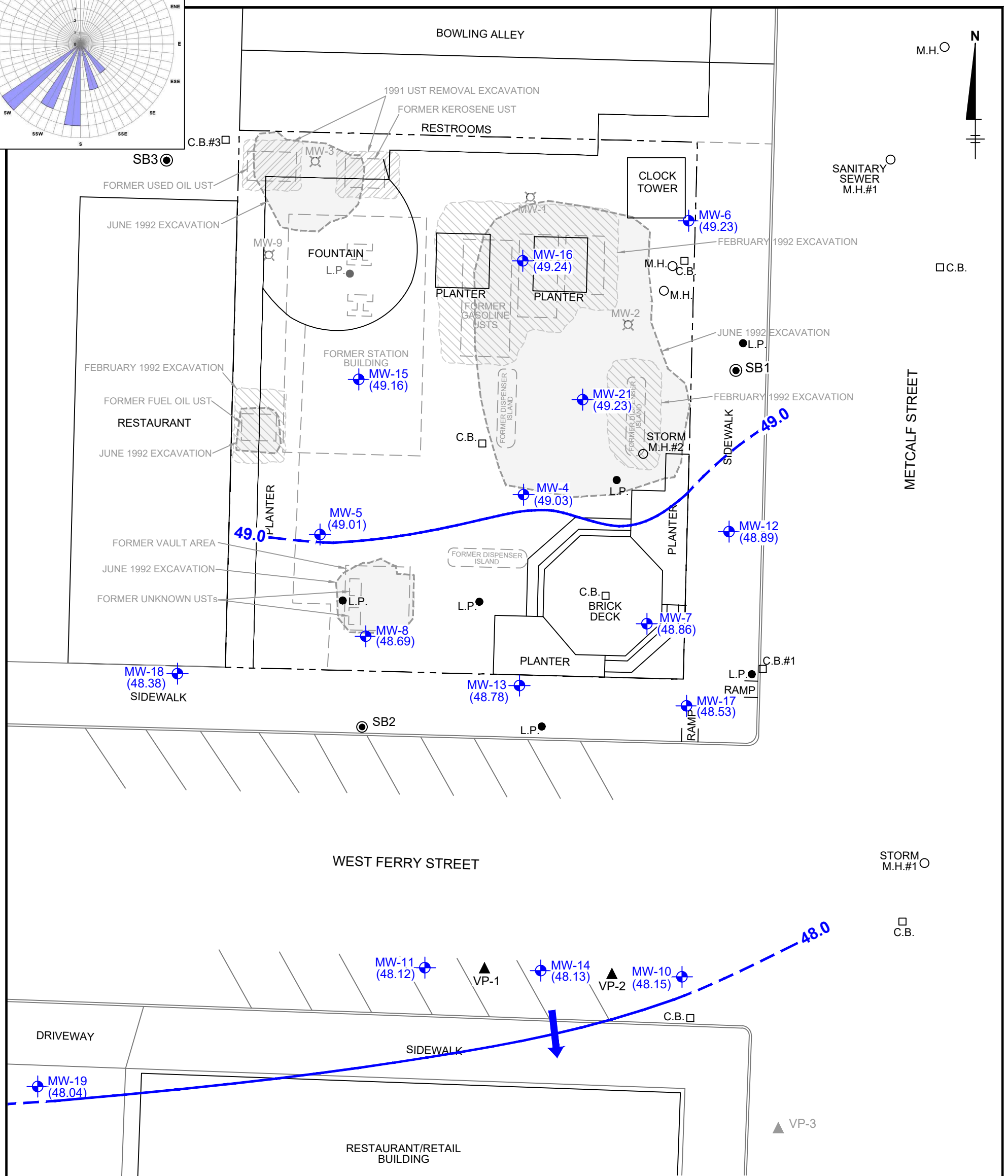
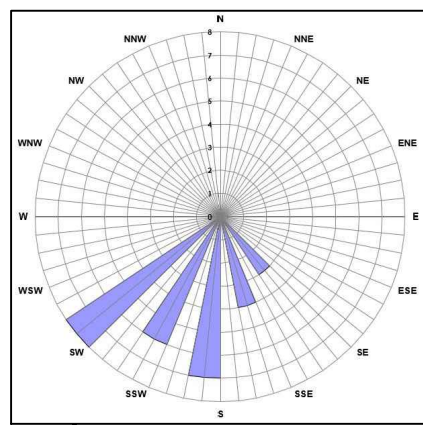


FORMER CHEVRON STATION 9-7502 640 METCALF STREET SEDRO-WOOLLEY, WASHINGTON	
SITE LOCATION MAP	
	FIGURE 1

XREFS: IMAGES: PROJECTNAME: ---
 GEN-X-BASE\Arcadis Logo_2021.PNG





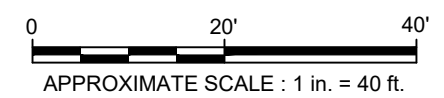


LEGEND

- APPROXIMATE BOUNDARY
- MW-4 MONITORING WELL LOCATION
- MW-1 DECOMMISSIONED MONITORING WELL
- VP-1 VAPOR PROBE
- VP-3 DECOMMISSIONED VAPOR PROBE
- SB1 SOIL BORING
- M.H.O APPROXIMATE MANHOLE
- C.B. APPROXIMATE CATCH BASIN
- C.O.O APPROXIMATE CLEAN OUT
- L.P. APPROXIMATE LIGHT POLE
- (48.12) GROUNDWATER ELEVATION (FEET)
- 48.0 GROUNDWATER ELEVATION CONTOUR (FEET)
- GROUNDWATER FLOW DIRECTION

NOTES:

1. BASE MAP PROJECTED TO NAD83 WASHINGTON STATE PLANE, NORTH ZONE, U.S. FEET.
2. WELLS SURVEYED BY OTAK OCTOBER 15, 2021.
3. ALL OTHER FEATURES AND LOCATIONS ARE APPROXIMATE.

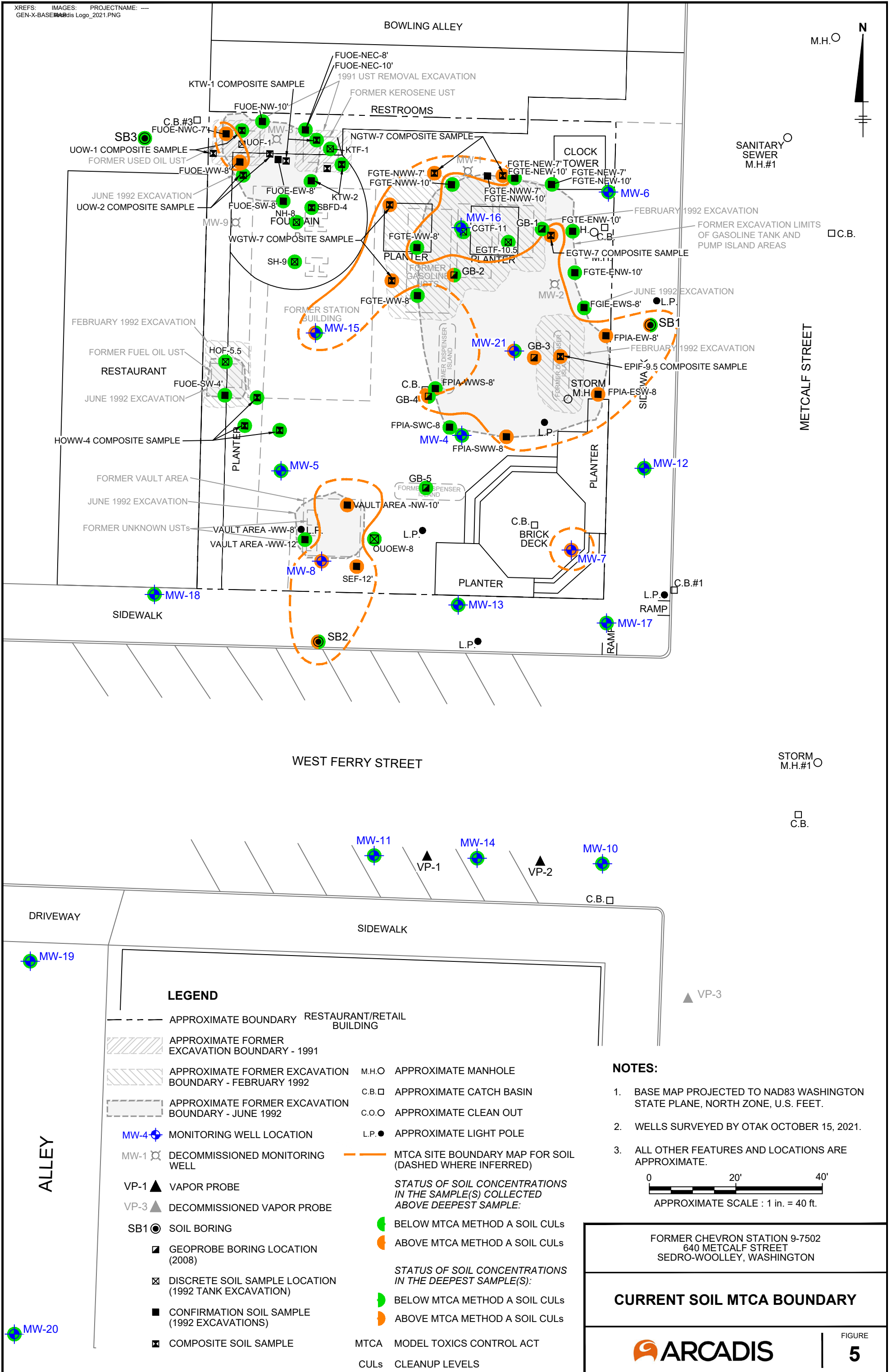


FORMER CHEVRON STATION 9-7502
640 METCALF STREET
SEDRO-WOOLLEY, WASHINGTON

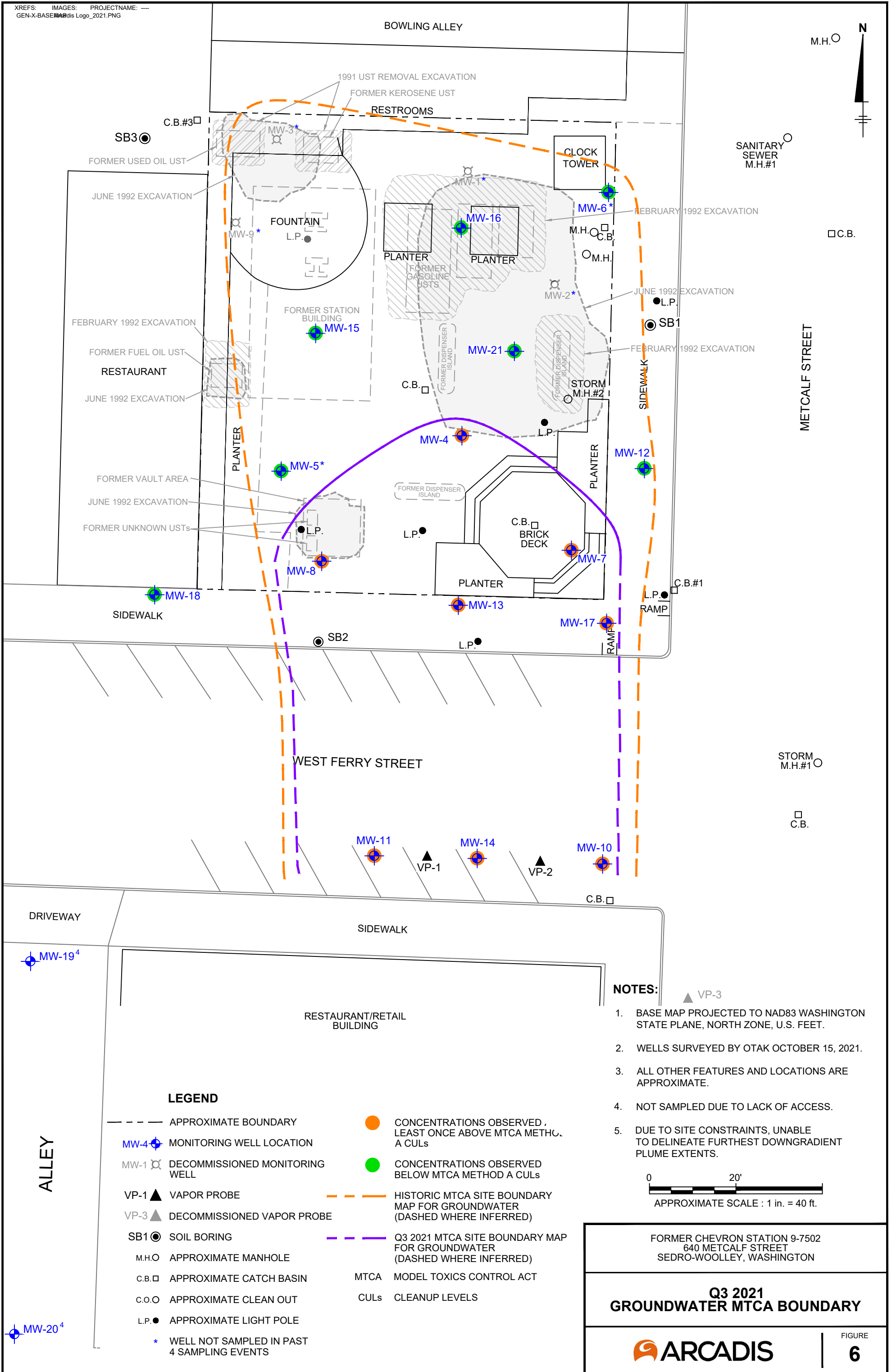
Q4 DECEMBER GROUNDWATER GAUGING RESULTS

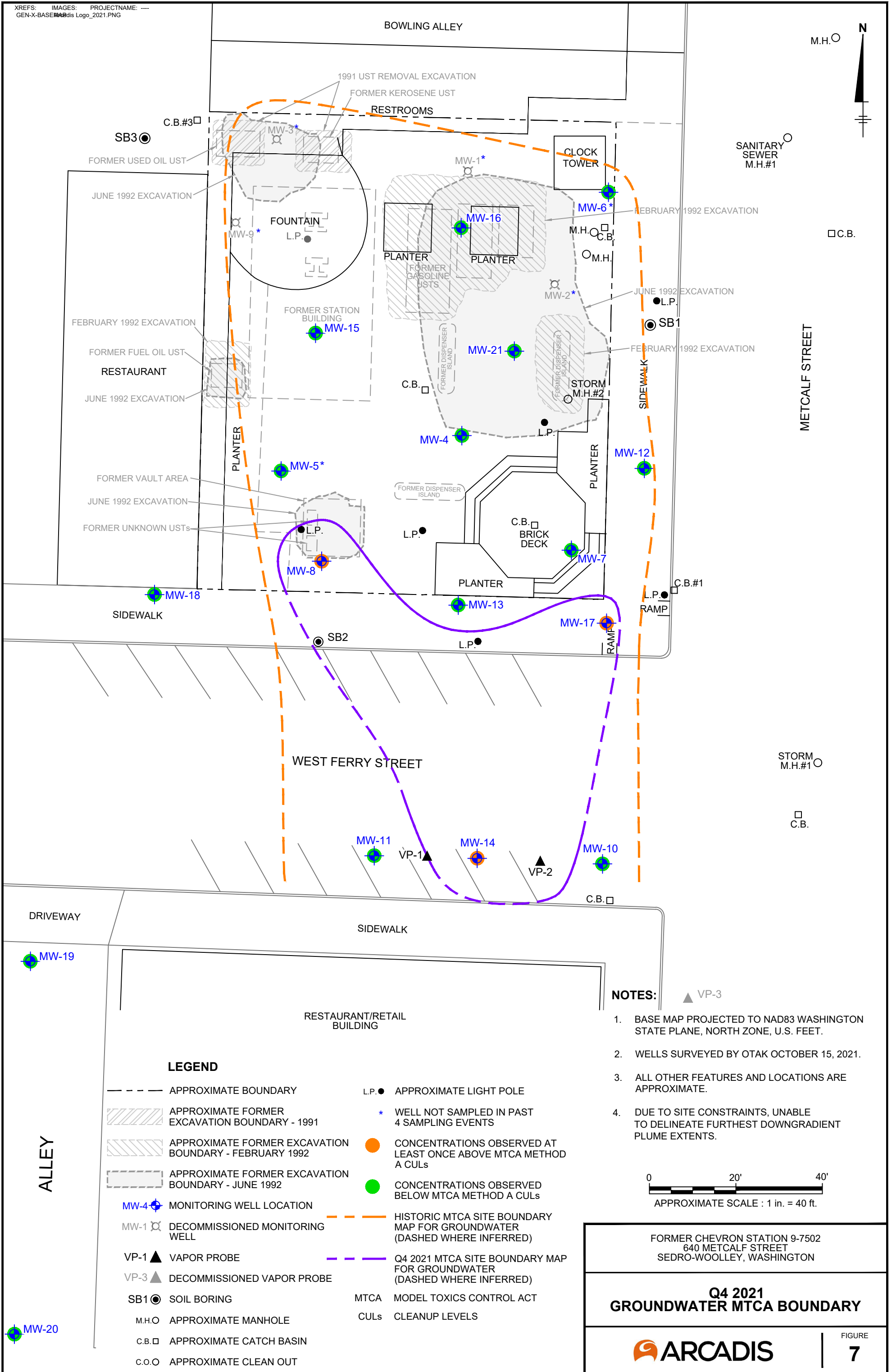
ARCADIS

FIGURE 4



XREFS: IMAGES: PROJECTNAME: ---
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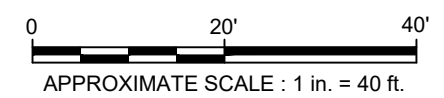




LEGEND

---	APPROXIMATE BOUNDARY	L.P. ●	APPROXIMATE LIGHT POLE
▨	APPROXIMATE FORMER EXCAVATION BOUNDARY - 1991	* ●	WELL NOT SAMPLED IN PAST 4 SAMPLING EVENTS
▨	APPROXIMATE FORMER EXCAVATION BOUNDARY - FEBRUARY 1992	●	CONCENTRATIONS OBSERVED AT LEAST ONCE ABOVE MTCA METHOD A CULs
▨	APPROXIMATE FORMER EXCAVATION BOUNDARY - JUNE 1992	●	CONCENTRATIONS OBSERVED BELOW MTCA METHOD A CULs
●	MW-4 MONITORING WELL LOCATION	---	HISTORIC MTCA SITE BOUNDARY MAP FOR GROUNDWATER (DASHED WHERE INFERRED)
○	MW-1 DECOMMISSIONED MONITORING WELL	---	Q4 2021 MTCA SITE BOUNDARY MAP FOR GROUNDWATER (DASHED WHERE INFERRED)
▲	VP-1 VAPOR PROBE	MTCA	MODEL TOXICS CONTROL ACT
▲	VP-3 DECOMMISSIONED VAPOR PROBE	CULs	CLEANUP LEVELS
●	SB1 SOIL BORING		
○	M.H.O APPROXIMATE MANHOLE		
□	C.B. APPROXIMATE CATCH BASIN		
○	C.O.O APPROXIMATE CLEAN OUT		

- NOTES:**
1. BASE MAP PROJECTED TO NAD83 WASHINGTON STATE PLANE, NORTH ZONE, U.S. FEET.
 2. WELLS SURVEYED BY OTAK OCTOBER 15, 2021.
 3. ALL OTHER FEATURES AND LOCATIONS ARE APPROXIMATE.
 4. DUE TO SITE CONSTRAINTS, UNABLE TO DELINEATE FURTHEST DOWNGRADE PLUME EXTENTS.

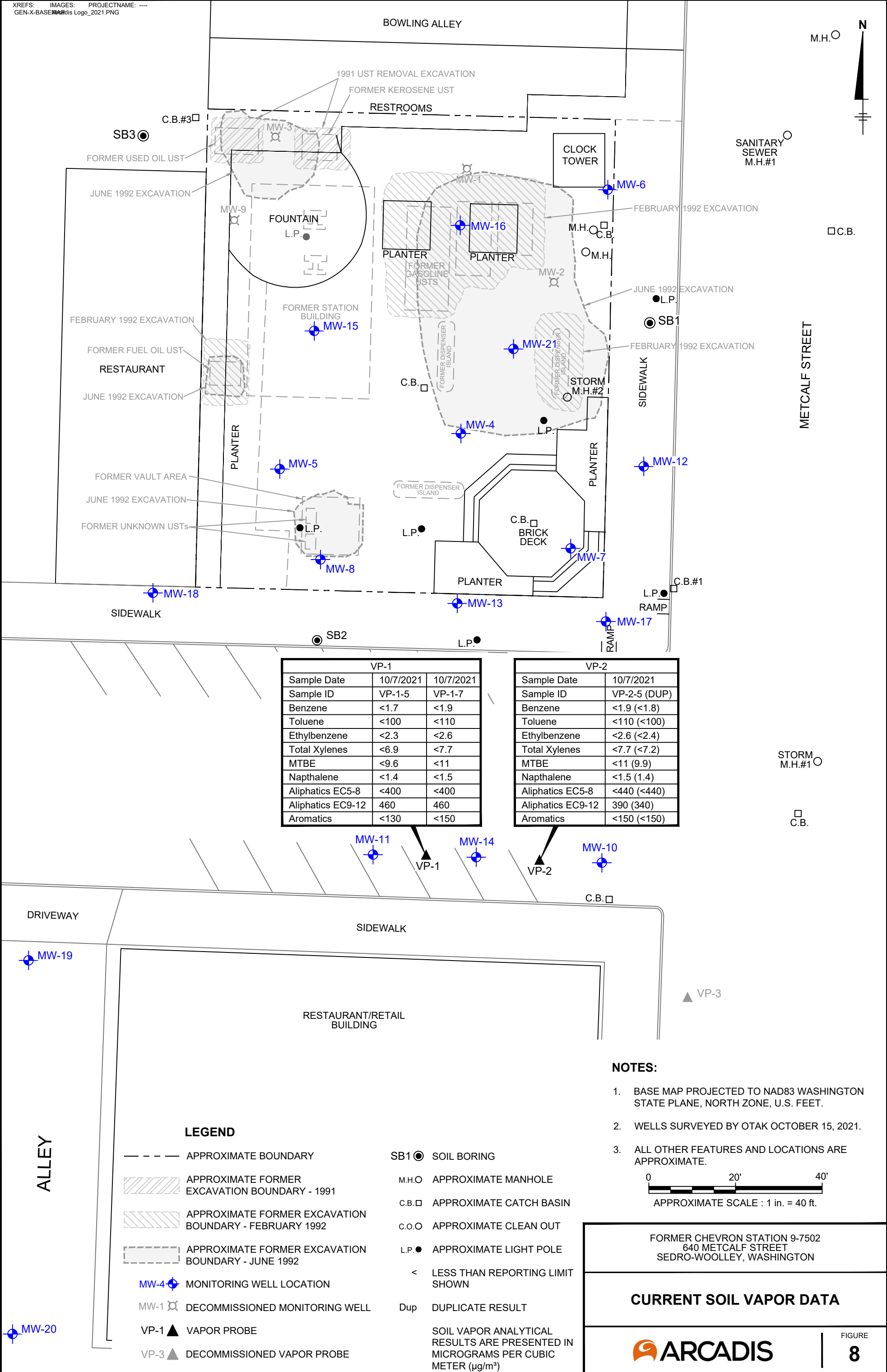


FORMER CHEVRON STATION 9-7502
640 METCALF STREET
SEDRO-WOOLLEY, WASHINGTON

**Q4 2021
GROUNDWATER MTCA BOUNDARY**

ARCADIS | FIGURE 7

XREFS: IMAGES: PROJECTNAME: ---
 GEN-X-BASE\Arcadis Logo_2021.PNG



VP-1		
Sample Date	10/7/2021	10/7/2021
Sample ID	VP-1-5	VP-1-7
Benzene	<1.7	<1.9
Toluene	<100	<110
Ethylbenzene	<2.3	<2.6
Total Xylenes	<6.9	<7.7
MTBE	<9.6	<11
Napthalene	<1.4	<1.5
Aliphatics EC5-8	<400	<400
Aliphatics EC9-12	460	460
Aromatics	<130	<150

VP-2	
Sample Date	10/7/2021
Sample ID	VP-2-5 (DUP)
Benzene	<1.9 (<1.8)
Toluene	<110 (<100)
Ethylbenzene	<2.6 (<2.4)
Total Xylenes	<7.7 (<7.2)
MTBE	<11 (9.9)
Napthalene	<1.5 (1.4)
Aliphatics EC5-8	<440 (<440)
Aliphatics EC9-12	390 (340)
Aromatics	<150 (<150)

NOTES:

1. BASE MAP PROJECTED TO NAD83 WASHINGTON STATE PLANE, NORTH ZONE, U.S. FEET.
2. WELLS SURVEYED BY OTAK OCTOBER 15, 2021.
3. ALL OTHER FEATURES AND LOCATIONS ARE APPROXIMATE.



LEGEND

- APPROXIMATE BOUNDARY
- [Hatched Box] APPROXIMATE FORMER EXCAVATION BOUNDARY - 1991
- [Hatched Box] APPROXIMATE FORMER EXCAVATION BOUNDARY - FEBRUARY 1992
- [Hatched Box] APPROXIMATE FORMER EXCAVATION BOUNDARY - JUNE 1992
- MW-4 [Blue Circle with Crosshair] MONITORING WELL LOCATION
- MW-1 [Circle with X] DECOMMISSIONED MONITORING WELL
- VP-1 [Black Triangle] VAPOR PROBE
- VP-3 [Grey Triangle] DECOMMISSIONED VAPOR PROBE
- SB1 [Black Circle] SOIL BORING
- M.H.O [Circle] APPROXIMATE MANHOLE
- C.B. [Square] APPROXIMATE CATCH BASIN
- C.O. [Circle] APPROXIMATE CLEAN OUT
- L.P. [Black Dot] APPROXIMATE LIGHT POLE
- < LESS THAN REPORTING LIMIT SHOWN
- Dup DUPLICATE RESULT

FORMER CHEVRON STATION 9-7502
 640 METCALF STREET
 SEDRO-WOOLLEY, WASHINGTON

CURRENT SOIL VAPOR DATA

ARCADIS

FIGURE **8**

SOIL VAPOR ANALYTICAL RESULTS ARE PRESENTED IN MICROGRAMS PER CUBIC METER ($\mu\text{g}/\text{m}^3$)

Appendix A

Property Details and Ecology Communications

Parcel Map - 634 Metcalf Street



April 13, 2021

1:1,128

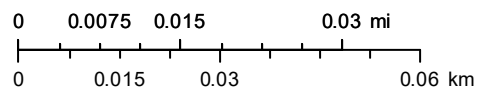
Legend

Tax Parcel Numbers

* Land Accounts

□ Tax Parcels

□ 634 Metcalf Street



Data Accuracy Warning: All GIS data was created from available public records and existing map sources. Map features have been adjusted to achieve a best-fit registration. While great care was taken in this process, maps from different sources rarely agree as to the precise location of geographic features. Map discrepancies can be as great as 300 feet.

Details for Parcel: P77454



Jurisdiction: SEDRO-WOOLLEY

Zoning Designation: Please contact the city of **SEDRO-WOOLLEY** for SEDRO-WOOLLEY zoning information.

[Excise Affidavits](#) *Document scans of excise affidavits*

Parcel Number P77454	XrefID 4177-002-013-0000	Quarter 24	Section 35	Township 04	Range 04
Owner Information CITY OF SEDRO WOOLLEY 325 METCALF ST SEDRO WOOLLEY, WA 98284	Site Address(es) 640 METCALF STREET Sedro Woolley, WA (<i>Jurisdiction, State</i>) Zip Code Lookup Site Address Information	Map Links Open in iMap Assessor's Parcel Map: PDF DWF			
Current Legal Description Abbreviation Definitions N 30 FEET OF LOTS 11 TO 13, BLOCK 2, TOWN OF WOOLLEY					

2020 Values for 2021 Taxes* [Exemption](#)

Building Market Value	\$112,300.00
Land Market Value	+\$37,100.00
Total Market Value	\$149,400.00
Assessed Value	\$149,400.00
Taxable Value	\$.00

Sale Information

Deed Type	QUIT CLAIM DEED
Sale Date	1997-06-24
Sale Price	\$.00
Sale requires NRL disclosure (more info)	

2021 Property Tax Summary

2021 Taxes will be available after 2/15/2021
Use the Taxes link above for 2020 taxes

* Effective date of value is January 1 of the assessment year (2020)

[Legal Description at time of Assessment](#)

*Assessment Use Code	(720) PUBLIC ASSEMBLY	WAC 458-53-030	
Neighborhood	(6E1PBLDG) ALL COUNTY EXEMPT PUBLIC BUILDING		
Levy Code	0935	Fire District	
School District	SD101	Exemptions	City Owned
Utilities		Acres	0.06
Improvement 1 Attributes Summary			
Building Style	COMMERCIAL REAL PROPERTY		
Year Built	2002	Foundation	
Above Grade Living Area	758 Square Feet	Exterior Walls	
Finished Basement		Roof Covering	
*Total Living Area	758 Square Feet	Heat/Air Conditioning	
Unfinished Basement		Fireplace	
*Total Garage Area		Bedrooms	
Bathrooms			
For additional information on individual segments see Improvements tab			

* Assessment Use Code is for assessment administration purposes and has no relation to zoning or allowable land use.

* Total living area includes above grade living area and finished basement area.

* Garage square footage includes all garage areas; basement garages, attached garages, detached garages, etc.

Assessment data for improvements is based on exterior inspections. Please contact the Assessor's office if the information does not accurately reflect the interior characteristics.

Details for Parcel: P77455



Jurisdiction: SEDRO-WOOLLEY

Zoning Designation: Please contact the city of **SEDRO-WOOLLEY** for SEDRO-WOOLLEY zoning information.

[Recorded Documents](#) Documents scanned and recorded by the Auditor's office

[Excise Affidavits](#) Document scans of excise affidavits

Parcel Number P77455	XrefID 4177-002-013-0109	Quarter 24	Section 35	Township 04	Range 04
Owner Information CITY OF SEDRO WOOLLEY 325 METCALF ST SEDRO WOOLLEY, WA 98284	Site Address(es) 640 METCALF STREET Sedro Woolley, WA (Jurisdiction, State) Zip Code Lookup Site Address Information	Map Links Open in iMap Assessor's Parcel Map: PDF DWF			
Current Legal Description Abbreviation Definitions TOWN OF WOOLLEY S 33FT OF N 63FT LOTS 11 TO 13 BLK 2					

2020 Values for 2021 Taxes* [Exemption](#)

Building Market Value	\$,00
Land Market Value	+\$40,800.00
Total Market Value	\$40,800.00
Assessed Value	\$40,800.00
Taxable Value	\$,00

Sale Information

Deed Type	QUIT CLAIM DEED
Sale Date	2000-05-31
Sale Price	\$29,052.00
Sale requires NRL disclosure (more info)	

2021 Property Tax Summary

2021 Taxes will be available after 2/15/2021
Use the Taxes link above for 2020 taxes

* Effective date of value is January 1 of the assessment year (2020)

[Legal Description at time of Assessment](#)

*Assessment Use Code	(720) PUBLIC ASSEMBLY	WAC 458-53-030	
Neighborhood	(6EL3PLND) ALL COUNTY EXEMPT PUBLIC LAND		
Levy Code	0935	Fire District	
School District	SD101	Exemptions	City Owned
Utilities	*SEW, WTR-P	Acres	0.07
Improvement 1 Attributes Summary			
Building Style	COMMERCIAL REAL PROPERTY		
Year Built		Foundation	
Above Grade Living Area		Exterior Walls	
Finished Basement		Roof Covering	
*Total Living Area		Heat/Air Conditioning	
Unfinished Basement		Fireplace	
*Total Garage Area		Bedrooms	
Bathrooms			
For additional information on individual segments see Improvements tab			

* Assessment Use Code is for assessment administration purposes and has no relation to zoning or allowable land use.

* Total living area includes above grade living area and finished basement area.

* Garage square footage includes all garage areas; basement garages, attached garages, detached garages, etc.

Assessment data for improvements is based on exterior inspections. Please contact the Assessor's office if the information does not accurately reflect the interior characteristics.

Details for Parcel: P77456



Jurisdiction: SEDRO-WOOLLEY

Zoning Designation: Please contact the city of **SEDRO-WOOLLEY** for SEDRO-WOOLLEY zoning information.

[Excise Affidavits](#) *Document scans of excise affidavits*

Parcel Number P77456	XrefID 4177-002-013-0208	Quarter 24	Section 35	Township 04	Range 04
Owner Information CITY OF SEDRO WOOLLEY 325 METCALF ST SEDRO WOOLLEY, WA 98284	Site Address(es) 640 METCALF STREET Sedro Woolley, WA (<i>Jurisdiction, State</i>) Zip Code Lookup Site Address Information	Map Links Open in iMap Assessor's Parcel Map: PDF DWF			
Current Legal Description Abbreviation Definitions S 37 FEET OF LOTS 11 TO 13, BLOCK 2, TOWN OF WOOLLEY					

2020 Values for 2021 Taxes* [Exemption](#)

Building Market Value	\$.00
Land Market Value	+\$45,800.00
Total Market Value	\$45,800.00
Assessed Value	\$45,800.00
Taxable Value	\$.00

Sale Information

Deed Type	QUIT CLAIM DEED
Sale Date	1997-06-24
Sale Price	\$.00
Sale requires NRL disclosure (more info)	

2021 Property Tax Summary

2021 Taxes will be available after 2/15/2021
.
Use the Taxes link above for 2020 taxes

* Effective date of value is January 1 of the assessment year (2020)

[Legal Description at time of Assessment](#)

*Assessment Use Code	(720) PUBLIC ASSEMBLY	WAC 458-53-030	
Neighborhood	(6E1PBLDG) ALL COUNTY EXEMPT PUBLIC BUILDING		
Levy Code	0935	Fire District	
School District	SD101	Exemptions	City Owned
Utilities		Acres	0.08
Improvement 1 Attributes Summary			
Building Style	COMMERCIAL REAL PROPERTY		
Year Built		Foundation	
Above Grade Living Area		Exterior Walls	
Finished Basement		Roof Covering	
*Total Living Area		Heat/Air Conditioning	
Unfinished Basement		Fireplace	
*Total Garage Area		Bedrooms	
Bathrooms			
For additional information on individual segments see Improvements tab			

* Assessment Use Code is for assessment administration purposes and has no relation to zoning or allowable land use.

* Total living area includes above grade living area and finished basement area.

* Garage square footage includes all garage areas; basement garages, attached garages, detached garages, etc.

Assessment data for improvements is based on exterior inspections. Please contact the Assessor's office if the information does not accurately reflect the interior characteristics.

Hamilton, Ada

From: Guenther, John (ECY) <jgue461@ECY.WA.GOV>
Sent: Monday, May 24, 2021 9:15 AM
To: Hamilton, Ada
Cc: Kiernan, James; Greisler, Russell; Dotson, Christopher; Doug Merriman
Subject: RE: Chevron 97502 Sedro Woolley RIWP

Thank you Ada.

John Guenther, LHG
Cleanup Project Manager
Toxics Cleanup Program
Office: (360) 255-4381
Cell: (425) 324-1438

Washington State Department of Ecology
913 Squalicum Way, Unit 101
Bellingham, WA 98225

From: Hamilton, Ada <Ada.Hamilton@arcadis.com>
Sent: Friday, May 21, 2021 8:11 AM
To: Guenther, John (ECY) <jgue461@ECY.WA.GOV>
Cc: Kiernan, James <jkiernan@chevron.com>; Greisler, Russell <James.Greisler@arcadis.com>; Dotson, Christopher <Christopher.Dotson@arcadis.com>; Doug Merriman <dmerriman@ci.sedro-woolley.wa.us>
Subject: RE: Chevron 97502 Sedro Woolley RIWP

THIS EMAIL ORIGINATED FROM OUTSIDE THE WASHINGTON STATE EMAIL SYSTEM - Take caution not to open attachments or links unless you know the sender AND were expecting the attachment or the link

Hello John,

Please find attached finalized Remedial Action Work Plan for Chevron 97502 Sedro Woolley. The hard copy is being mailed to your office as requested.

Let me know if you have any questions,

Thank you,

-Ada

Ada Hamilton
Project Manager
Arcadis U.S., Inc.
1100 Olive Way, Suite 800 | Seattle, WA | 98101 | USA
T ++1 206 413 6430

M +1 206 321 3782

www.arcadis.com



From: Guenther, John (ECY) <jgue461@ECY.WA.GOV>

Sent: Thursday, May 13, 2021 9:26 AM

To: Hamilton, Ada <Ada.Hamilton@arcadis.com>

Cc: Kiernan, James <jkiernan@chevron.com>; Greisler, Russell <James.Greisler@arcadis.com>; Dotson, Christopher



<Christopher.Dotson@arcadis.com>; Doug Merriman <dmerriman@ci.sedro-woolley.wa.us>

Subject: RE: Chevron 97502 Sedro Woolley RIWP

Ada:

Ecology has reviewed and approves all of the revised documents associated with this draft RI Work Plan.

Please finalize these documents and send me one complete hard copy (to my office address shown below) and an electronic version for filing and internal distribution.

Thanks,

John

John Guenther, LHG

Cleanup Project Manager

Toxics Cleanup Program

Office: (360) 255-4381

Cell: (425) 324-1438

Washington State Department of Ecology

913 Squalicum Way, Unit 101

Bellingham, WA 98225

From: Hamilton, Ada <Ada.Hamilton@arcadis.com>

Sent: Monday, May 10, 2021 5:09 PM

To: Guenther, John (ECY) <jgue461@ECY.WA.GOV>

Cc: Kiernan, James <jkiernan@chevron.com>; Greisler, Russell <James.Greisler@arcadis.com>; Dotson, Christopher <Christopher.Dotson@arcadis.com>; Doug Merriman <dmerriman@ci.sedro-woolley.wa.us>

Subject: Chevron 97502 Sedro Woolley RIWP

Appendix B

TGI for Soil Descriptions

TGI - SOIL DESCRIPTION

Rev: #2

Rev Date: February 16, 2018



VERSION CONTROL

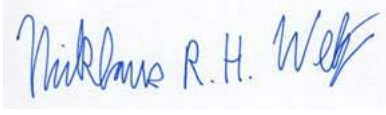
Revision No	Revision Date	Page No(s)	Description	Reviewed by
0	May 20, 2008	17	Original SOP	Joe Quinnan Joel Hunt
1	September 2016	15	Updated to TGI	Nick Welty Patrick Curry
2	February 16, 2018	15	Updated descriptions, attachments and references in text	Nick Welty Patrick Curry

APPROVAL SIGNATURES

Prepared by: 

Patrick Curry, PG

June 30, 2017
Date:

Technical Expert Reviewed by: 

Nicklaus Welty, PG

June 30, 2017
Date:

1 INTRODUCTION

This document describes general and/or specific procedures, methods, actions, steps, and considerations to be used and observed by Arcadis staff when performing work, tasks, or actions under the scope and relevancy of this document. This document may describe expectations, requirements, guidance, recommendations, and/or instructions pertinent to the service, work task, or activity it covers.

It is the responsibility of the Arcadis Certified Project Manager (CPM) to provide this document to the persons conducting services that fall under the scope and purpose of this procedure, instruction, and/or guidance. The Arcadis CPM will also ensure that the persons conducting the work falling under this document are appropriately trained and familiar with its content. The persons conducting the work under this document are required to meet the minimum competency requirements outlined herein, and inquire to the CPM regarding any questions, misunderstanding, or discrepancy related to the work under this document.

This document is not considered to be all inclusive nor does it apply to all projects. It is the CPM's responsibility to determine the proper scope and personnel required for each project. There may be project- and/or client- and/or state-specific requirements that may be more or less stringent than what is described herein. The CPM is responsible for informing Arcadis and/or Subcontractor personnel of omissions and/or deviations from this document that may be required for the project. In turn, project staff are required to inform the CPM if or when there is a deviation or omission from work performed as compared to what is described herein.

In following this document to execute the scope of work for a project, it may be necessary for staff to make professional judgment decisions to meet the project's scope of work based upon site conditions, staffing expertise, regulation-specific requirements, health and safety concerns, etc. Staff are required to consult with the CPM when or if a deviation or omission from this document is required that has not already been previously approved by the CPM. Upon approval by the CPM, the staff can perform the deviation or omission as confirmed by the CPM.

2 SCOPE AND APPLICATION

This Arcadis Technical Guidance Instruction (TGI) describes proper soil description procedures. This TGI should be followed for unconsolidated material unless there is an established client-required specific procedure or regulatory-required specific procedure. In cases where there is a required specific procedure, it should be followed and should be referenced and/or provided as an appendix to reports that include soil classifications and/or boring logs. When following a required non-Arcadis procedure, additional information required by this TGI should be included in field notes with client approval.

This TGI has been developed to emphasize field observation and documentation of details required to:

- make hydrostratigraphic interpretations guided by depositional environment/geologic settings;
- provide information needed to understand the distribution of constituents of concern; properly design wells, piezometers, and/or additional field investigations; and develop appropriate remedial strategies.

This TGI incorporates elements from various standard systems such as ASTM D2488-06, Unified Soil Classification System, Burmister and Wentworth. However, none of these standard systems focus specifically on contaminant hydrogeology and remedial design. Therefore, although each of these

systems contain valuable guidance and information related to correct descriptions, strict application of these systems can omit information critical to our clients and the projects that we perform.

This TGI does not address details of health and safety; drilling method selection; boring log preparation; sample collection; or laboratory analysis. Refer to other Arcadis procedure, guidance, and instructional documents, the project work plans including the quality assurance project plan, sampling plan, and health and safety plan (HASP), as appropriate.

3 PERSONNEL QUALIFICATIONS

Soil descriptions should only be performed by Arcadis personnel or authorized sub-contractors with a degree in geology or a geology-related discipline. Field personnel will complete training on the Arcadis soil description TGI in the office and/or in the field under the guidance of an experienced field geologist with at least 2 years of prior experience applying the Arcadis soil description method.

4 EQUIPMENT LIST

The following equipment should be taken to the field to facilitate soil descriptions:

- field book, field forms or PDA to record soil descriptions;
- field book for supplemental notes;
- this TGI for Soil Descriptions and any project-specific procedure, guidance, and/or instructional documents (if required);
- field card showing Wentworth scale;
- Munsell® soil color chart;
- tape measure divided into tenths of a foot;
- stainless steel knife or spatula;
- hand lens;
- water squirt bottle;
- jar with lid;
- personal protective equipment (PPE), as required by the HASP; and
- digital camera

5 CAUTIONS

Drilling and drilling-related hazards including subsurface utilities are discussed in other procedure documents and site-specific HASPs and are not discussed herein.

Soil samples may contain hazardous substances that can result in exposure to persons describing soils. Routes for exposure may include dermal contact, inhalation and ingestion. Refer to the project specific HASP for guidance in these situations.

6 HEALTH AND SAFETY CONSIDERATIONS

Field activities associated with soil sampling and description will be performed in accordance with a site-specific HASP, a copy of which will be present on site during such activities. Know what hazardous substances may be present in the soil and understand their hazards. Always avoid the temptation to touch soils with bare hands, detect odors by placing soils close to your nose, or tasting soils.

7 PROCEDURE

1. Select the appropriate sampling method to obtain representative samples in accordance with the selected sub-surface exploration method, e.g. split-spoon or Shelby sample for hollow-stem drilling, acetate sleeves for direct push, bagged core for sonic drilling, etc.
2. Proceed with field activities in required sequence. Although completion of soil descriptions is often not the first activity after opening sampler, identification of stratigraphic changes is often necessary to select appropriate intervals for field screening and/or selection of laboratory samples.
3. Set up boring log field sheet.
 - Drillers in both the US and Canada generally work in feet due to equipment specifications. Use the Arcadis standard boring log form (**Attachment A**).
 - The preferred boring log includes a graphic log of the principal soil component to support quick visual evaluation of grain size. The purpose of the graphic log is to quickly assess relative soil permeability. Note, for poorly sorted soils (e.g. glacial till), the principal component may not correlate to permeability of the sample. In this case, the geologist should use best judgement to graph overall soil type consistent with relative soil permeability. For example, for a dense sand/silt/clay till, the graphic log would reflect the silt/clay, rather than sand.
 - Record depths along the left-hand side at a standard scale to aid in the use of this tool. See an example completed boring log (**Attachment B**).
4. Examine each soil core (this is different than examining each sample selected for laboratory analysis), and record the following for each stratum:
 - depth interval;
 - principal component with descriptors, as appropriate;
 - amount and identification of minor component(s) with descriptors as appropriate;
 - moisture;
 - consistency/density;
 - color; and
 - additional description or comments (recorded as notes).
5. At the end of the boring, record the amount of drilling fluid used (if applicable) and the total depth logged.

The above is described more fully below.

DEPTH

To measure and record the depth below ground surface (bgs) of top and bottom of each stratum, the following information should be recorded.

1. Measured depth to the top and bottom of sampled interval. Use starting depth of sample based upon measured tool length information and the length of sample interval.
2. Length of sample recovered, not including slough (material that has fallen into hole from previous interval), expressed as fraction with length of recovered sample as numerator over length of sampled interval as denominator (e.g. 14/24 for 14 inches recovered from 24-inch sampling interval that had 2 inches of slough discarded).
3. Thickness of each stratum measured sequentially from the top of recovery to the bottom of recovery.
4. Any observations of sample condition or drilling activity that would help identify whether there was loss from the top of the sampling interval, loss from the bottom of the sampling interval, or compression of the sampling interval. Examples: 14/24, gravel in nose of spoon; or 10/18 bottom 6 inches of spoon empty.

DETERMINATION OF COMPONENTS

Obtain a representative sample of soil from a single stratum. If multiple strata are present in a single sample interval, each stratum should be described separately. More specifically, if the sample is from a 2-foot long split-spoon where strata of coarse sand, fine sand and clay are present, then the resultant description should be of the three individual strata unless a combined description can clearly describe the interbedded nature of the three strata. Example: Fine Sand with interbedded lenses of Silt and Clay, ranging between 1 and 3 inches thick.

Identify principal component and express volume estimates for minor components on logs using the following standard modifiers.

Modifier	Percent of Total Sample (by volume)
and	36 - 50
some	21 - 35
little	10 - 20
trace	<10

Determination of components is based on using the Udden-Wentworth particle size classification (see below) and measurement of the average grain size diameter. Each size grade or class differs from the next larger grade or class by a constant ratio of $\frac{1}{2}$. Due to visual limitations, the finer classifications of Wentworth's scale cannot be distinguished in the field and the subgroups are not included. Visual determinations in the field should be made carefully by comparing the sample to the Soil Description Field Guide (**Attachment C**) that shows Udden-Wentworth scale or by measuring with a ruler. Use of field sieves is encouraged to assist in estimating percentage of coarse grain sizes. Settling test or wash method (Appendix X4 of ASTM D2488) is encouraged for determining presence and estimating percentage of clay and silt. Note that "gravel" is not an Udden-Wentworth size class.

Udden-Wentworth Scale Modified Arcadis, 2008			
Size Class	Millimeters	Inches	Standard Sieve #
Boulder	256 – 4096	10.08+	
Large cobble	128 - 256	5.04 -10.08	
Small cobble	64 - 128	2.52 – 5.04	
Very large pebble	32 – 64	0.16 - 2.52	
Large pebble	16 – 32	0.63 – 1.26	
Medium pebble	8 – 16	0.31 – 0.63	
Small pebble	4 – 8	0.16 – 0.31	No. 5 +
Granule	2 – 4	0.08 – 0.16	No.5 – No.10
Very coarse sand	1 -2	0.04 – 0.08	No.10 – No.18
Coarse sand	½ - 1	0.02 – 0.04	No.18 - No.35
Medium sand	¼ - ½	0.01 – 0.02	No.35 - No.60
Fine sand	1/8 -¼	0.005 – 0.1	No.60 - No.120
Very fine sand	1/16 – 1/8	0.002 – 0.005	No. 120 – No. 230
Silt (subgroups not included)	1/256 – 1/16	0.0002 – 0.002	Not applicable (analyze by pipette or hydrometer)
Clay (subgroups not included)	1/2048 – 1/256	.00002 – 0.0002	

Identify components as follows. Remove particles greater than very large pebbles (64-mm diameter) from the soil sample. Record the volume estimate of the greater than very large pebbles. Examine the sample fraction of very large pebbles and smaller particles and estimate the volume percentage of the pebbles, granules, sand, silt and clay. Use the jar method, visual method, and/or wash method (Appendix X4 of ASTM D2488) to estimate the volume percentages of each category.

Determination of actual dry weight of each Udden-Wentworth fraction requires laboratory grain-size analysis using sieve sizes corresponding to Udden-Wentworth fractions and is highly recommended to determine grain-size distributions for each hydrostratigraphic unit.

Lab or field sieve analysis is advisable to characterize the variability and facies trends within each hydrostratigraphic unit. Field sieve-analysis can be performed on selected samples to estimate dry weight fraction of each category using ASTM D2488 Standard Practice for Classification of Soils for Engineering Purposes as guidance, but replace required sieve sizes with the following Udden-Wentworth set: U.S. Standard sieve mesh sizes 6; 12; 20; 40; 70; 140; and 270 to retain pebbles; granules; very coarse sand; coarse sand; medium sand; fine sand; and very fine sand, respectively.

PRINCIPAL COMPONENT

The principal component is the size fraction or range of size fractions containing the majority of the volume. Examples: the principal component in a sample that contained 55% pebbles would be “Pebbles”; or the principal component in a sample that was 20% fine sand, 30% medium sand and 25% coarse sand would be “Sand, fine to coarse” or for a sample that was 40% silt and 45% clay the principal component would be “Clay and Silt”. Shade the boxes on the graphic log (**Attachment A**) up to and including the box with the principal component. The purpose of the graphical log is to provide a relative estimate of permeability. As noted above, for poorly sorted soils such as glacial till, the principal component may not correlate to permeability of the sample. In this case, the geologist should use best judgement to graph overall soil type consistent with relative soil permeability.

Include appropriate descriptors with the principal component. These descriptors vary for different particle sizes as follows.

Angularity – Describe the angularity for very coarse sand and larger particles in accordance with the table below (ASTM D-2488-06). Figures showing examples of angularity are available in ASTM D-2488-06 and the Arcadis Soil Description Field Guide.

Description	Criteria
Angular	Particles have sharp edges and relatively plane sides with unpolished surfaces.
Sub-angular	Particles are similar to angular description but have rounded edges.
Sub-rounded	Particles have nearly plane sides but have well-rounded corners and edges.
Rounded	Particles have smoothly curved sides and no edges.

Plasticity – Describe the plasticity for silt and clay based on observations made during the following test method (ASTM D-2488-06).

- As in the dilatancy test below, select enough material to mold into a ball about ½ inch (12 mm) in diameter. Mold the material, adding water if necessary, until it has a soft, but not sticky, consistency.
- Shape the test specimen into an elongated pat and roll by hand on a smooth surface or between the palms into a thread about 1/8 inch (3 mm) in diameter. If the sample is too wet to roll easily, it should be spread into a thin layer and allowed to lose some water by evaporation. Fold the sample threads and reroll repeatedly until the thread crumbles at a diameter of about 1/8 inch. The thread will crumble when the soil is near the plastic limit.

Description	Criteria
Non-plastic	A 1/8-inch (3 mm) thread cannot be rolled at any water content.
Low	The thread can barely be rolled, and the lump cannot be formed when drier than the plastic limit.
Medium	The thread is easy to roll and not much time is required to reach the plastic limit. The thread cannot be rerolled after reaching the plastic limit. The lump crumbles when drier than the plastic limit.
High	It takes considerable time rolling and kneading to reach the plastic limit. The thread can be rolled several times after reaching the plastic limit. The lump can be formed without crumbling when drier than the plastic limit.

Dilatancy – Describe the dilatancy for silt and silt-sand mixtures using the following field test method (ASTM D-2488-06).

- From the specimen select enough material to mold into a ball about ½ inch (12 mm) in diameter. Mold the material adding water if necessary, until it has a soft, but not sticky, consistency.
- Smooth the ball in the palm of one hand with a small spatula.
- Shake horizontally, striking the side of the hand vigorously with the other hand several times.
- Note the reaction of water appearing on the surface of the soil.
- Squeeze the sample by closing the hand or pinching the soil between the fingers, and note the reaction as none, slow, or rapid in accordance with the table below. The reaction is the speed with which water appears while shaking and disappears while squeezing.

Description	Criteria
None	No visible change in the specimen.
Slow	Water appears slowly on the surface of the specimen during shaking and does not disappear or disappears slowly upon squeezing.
Rapid	Water appears quickly on the surface of the specimen during shaking and disappears quickly upon squeezing.

Note that silt and silt-sand mixtures will be non-plastic and display dilatancy. Clay mixtures will have some degree of plasticity but do not typically react to dilatancy testing. Therefore, the tests outlined above can be used to differentiate between silt dominated and clay dominated soils.

MINOR COMPONENT(S)

The minor component(s) are the size fraction(s) containing less than 50% volume. Example: the identified components are estimated to be 60% medium sand to granules, 25% silt and clay; 15 % pebbles – there are two identified minor components: silt and clay; and pebbles.

Include a standard modifier to indicate percentage of minor components (see Table on Page 6) and the same descriptors that would be used for a principal component. Plasticity should be provided as a descriptor for clay and clay mixtures. Dilatancy should be provided for silt and silt mixtures. Angularity should be provided as a descriptor for pebbles and coarse sand. For the example above, the minor constituents with modifiers could be: some silt and clay, low plasticity; little medium to large pebbles, sub-round.

SORTING

Sorting is the opposite of grading, which is a commonly used term in the USCS or ASTM methods to describe the uniformity of the particle size distribution in a sample. Well-sorted samples are poorly graded and poorly sorted samples are well graded. Arcadis prefers the use of sorting for particle size distributions and grading to describe particle size distribution trends in the vertical profile of a sample or hydrostratigraphic unit because of the relationship between sorting and the energy of the depositional process. For soils with sand-sized or larger particles, sorting should be determined as follows:

Well sorted – the range of particle sizes is limited (e.g. the sample is comprised of predominantly one or two grain sizes).

Poorly sorted – a wide range of particle sizes are present.

You can also use sieve analysis to estimate sorting from a sedimentological perspective; sorting is the statistical equivalent of standard deviation. Smaller standard deviations correspond to higher degree of sorting (see Remediation Hydraulics, 2008).

MOISTURE

Moisture content should be described for every sample since increases or decreases in water content is critical information. Moisture should be described in accordance with the table below (percentages should not be used unless determined in the laboratory).

Description	Criteria
Dry	Absence of moisture, dry to touch, dusty.
Moist	Damp but no visible water.
Wet (Saturated)	Visible free water, soil is usually below the water table.

CONSISTENCY or DENSITY

This can be determined by standard penetration test (SPT) blow counts (ASTM D-1586) or field tests in accordance with the tables below. When drilling with hollow-stem augers and split-spoon sampling, the SPT blow counts and N-value is used to estimate density. The N-value is the blows per foot for the 6” to 18” interval. Example: for 24-inch spoon, recorded blows per 6-inch interval are: 4/6/9/22. Since the second interval is 6” to 12”, the third interval is 12” to 18”, the N value is 6+9, or 15. Fifty blow counts for less than 6 inches is considered refusal. In recent years, more common drilling methods include rotary-sonic or direct push. When blow counts are not available, density is determined using a thumb test. Note however, the thumb test only applies to fine-grained soils.

Fine-grained soil – Consistency

Description	Criteria
Very soft	N-value < 2 or easily penetrated several inches by thumb.
Soft	N-value 2-4 or easily penetrated one inch by thumb.
Medium stiff	N-value 9-15 or indented about ¼ inch by thumb with great effort.
Very stiff	N-value 16-30 or readily indented by thumb nail.
Hard	N-value > than 30 or indented by thumbnail with difficulty

Coarse-grained soil – Density

Description	Criteria
Very loose	N-value 1- 4
Loose	N-value 5-10
Medium dense	N-value 11-30
Dense	N-value 31- 50
Very dense	N-value >50

COLOR

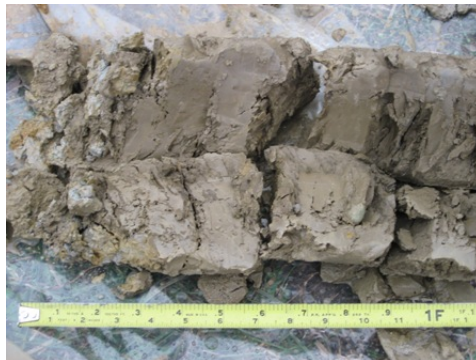
Color should be described using simple basic terminology and modifiers based on the Munsell system. Munsell alpha-numeric codes are required for all samples. If the sample contains layers or patches of varying colors this should be noted and all representative colors should be described. The colors should be described for moist samples. If the sample is dry it should be wetted prior to comparing the sample to the Munsell chart.

ADDITIONAL COMMENTS (NOTES)

Additional comments should be made where observed and should be presented as notes with reference to a specific depth interval(s) to which they apply. Some of the significant information that may be observed includes the following.

- Odor - You should not make an effort to smell samples by placing near your nose since this can result in unnecessary exposure to hazardous materials. However, odors should be noted if they are detected during the normal sampling procedures. Odors should be based upon descriptors such as those used in NIOSH “Pocket Guide to Chemical Hazards”, e.g. “pungent” or “sweet” and should not indicate specific chemicals such as “phenol-like” odor or “BTEX” odor.
- Structure
- Bedding planes (laminated, banded, geologic contacts).
- Presence of roots, root holes, organic material, man-made materials, minerals, etc.
- Mineralogy
- Cementation
- NAPL presence/characteristics, including sheen (based on client-specific guidance).
- Reaction with HCl - typically only used for special soil conditions, such as caliche environments.
- Origin, if known (Lacustrine; Fill; etc.).

EXAMPLE DESCRIPTIONS



51.4 to 54.0' CLAY, some silt, medium to high plasticity; trace small to large pebbles, sub-round to sub-angular up to 2" diameter; moist, stiff, dark grayish brown (10 YR 4/2) NOTE: Lacustrine; laminated 0.1 to 0.2" thick, laminations brownish yellow (10 YR 4/3).



32.5 to 38.0' SAND, medium to very coarse, sub-round to sub-angular; little granule and pebble, trace silt; poorly sorted, wet, grayish brown (10 YR 5/2).

Unlike the first example where a density of cohesive soils could be estimated, this rotary-sonic sand and pebble sample was disturbed during drilling (due to vibrations in a loose sand and pebble matrix) so no density description could be provided. Neither sample had noticeable odor so odor comments were not included.

The standard generic description order is presented below.

- Depth
- Principal Components
 - Angularity for very coarse sand and larger particles
 - Plasticity for silt and clay
 - Dilatancy for silt and silt-sand mixtures
- Minor Components
- Sorting
- Moisture
- Consistency or Density
- Color
- Additional Comments

8 WASTE MANAGEMENT

Project-specific requirements should be identified and followed. The following procedures, or similar waste management procedures are generally required.

Water generated during cleaning procedures will be collected and contained onsite in appropriate containers for future analysis and appropriate disposal. PPE (such as gloves, disposable clothing, and other disposable equipment) resulting from personnel cleaning procedures and soil sampling/handling activities will be placed in plastic bags. These bags will be transferred into appropriately labeled 55-gallon drums or a covered roll-off box for appropriate disposal.

Soil materials will be placed in sealed 55-gallon steel drums or covered roll-off boxes and stored in a secured area. Once full, the material will be analyzed to determine the appropriate disposal method.

9 DATA RECORDING AND MANAGEMENT

Upon collection of soil samples, the soil sample should be logged on a standard boring log and/or in the field log book depending on Data Quality Objectives (DQOs) for the task/project. The preferred standard boring log is presented below and is included as **Attachment A**.

The general scheme for soil logging entries is presented above; however, depending on task/project DQOs, specific logging entries that are not applicable to task/project goals may be omitted at the project manager's discretion. In any case, use of a consistent logging procedure is required.

Completed logs and/or logbook will be maintained in the task/project field records file. Digital photographs of typical soil types observed at the site and any unusual features should be obtained whenever possible. All photographs should include a ruler or common object for scale. Photo location, depth and orientation must be recorded in the daily log or log book and a label showing this information in the photo is useful.

10 QUALITY ASSURANCE

Soil descriptions should be completed only by appropriately trained personnel. Descriptions should be reviewed by an experienced field geologist for content, format and consistency. Edited boring logs should be reviewed by the original author to assure that content has not changed.

11 REFERENCES

Arcadis Soil Description Field Guide, 2008.

Munsell® Color Chart – available from Forestry Suppliers, Inc.- Item 77341 “Munsell® Color Soil Color Charts.

Field Gauge Card that Shows Udden-Wentworth scale – available from Forestry Suppliers, Inc. – Item 77332 “Sand Grain Sizing Folder.”

ASTM D-1586, Test Method for Penetration Test and Split-Barrel Sampling of Soils.

ASTM D-2488-00, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure)

United States Bureau of Reclamation. Engineering Geology Field Manual. United States Department of Interior, Bureau of Reclamation. <http://www.usbr.gov/pmts/geology/fieldmap.htm>.

Petrology of Sedimentary Rocks, Robert L. Folk, 1980, p. 1-48.

NIOSH Pocket Guide to Chemical Hazards.

Remediation Hydraulics, Fred C. Payne, Joseph A. Quinnan, and Scott T. Potter, 2008, p 59-63.

ATTACHMENT A

Arcadis Standard Soil Boring Log Form



ATTACHMENT B

Example of Completed Arcadis Soil Boring Log



ATTACHMENT C

Arcadis Soil Description Field Guide



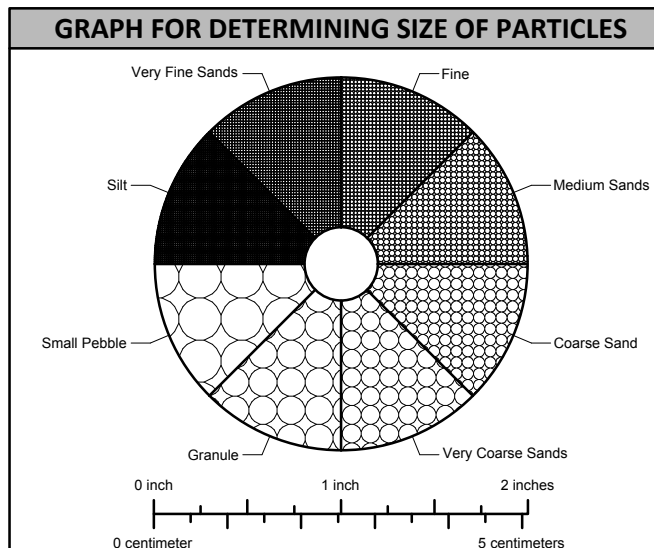
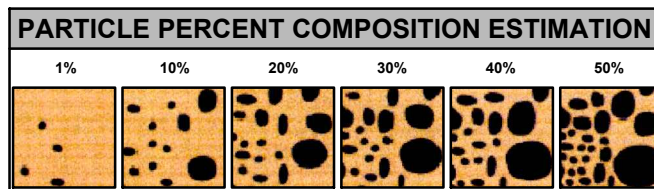


FINE-GRAINED SOILS	
Description	Criteria
Descriptor - Plasticity	
Nonplastic	A 1/8-inch (3mm) thread cannot be rolled at any moisture content.
Low	Thread can barely be rolled, and lump cannot be formed when drier than plastic limit.
Medium	Takes considerable time and rolling to reach plastic limit. Thread cannot be rolled after reaching plastic limit. Lump crumbles when drier than plastic limit.
High	Thread is easy to roll and quickly reaches plastic limit. Thread can be rerolled several times after reaching plastic limit. Lump can be formed without crumbling when drier than plastic limit.
Descriptor - Dilatancy	
No Dilatancy	No visible change when shaken or squeezed.
Slow	Water appears slowly on the surface of soil during shaking and does not disappear or disappears slowly when squeezed.
Rapid	Water appears quickly on surface of soil during shaking and disappears quickly when squeezed.
Minor Components with Descriptors	
Moisture	
Dry	Absence of moisture, dry to touch, dusty.
Moist	Damp but no visible water.
Wet	Visible free water; soil is usually below the water table. (Saturated)
Consistency	
Very soft	N-value < 2 or easily penetrated several inches by thumb.
Soft	N-value 2-4 or easily penetrated 1 inch by thumb.
Medium stiff	N-value 5-8 or indented about 1/2 inch by thumb with great effort.
Stiff	N-value 9-15 or indented about 1/4 inch by thumb with great effort.
Very stiff	N-value 16-30 or readily indented by thumb nail.
Hard	N-value > than 30 or indented by thumbnail with difficulty.
Color using Munsell	
Geologic Origin (if known)	
Other	

DESCRIPTION ORDER
Depth Interval Principal Components with Descriptors Minor Components with Descriptors Sorting Field Moisture Condition Density/Consistency Color using Munsell Geologic Origin (if known) Other descriptions as NOTES: - Odor - Stratigraphy - Structure - Sphericity - Cementation - Reaction to acid

MINOR COMPONENTS % MODIFIERS	
Modifier	Percent of Total Sample (by volume)
and	36 - 50
some	21 - 35
little	10 - 20
trace	<10

UDDEN-WENTWORTH SCALE			
Fraction	Sieve Size	Grain Size	Approximate Scale
Boulder		256 - 4096 mm	Larger than volleyball
Large Cobble		128 - 256 mm	Softball to volleyball
Small Cobble		64 - 128 mm	Pool ball to softball
Very Large Pebble		32 - 64 mm	Pinball to pool ball
Large Pebble		16 - 32 mm	Dime size to pinball
Medium Pebble		8 - 16 mm	Pencil eraser to dime size
Small Pebble	No. 5+	4 - 8 mm	Pea size to pencil eraser
Granule	No. 10 - 5	2 - 4 mm	Rock salt to pea size
Very Coarse Sand	No. 18 - 10	1 - 2 mm	See field gauge card
Coarse Sand	No. 35 - 18	0.5 - 1 mm	See field gauge card
Medium Sand	No. 60 - 35	0.25 - 0.5 mm	See field gauge card
Fine Sand	No. 120 - 60	0.125 - 0.25 mm	See field gauge card
Very Fine Sand	No. 230 - 120	0.0625 - 0.125 mm	See field gauge card
Silt and Clay. See SOP for description of fines	Not Applicable	<0.0625 mm	Analyze by pipette or hydrometer



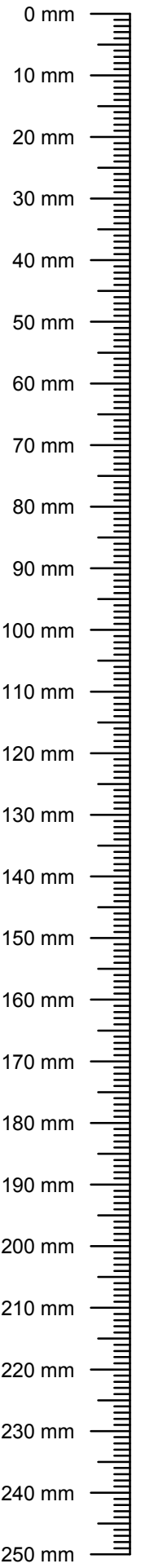
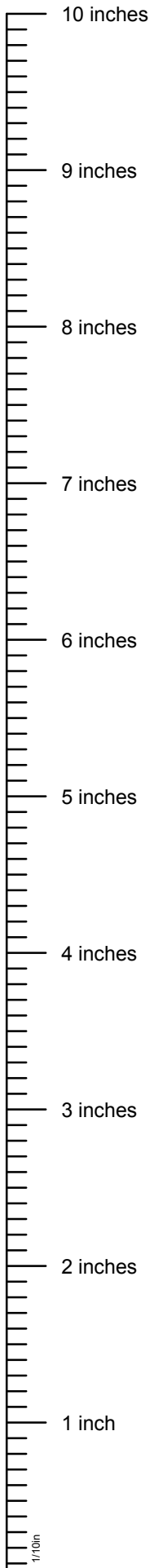
FOR COARSE-GRAINED SOILS	
Description	Criteria
Descriptor - Angularity	
Angular	Particles have sharp edges and relatively planar sides with unpolished surfaces.
Subangular	Particles are similar to angular but have rounded edges.
Subround	Particles have nearly planar sides but have well-rounded corners and edges.
Round	Particles have smoothly curved sides and no edges.
Minor Components with Descriptors	
Sorting Cu= d60/d10	
Well Sorted	Near uniform grain-size distribution Cu= 1 to 3.
Poorly Sorted	Wide range of grain size Cu= 4 to 6.
Moisture	
Dry	Absence of moisture, dry to touch, dusty.
Moist	Damp but no visible water.
Wet	Visible free water; soil is usually below the water table. (Saturated)
Density	
Very loose	N-value 1 - 4
Loose	N-value 5 - 10
Medium Dense	N-value 11 - 30
Dense	N-value 31 - 50
Very dense	N-value >50
Color using Munsell	
Geologic Origin (if known)	
Other	
Cementation	
Weak Cementation	Crumbles or breaks with handling or little finger pressure.
Moderate Cementation	Crumbles or breaks with considerable finger pressure.
Strong Cementation	Will not crumble with finger pressure.
Reaction with Dilute HCl Solution (10%)	
No Reaction	No visible reaction.
Weak Reaction	Some reaction, with bubbles forming slowly.
Strong Reaction	Violent reaction, with bubbles forming immediately.

EXAMPLE OF SOIL DESCRIPTION AND PHOTO

10-15 feet CLAY, medium to high plasticity; trace silt; trace small to very large pebbles, subround to subangular up to 2" diameter; moist, stiff, dark grayish brown (10YR 4/2). NOTE: Lacustrine; laminated 0.1 to 0.2" thick, laminations brownish yellow (10YR 4/3).

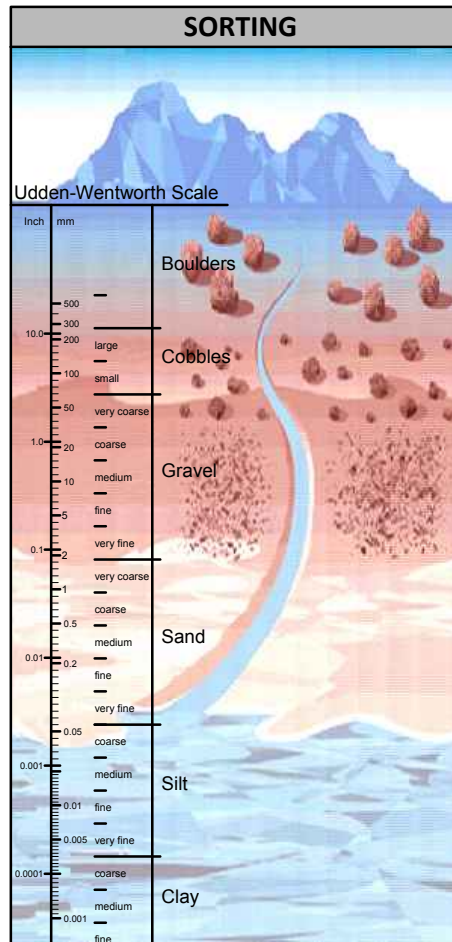
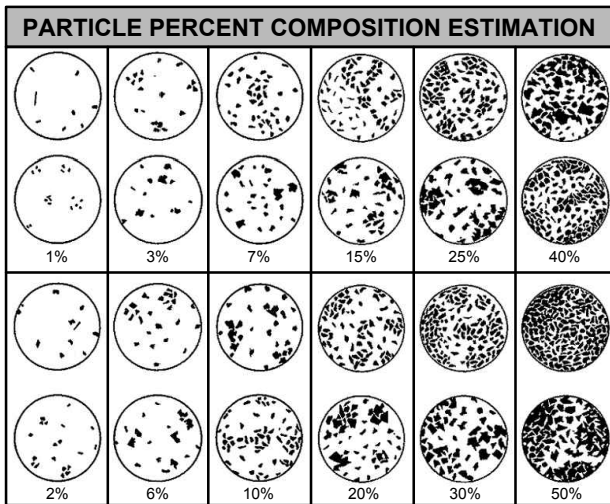
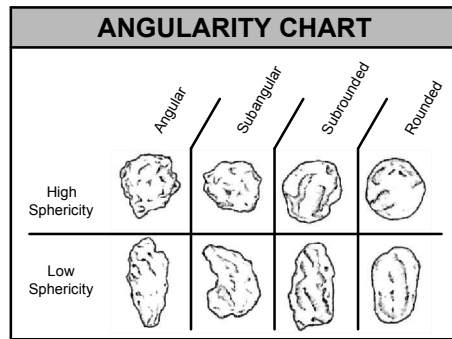
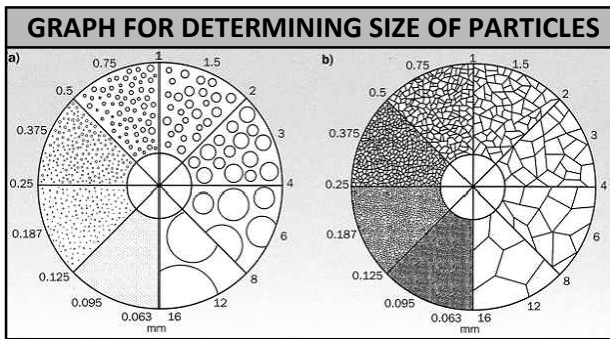
EXAMPLE OF SOIL DESCRIPTION AND PHOTO

10-15 feet SAND, medium to very coarse; little granules to medium pebbles, subround to subangular; trace silt; poorly sorted, wet, grayish brown (10YR5/2).



VARIATIONS IN SOIL STRATIGRAPHY	
Term	Thickness of Configuration
Parting	0 - to 1/16-inch thickness.
Seam	1/16 - to 1/2-inch thickness.
Layer	1/2 - to 12-inch thickness.
Stratum	> 12-inch thickness.
Pocket	Small erratic deposit, usually less than 1 foot in size.
Varved Clay	Alternating seams or layers of sand, silt, and clay (laminated).
Occasional	≤ 1 foot thick.
Frequent	> 1 foot thick.

SOIL STRUCTURE DESCRIPTIONS	
Term	Description
Homogeneous	Same color and appearance throughout.
Laminated	Alternating layers < 1/4 inch thick.
Stratified	Alternating layers ≥ 1/4 inch thick.
Lensed	Inclusions of small pockets of different materials, such as lenses of sand scattered through a mass of clay; note thickness.
Blocky	Cohesive soil can be broken down into small angular lumps, which resist further breakdown.
Fissured	Breaks along definite planes of fracture with little resistance to fracturing.
Slickensided	Fracture planes appear to be polished or glossy, sometimes striated.



SETTLING TABLE (SILT/CLAY)							
Diameter of Particle (mm)	<0.625	<0.031	<0.016	<0.008	<0.004	<0.002	<0.0005
Depth of Withdrawal (cm)	10	10	10	10	5	5	3
Time of Withdrawal	hr:min:sec	hr:min:sec	hr:min:sec	hr:min:sec	hr:min:sec	hr:min:sec	hr:min:sec
Temperature (Celsius)							
20	00:00:29	00:01:55	00:07:40	00:30:40	00:61:19	04:05:00	37:21:00
21	00:00:28	00:01:52	00:07:29	00:29:58	00:59:50	04:00:00	
22	00:00:27	00:01:50	00:07:18	00:29:13	00:58:22	03:54:00	
23	00:00:27	00:01:47	00:07:08	00:28:34	00:57:05	03:48:00	
24	00:00:26	00:01:45	00:06:58	00:27:52	00:55:41	03:43:00	33:56:00
25	00:00:25	00:01:42	00:06:48	00:27:14	00:54:25	03:38:00	
26	00:00:25	00:01:40	00:06:39	00:26:38	00:53:12	03:33:00	
27	00:00:24	00:01:38	00:06:31	00:26:02	00:52:02	03:28:00	
28	00:00:24	00:01:35	00:06:22	00:25:28	00:50:52	03:24:00	31:00:00
29	00:00:23	00:01:33	00:06:13	00:24:53	00:49:42	03:10:00	
30	00:00:23	00:01:31	00:06:06	00:24:22	00:48:42	03:05:00	

Appendix C

Boring Logs

Soil Boring Log

Client Name: Chevron Environmental Management Company Date Started: 09-20-2021 Logger: Joe Sepiol

Project Name: COP5_West_97502_WA_Sedro Woolley Date Completed: 09-21-2021 Reviewer: _____

Project Number: 30064310 Total Depth: 20.0 ft bgs

Depth (feet)	Sample ID	Rec. (ft)	PID (ppm)	Graphic	Description	Drilling Fluid and Notes	Well Installation Notes	Well Construction Details
0-0.4					(0-0.4 ft) NOTE: Asphalt.			2" Borehole
0.4-1.7					(0.4-1 ft) PEBBLES, small to very large, angular to subround; little very fine to very coarse sand, angular to round; trace silt; poorly sorted; moist; loose; 10YR 4/2 - dark grayish brown; no odor. NOTE: Road fill.			8" Well Box
1.7-2.5			1.7		(1-2.5 ft) SAND, very fine to very coarse, angular to round; little granules, subangular to subround; little silt; trace small to large pebbles, subangular; poorly sorted; moist; loose; 10YR 4/2 - dark grayish brown; no odor. NOTE: 1.7ppm large cobble at 2.0 ft.			Concrete
2.5-5.0			5.0		(2.5-5.9 ft) SAND, very fine to very coarse, angular to round; little granules, subangular to subround; little silt; trace small to medium pebbles, subangular to subround; poorly sorted; moist; loose; 10YR 3/2 - very dark grayish brown; no odor. NOTE: 5.0 ppm.			Bentonite Chips (%)
5.0-6.9	MW-15-6.5-7.5		4.5		(5.9-9.1 ft) SAND, fine, subangular; little silt; well sorted; moist to wet; dense; 10YR 5/1 - gray; no odor. NOTE: 2.5YR 5/8 mottling. Water interface at 6.9 ft bgs. 4.5 ppm.			2" Bentonite Chips (%)
6.9-9.1			499		(9.1-13.8 ft) SAND, very fine to medium, round; little silt; well sorted; wet; medium dense; 10YR 5/1 - gray; strong odor. NOTE: 499 ppm.			2" 0.1-Slot PVC pre-pack Screen
9.1-13.8	MW-15-10.0-11.0		51.2		(13.8-17.3 ft) SILT, no plasticity, no dilatancy; little very fine to fine sand, round; well sorted; wet; dense; 10YR 4/1 - dark gray; mild odor. NOTE: 6.4 ppm.			Prepack Filter Pack (%)
13.8-17.3	MW-15-14.0-15.0		6.4		(17.3-19.6 ft) CLAY, high plasticity, no dilatancy; little silt; little very fine to fine sand, round; well sorted; wet; medium dense; 10YR 4/1 - dark gray; mild odor. NOTE: Changed from more silt to more fine sand. Wood encountered at 17.3 ft. 5.3 ppm.			Sch. 40 PVC End Cap
17.3-19.6	MW-15-19.0-20.0		5.3		(19.6-20 ft) SAND, very fine to fine, round; little silt; trace clay; well sorted; wet; medium dense; 10YR 4/1 - dark gray.			
19.6-20.0					(20.0-20 ft) SAND, very fine to fine, round; little silt; trace clay; well sorted; wet; medium dense; 10YR 4/1 - dark gray.			
20.0-21.0					20 ft. bgs End of Boring			

Drilling Co.:	<u>Holt</u>	Sampling Method:	<u>Hand Auger/ Split Spoon/ Sleeves</u>
Driller:	<u>Michael Running</u>	Sampling Dimensions:	<u>6.5-7.5 / 10.0-11.0 / 14.0-15.0 / 19.0-20.0</u>
Drilling Method:	<u>Direct-Push/ Direct</u>	First Encountered Water (ft bgs):	<u>6.9</u>
Drill Rig:	<u>Geoprobe/ Hollow Stem Auger</u>	Static Water Level (ft bgs):	<u>10.04</u>
Remarks:	_____	Top of Casing Elev.:	_____
	_____	Surface Elev.:	<u>NA</u>
	_____	North Coord.:	<u>NA</u>
	_____	East Coord.:	<u>NA</u>

SOIL BORING AND CONSTRUCTION LOG C:\USERS\SS1008\ONE DRIVE - ARCADIS\DI-DRIVE\PROJECT FILES\BORELOGS\FULORUM LOGS\RETAIL OUTLET-97502\GEC BANGALORE\SOIL-ROCK BORING LOG V2.0 GINT DATA TEMPLATE.GDT 2/11/21

Soil Boring Log

Client Name: Chevron Environmental Management Company Date Started: 09-23-2021 Logger: Joe Sepiol

Project Name: COP5_West_97502_WA_Sedro Woolley Date Completed: 09-23-2021 Reviewer: _____

Project Number: 30064310 Total Depth: 20.0 ft bgs

Depth (feet)	Sample ID	Rec. (ft)	PID (ppm)	Graphic	Description	Drilling Fluid and Notes	Well Installation Notes	Well Construction Details	
0-0.4					(0-0.4 ft)				
0.4-1.5		1.0			(0.4-1.5 ft) NOTE: Fill material. 1.0 ppm at 1.0 ft. Asphalt and concrete chunks within.				
1.5-9		71.2			(1.5-9 ft) SAND, medium, subround; little silt; little small to medium pebbles, angular to round; poorly sorted; dry to moist; dense; 10YR 4/1 - dark gray; moderate odor; Likely fill material. Asphalt, concrete, wood, brick fragments. NOTE: 71.2 ppm at 2 ft. 101.8 ppm at 3 ft. 217.0 ppm at 4 ft. 172.0 ppm at 5 ft. 15.6 ppm at 8 ft.				
9-12		5.9			(9-12 ft) PEBBLES, small, subangular to subround; some granules, subangular to subround; poorly sorted; wet; very loose; 10YR 4/1 - dark gray; no odor. NOTE: Likely fill.				
12-18.6		4.3			(12-18.6 ft) SAND and SILT, very fine to fine, round, no plasticity, slow dilatancy; well sorted; wet; medium stiff; 10YR 4/1 - dark gray; no odor. NOTE: 6.0 ppm at 17.5 ft. 4.3 ppm at 14 ft.				
18.6-20		5.7			(18.6-20 ft) CLAY, high plasticity, no dilatancy; some silt; well sorted; wet; stiff; 10YR 3/1 - very dark gray; no odor. NOTE: Woody material at 19.0 ft. 5.7 ppm at 19.5 ft.				
					20 ft. bgs End of Boring				

Drilling Co.: <u>Holt</u>	Sampling Method: <u>Hand Auger/ Split Spoon</u>
Driller: <u>Michael Running</u>	Sampling Dimensions: <u>4.0-5.0 / 14.0-15.0 / 19.0-20.0</u>
Drilling Method: <u>Hollow Stem</u>	First Encountered Water (ft bgs): <u>8</u>
Drill Rig: <u>Hollow Stem Auger</u>	Static Water Level (ft bgs): <u>9.72</u>
Remarks: <u>Water between 8 and 11 ft. Pea gravel encountered and missing core near water level.</u>	Top of Casing Elev: _____
	Surface Elev: <u>NA</u>
	North Coord: <u>NA</u>
	East Coord: <u>NA</u>

SOIL BORING AND CONSTRUCTION LOG C:\USERS\SS1008\ONE DRIVE - ARCADIS\ID-DRIVE\PROJECT FILES\BORELOGS\FILORUM LOGS\RETAIL OUTLET-97502\GEC BANGALORE\SOIL-ROCK BORING LOG V2.0 GINT DATA TEMPLATE.GDT 2/11/2021

Soil Boring Log

Client Name: Chevron Environmental Management Company Date Started: 09-20-2021 Logger: Joe Sepiol

Project Name: COP5_West_97502_WA_Sedro Woolley Date Completed: 09-22-2021 Reviewer: _____

Project Number: 30064310 Total Depth: 20.0 ft bgs

Depth (feet)	Sample ID	Rec. (ft)	PID (ppm)	Graphic	Description	Drilling Fluid and Notes	Well Installation Notes	Well Construction Details
1					(0-0.4 ft)			
2					(0.4-3 ft) SAND, fine to medium, angular to round; little silt; little clay; little granules, subangular to subround; little medium to large pebbles, subangular to subround; well sorted; moist; medium dense; 10YR 4/2 - dark grayish brown. NOTE: 6.3 ppm. Reddish mottling.			
3			6.3					
4					(3-8.2 ft) SAND and SILT, very fine to fine, round; well sorted; moist; medium dense; 10YR 4/2 - dark grayish brown; no odor. NOTE: 3.1 ppm at 5.5 ft. 5.1 ppm at 7.5 ft.			
5								
6			3.1					
7								
8			5.1					
9	MW-17-8.0-9.0				(8.2-8.7 ft) SAND, medium, angular; well sorted; wet; loose; 10YR 3/2 - very dark grayish brown; no odor. NOTE: Water at 8.2 ft.			
10			5.0					
11			3.5		(8.7-10.8 ft) SILT, medium plasticity, no dilatancy; some very fine to fine sand, subangular; well sorted; wet; medium stiff; 2.5YR 6/1 - reddish gray; no odor. NOTE: 10YR 5/6 mottling. 5.0 ppm at 9.5 ft. 3.5 ppm at 10.5 ft.			
12	MW-17-11.5-13.0				(10.8-11.1 ft) SAND and SILT, medium, angular; little clay; poorly sorted; wet; loose; 10YR 4/2 - dark grayish brown.			
13			59.7		(11.1-17.1 ft) SAND, fine to medium, angular to subangular; well sorted; wet; loose; 10YR 3/1 - very dark gray; strong odor. NOTE: 59.7 ppm at 12.5 ft. 3.1 ppm at 15 ft.			
14								
15			3.1					
16	MW-17-15.0-16.0							
17			3.8					
18					(17.1-18.5 ft) SILT, no plasticity, slow dilatancy; little very fine to fine sand, round; well sorted; wet; soft; 10YR 5/1 - gray; mild odor. NOTE: Woody debris encountered from 17.3 to 17.5 ft. 3.8 ppm at 17.5 ft.			
19								
20	MW-17-19.0-20.0		1.4		(18.5-20 ft) SILT, high plasticity, slow dilatancy; some clay; little very fine to fine sand, round; well sorted; wet; medium stiff; 10YR 3/1 - very dark gray; no odor. NOTE: Woody debris encountered at 18.8 and 19.9 ft. 1.4 ppm at 19.5 ft.			
21					20 ft. bgs End of Boring			

Drilling Co.:	<u>Holt</u>	Sampling Method:	<u>Hand Auger/ Split Spoon</u>
Driller:	<u>Michael Running</u>	Sampling Dimensions:	<u>8.0-9.0 / 11.5-13.0 / 15.0-16.0 / 19.0-20.0</u>
Drilling Method:	<u>Hollow Stem/ Direct Push</u>	First Encountered Water (ft bgs):	<u>8.2</u>
Drill Rig:	<u>Hollow Stem Auger/ Geoprobe</u>	Static Water Level (ft bgs):	<u>10.29</u>
Remarks:	_____	Top of Casing Elev.:	_____
	_____	Surface Elev.:	<u>NA</u>
	_____	North Coord.:	<u>NA</u>
	_____	East Coord.:	<u>NA</u>

SOIL BORING AND CONSTRUCTION LOG C:\USERS\SS1008\ONE\DRIVE - ARCADIS\DI-DRIVE\PROJECT FILES\BOPRELOGS\FILORUM LOGS\RETAIL OUTLET -97502\GEC BANGALORE\SOIL-ROCK BORING LOG V2.0 GINT DATA TEMPLATE.GPJ GINT DATA TEMPLATE.GDT 2/11/21

Soil Boring Log

Client Name: Chevron Environmental Management Company Date Started: 09-21-2021 Logger: Joe Sepiol

Project Name: COP5_West_97502_WA_Sedro Woolley Date Completed: 09-22-2021 Reviewer: _____

Project Number: 30064310 Total Depth: 20.0 ft bgs

Depth (feet)	Sample ID	Rec. (ft)	PID (ppm)	Graphic	Description	Drilling Fluid and Notes	Well Installation Notes	Well Construction Details
1					(0-0.4 ft) Concrete.			
2					(0.4-0.8 ft) SAND, medium, angular; some small to large pebbles, subangular to subround; poorly sorted; moist; medium dense; 10YR 4/1 - dark gray.			
3			1.7		(0.8-3 ft) SAND, medium, angular; well sorted; dry to moist; loose; 10YR 4/3 - brown. NOTE: 1.7 ppm.			
4					(3-8.1 ft) SAND, fine, angular; little silt; well sorted; moist; loose; 10YR 4/2 - dark grayish brown; no odor. NOTE: 1.2 ppm at 5 ft. 1.8 ppm at 6 ft.			
5			1.2					
6			1.8					
7								
8								
9	MW-18-8.0-9.0		2.3		(8.1-9 ft) SAND, fine, subangular; some silt; well sorted; wet; medium dense; 10YR 4/1 - dark gray. NOTE: Water at 8.4 ft. 2.3 ppm at 8.5 ft.			
10					(9-9.5 ft) SILT, low plasticity, slow dilatancy; little very fine sand, round; little clay; well sorted; wet; medium dense; 10YR 5/1 - gray; no odor; . . NOTE: 7.5 YR 4/6 bands.			
11			3.1		(9.5-12.2 ft) SILT, medium plasticity, slow dilatancy; some very fine to fine sand, round; little clay; well sorted; wet; medium stiff; 10YR 3/1 - very dark gray; no odor. NOTE: 3.1 ppm at 11 ft.			
12								
13			4.1		(12.2-13.9 ft) SAND, very fine to fine, subround; little silt; well sorted; wet; very loose; 10YR 4/1 - dark gray; no odor. NOTE: 4.1 ppm at 13 ft.			
14								
15			4.2		(13.9-15 ft) SILT and SAND, very fine, round, no plasticity, no dilatancy; well sorted; wet; stiff; 10YR 5/1 - gray; no odor. NOTE: 4.2 ppm at 15 ft.			
16								
17								
18			2.0		(17.1-19.4 ft) SILT, no plasticity, slow dilatancy; some very fine sand, round; well sorted; wet; soft; 10YR 4/1 - dark gray; no odor. NOTE: Organic matter (leaf mat and small sticks) at 17.9 to 18.1 ft. 2.0 ppm at 17.5 ft.			
19	MW-18-19.0-20.0		2.4		(19.4-20 ft) SAND, fine to medium, subangular; well sorted; wet; loose; 10YR 3/1 - very dark gray; no odor. NOTE: 2.4 ppm at 19.5 ft.			
20								
21					20 ft. bgs End of Boring			

Drilling Co.:	<u>Holt</u>	Sampling Method:	<u>Hand Auger</u>
Driller:	<u>Michael Running</u>	Sampling Dimensions:	<u>8.0-9.0 / 19.0-20.0</u>
Drilling Method:	<u>Hollow Stem</u>	First Encountered Water (ft bgs):	<u>8.4</u>
Drill Rig:	<u>Hollow Stem Auger</u>	Static Water Level (ft bgs):	<u>14.92</u>
Remarks:	_____	Top of Casing Elev.:	_____
	_____	Surface Elev.:	<u>NA</u>
	_____	North Coord.:	<u>NA</u>
	_____	East Coord.:	<u>NA</u>

SOIL BORING AND CONSTRUCTION LOG C:\USERS\SS1008\ONE DRIVE - ARCADIS\DI-DRIVE\PROJECT FILES\BORELOGS\FILORUM LOGS\RETAIL OUTLET-97502\GEC BANGALORE\SOIL-ROCK BORING LOG V2.0 GINT DATA TEMPLATE.GPJ - GINT DATA TEMPLATE.GDT 2/11/21

Soil Boring Log

Client Name: Chevron Environmental Management Company Date Started: 09-21-2021 Logger: Joe Sepiol

Project Name: COP5_West_97502_WA_Sedro Woolley Date Completed: 09-22-2021 Reviewer: _____

Project Number: 30064310 Total Depth: 20.0 ft bgs

Depth (feet)	Sample ID	Rec. (ft)	PID (ppm)	Graphic	Description	Drilling Fluid and Notes	Well Installation Notes	Well Construction Details
1					(0-0.2 ft) Asphalt.			
2					(0.2-2 ft) COBBLES, small to large, round; some fine to coarse sand, angular; some silt; little large pebbles, angular to subangular; poorly sorted; moist; medium dense; 10YR 4/3 - brown; no odor. NOTE: Likely fill.			
3			1.5		(2-4.5 ft) SAND and SILT, very fine to coarse, angular; trace small pebbles, angular to subround; trace granules, subangular to subround; poorly sorted; dry to moist; medium dense; 10YR 4/3 - brown.			
4			2.4		(4.5-7.5 ft) SILT, no plasticity, no dilatancy; some very fine to fine sand, subround; little small to medium pebbles, angular to subround; well sorted; moist; medium dense; 10YR 4/3 - brown. NOTE: 3.9 ppm at 7 ft.			
5			3.9		(7.5-11 ft) SAND and SILT, fine, subangular; well sorted; wet; medium dense; 2.5YR 6/1 - reddish gray; no odor. NOTE: 10YR 4/4 staining. 3.0 ppm at 9.5 ft.			
6	MW-19-7.5-8.5				(11-13.2 ft) SAND and SILT, fine, subround; well sorted; wet; loose; 10YR 4/1 - dark gray. NOTE: 4.4 ppm at 12.5 ft.			
7			3.0		(13.2-18.2 ft) SAND and SILT, fine, subangular; well sorted; wet; medium dense; 10YR 6/1 - gray; no odor. NOTE: 10YR 4/1 mottling. 4.0 ppm at 14.5 ft / 4.8 ppm at 17 ft.			
8			4.4		(18.2-20 ft) SAND, very fine, round; some silt; well sorted; wet; medium dense; 10YR 4/1 - dark gray; no odor. NOTE: 3.5 ppm at 19.5 ft.			
9			4.0		(20 ft) SAND, very fine, round; some silt; well sorted; wet; medium dense; 10YR 4/1 - dark gray; no odor. NOTE: 3.5 ppm at 19.5 ft.			
10			4.8		(20 ft) SAND, very fine, round; some silt; well sorted; wet; medium dense; 10YR 4/1 - dark gray; no odor. NOTE: 3.5 ppm at 19.5 ft.			
11			3.5		(20 ft) SAND, very fine, round; some silt; well sorted; wet; medium dense; 10YR 4/1 - dark gray; no odor. NOTE: 3.5 ppm at 19.5 ft.			
12	MW-19-18-20 (MS/MSD)				(20 ft) SAND, very fine, round; some silt; well sorted; wet; medium dense; 10YR 4/1 - dark gray; no odor. NOTE: 3.5 ppm at 19.5 ft.			
13			3.5		(20 ft) SAND, very fine, round; some silt; well sorted; wet; medium dense; 10YR 4/1 - dark gray; no odor. NOTE: 3.5 ppm at 19.5 ft.			
14			3.5		(20 ft) SAND, very fine, round; some silt; well sorted; wet; medium dense; 10YR 4/1 - dark gray; no odor. NOTE: 3.5 ppm at 19.5 ft.			
15			3.5		(20 ft) SAND, very fine, round; some silt; well sorted; wet; medium dense; 10YR 4/1 - dark gray; no odor. NOTE: 3.5 ppm at 19.5 ft.			
16			3.5		(20 ft) SAND, very fine, round; some silt; well sorted; wet; medium dense; 10YR 4/1 - dark gray; no odor. NOTE: 3.5 ppm at 19.5 ft.			
17			3.5		(20 ft) SAND, very fine, round; some silt; well sorted; wet; medium dense; 10YR 4/1 - dark gray; no odor. NOTE: 3.5 ppm at 19.5 ft.			
18			3.5		(20 ft) SAND, very fine, round; some silt; well sorted; wet; medium dense; 10YR 4/1 - dark gray; no odor. NOTE: 3.5 ppm at 19.5 ft.			
19			3.5		(20 ft) SAND, very fine, round; some silt; well sorted; wet; medium dense; 10YR 4/1 - dark gray; no odor. NOTE: 3.5 ppm at 19.5 ft.			
20			3.5		(20 ft) SAND, very fine, round; some silt; well sorted; wet; medium dense; 10YR 4/1 - dark gray; no odor. NOTE: 3.5 ppm at 19.5 ft.			
21			3.5		(20 ft) SAND, very fine, round; some silt; well sorted; wet; medium dense; 10YR 4/1 - dark gray; no odor. NOTE: 3.5 ppm at 19.5 ft.			

SOIL BORING AND CONSTRUCTION LOG C:\USERS\SS1008\ONE DRIVE - ARCADIS\DI-DRIVE\PROJECT FILES\BORELOGS\FILORUM LOGS\RETAIL OUTLET-97502\GEC BANGALORE\SOIL-ROCK BORING LOG V2.0 GINT FILES\GINT PROJECT.GPJ - GINT DATA TEMPLATE.GDT 2/11/21

Drilling Co.: Holt Sampling Method: Hand Auger
 Driller: Michael Running Sampling Dimensions: 7.5-8.5 / 18.0-19.0
 Drilling Method: Hollow Stem First Encountered Water (ft bgs): 8.2
 Drill Rig: Hollow Stem Auger Static Water Level (ft bgs): NA
 Remarks: _____ Top of Casing Elev: _____
 _____ Surface Elev: NA
 _____ North Coord: NA
 _____ East Coord: NA

Soil Boring Log

Client Name: Chevron Environmental Management Company Date Started: 09-21-2021 Logger: Joe Sepiol

Project Name: COP5_West_97502_WA_Sedro Woolley Date Completed: 09-22-2021 Reviewer: _____

Project Number: 30064310 Total Depth: 20.0 ft bgs

Depth (feet)	Sample ID	Rec. (ft)	PID (ppm)	Graphic	Description	Drilling Fluid and Notes	Well Installation Notes	Well Construction Details
1				(0-0.25 ft)	(0.25-4.5 ft) SAND, very fine to very coarse, angular; little silt; little small to large pebbles, subangular to round; trace granules, subround to round; poorly sorted; dry to moist; medium dense; 10YR 4/4 - dark yellowish brown; no odor. NOTE: 2.4 ppm. Likely fill - concrete and brick fragments.			
2			2.4					
3								
4								
5			2.4		(4.5-7 ft) SILT and SAND, fine to medium, angular to subangular, no plasticity, no dilatancy; trace large pebbles, angular; trace granules, subround; well sorted; moist; loose; 10YR 5/3 - brown; no odor. NOTE: 2.4 ppm. One orange pebble in recovery. No other gravel.			
6								
7								
8	MW-20-7.0-8.0		4.2		(7-8.9 ft) SAND and SILT, very fine to fine, round, low plasticity, no dilatancy; well sorted; moist to wet; medium dense; 10YR 5/1 - gray; no odor. NOTE: 5YR 4/4 staining / 4.2 ppm at 8 ft. Water at 7.5 ft.			
9								
10					(8.9-11 ft) SAND, very fine to fine, angular; well sorted; wet; loose; 10YR 4/1 - dark gray; no odor. NOTE: 4.4 ppm at 12 ft.			
11								
12			4.4		(11-17.3 ft) SAND, very fine to fine, round; some silt; well sorted; wet; medium dense; 10YR 5/1 - gray; no odor. NOTE: 2.4 ppm at 16 ft / 3.7 ppm at 14 ft / 4.2 ppm at 12 ft.			
13								
14			3.7					
15								
16	MW-20-15.0-16.0		2.4					
17								
18			3.2		(17.3-19.5 ft) SILT, medium plasticity, slow dilatancy; some very fine sand, round; some clay; wet; medium stiff; 10YR 4/1 - dark gray. NOTE: 3.2 ppm at 18 ft.			
19								
20	MW-20-19.0-20.0		2.5		(19.5-20 ft) SAND, medium, angular; little silt; little clay; well sorted; wet; loose; 10YR 3/1 - very dark gray; no odor. NOTE: 2.5 ppm at 19.5 ft.			
21					20 ft. bgs End of Boring			

Drilling Co.:	<u>Holt</u>	Sampling Method:	<u>Hand Auger</u>
Driller:	<u>Michael Running</u>	Sampling Dimensions:	<u>7.0-8.0 / 15.0-16.0</u>
Drilling Method:	<u>Hollow Stem</u>	First Encountered Water (ft bgs):	<u>7.5</u>
Drill Rig:	<u>Hollow Stem Auger</u>	Static Water Level (ft bgs):	<u>NA</u>
Remarks:	_____	Top of Casing Elev.:	_____
	_____	Surface Elev.:	<u>NA</u>
	_____	North Coord.:	<u>NA</u>
	_____	East Coord.:	<u>NA</u>

SOIL BORING AND CONSTRUCTION LOG C:\USERS\SS1008\BONE\DRIVE - ARCADIS\DI-DRIVE\PROJECT FILES\BORELOGS\FILORUM LOGS\RETAIL OUTLET - 97502\GEC BANGALORE\SOIL-ROCK BORING LOG V2.0 GINT DATA TEMPLATE PROJECT.GPJ - GINT DATA TEMPLATE.GDT 2/11/21

Soil Boring Log

Client Name: Chevron Environmental Management Company Date Started: 09-20-2021 Logger: Joe Sepiol

Project Name: COP5_West_97502_WA_Sedro Woolley Date Completed: 09-21-2021 Reviewer: _____

Project Number: 30064310 Total Depth: 20.0 ft bgs

Depth (feet)	Sample ID	Rec. (ft)	PID (ppm)	Graphic	Description	Drilling Fluid and Notes	Well Installation Notes	Well Construction Details	
0-0.4					(0-0.4 ft)			2" Borehole	
0.4-1.5					(0.4-1.5 ft) SAND, very fine to coarse, angular to round; some granules, angular to subangular; some large pebbles, angular to subangular; little clay; trace silt; well sorted; moist; very loose; 7.5R 5/1 - reddish gray; moderate odor.			8" Well Box	
1.5-5	MW-21-2.5-3.5	23.7			(1.5-5 ft) SAND, very fine to fine, angular to round; some small to large pebbles, angular to subangular; poorly sorted; moist; very loose; 7.5YR 4/1 - dark gray; moderate odor.			Concrete	
5-7.9		82.1			(5-7.9 ft) SAND, very fine to very coarse, subangular to subround; little granules, subangular to subround; little small to large pebbles, subangular to subround; little clay; little silt; poorly sorted; moist to wet; medium dense; 10YR 4/1 - dark gray; moderate odor. NOTE: 82.1 ppm.			2" Sch. 40 PVC Casing	
7.9-10.5	MW-21-9.0-10.0	14.5			(7.9-10.5 ft) SAND, very fine to very coarse, angular to round; little granules, subangular to subround; little silt; poorly sorted; moist to wet; medium dense; 10YR 4/1 - dark gray; moderate odor. NOTE: 14.5 ppm. Water at 10.2 ft.			Bentonite Chips (%)	
10.5-11					(10.5-11 ft) PEBBLES and GRANULES, small to medium, subround to round, subround to round; little very coarse sand, angular; poorly sorted; wet; very loose; 10YR 4/3 - brown; moderate odor. NOTE: All colors represented in pebbles.				
11-12.9	MW-21-11.5-12.5	8.1			(11-12.9 ft) SAND, very fine to medium, round; little granules, subround to round; little small pebbles, subround to round; well sorted; wet; medium dense; 10YR 4/1 - dark gray; no odor. NOTE: Possible gravel from layer above dropped into 12.0 to 12.5 layer.			Prepack Filter Pack (%)	
12.9-13.8	MW-21-14.0-15.0	6.8			(12.9-13.8 ft) SAND, very fine to medium, round; little silt; well sorted; wet; medium dense; 10YR 4/1 - dark gray; no odor. NOTE: 8.1 ppm.			2" 0.1-Slot Sch. 40 PVC Screen	
13.8-20	MW-21-19.0-20.0	3.1			(13.8-20 ft) SAND, very fine to medium, round; some silt; well sorted; wet; medium dense; 10YR 4/1 - dark gray; no odor. NOTE: 6.8 ppm.			Sch. 40 PVC End Cap	
					20 ft. bgs End of Boring				

Drilling Co.:	<u>Holt</u>	Sampling Method:	<u>Dual Tube</u>
Driller:	<u>Michael Running</u>	Sampling Dimensions:	<u>2.5-3.5 / 9.0-10.0 / 11.5-12.5 / 14.0-15.0 / 19.0-20.0</u>
Drilling Method:	<u>Hollow Stem</u>	First Encountered Water (ft bgs):	<u>10.2</u>
Drill Rig:	<u>Geoprobe</u>	Static Water Level (ft bgs):	<u>NA</u>
Remarks:	_____	Top of Casing Elev.:	_____
	_____	Surface Elev.:	<u>NA</u>
	_____	North Coord.:	<u>NA</u>
	_____	East Coord.:	<u>NA</u>

SOIL BORING AND CONSTRUCTION LOG C:\USERS\SS1008\ONE DRIVE - ARCADIS\ID-DRIVE\PROJECT FILES\BORELOGS\FILORUM LOGS\RETAIL OUTLET-97502\GEC BANGALORE\SOIL-ROCK BORING LOG V2.0 GINT FILES\GINT PROJECT\GPI - GINT DATA TEMPLATE.GDT 2/11/21

Soil Boring Log

Client Name: Chevron Environmental Management Company Date Started: 09-20-2021 Logger: Joe Sepiol

Project Name: COP5_West_97502_WA_Sedro Woolley Date Completed: 09-20-2021 Reviewer: _____

Project Number: 30064310 Total Depth: 20.0 ft bgs

Depth (feet)	Sample ID	Rec. (ft)	PID (ppm)	Graphic	Description	Drilling Fluid and Notes	Well Installation Notes	Well Construction Details
0-0.4					(0-0.4 ft)			2" Borehole
0.4-3.25					(0.4-3.25 ft) SAND, coarse, angular to subangular; little large cobbles, angular to subround; little small to very large pebbles, angular to subangular; little silt; little clay; poorly sorted; moist; medium dense; 10YR 3/2 - very dark grayish brown; no odor. NOTE: 1.5 ppm fill material - bricks/wood/non-native rock found throughout .			
3.25-7.6					(3.25-7.6 ft) SAND, very fine to fine, round; some silt; well sorted; moist; medium dense; 10YR 5/1 - gray; no odor. NOTE: 0.2 ppm at 5 ft. 6.3 ppm at 7 ft. 20% reddish brown mottling.			
7.6-9.1	SB-1-7.5-8.5				(7.6-9.1 ft) SILT, medium plasticity, slow dilatancy; little fine sand, round; wet; stiff; 10YR 5/2 - grayish brown; no odor; 10 YR 3/4 mottling . NOTE: Water at 8.1 ft.			
9.1-9.7					(9.1-9.7 ft) SAND, very coarse, subangular; well sorted; wet; very loose; 10YR 3/1 - very dark gray; no odor. NOTE: 6.0 ppm at 9.5 ft.			
9.7-10.5					(9.7-10.5 ft) SILT, no plasticity, no dilatancy; little very fine sand, round; little clay; well sorted; wet; stiff; 10YR 3/1 - very dark gray; no odor. NOTE: 7.2 ppm at 10 ft.			
10.5-10.9					(10.5-10.9 ft) SAND, very coarse, angular; some silt; well sorted; wet; loose; 10YR 3/1 - very dark gray; no odor.			
10.9-18.6	SB-1-15.0-16.0				(10.9-18.6 ft) CLAY, medium plasticity, slow dilatancy; some silt; little very fine sand, round; well sorted; wet; stiff; 10YR 3/1 - very dark gray; no odor. NOTE: Woody debris at 14.9 ft. 7.7 ft at 12.5 ft. 10.3 ppm at 14.5 ft. 8.8 ppm at 16 ft. 3.1 ppm at 17.5 ft .			
18.6-19.9	SB-1-19.0-20.0				(18.6-19.9 ft) SILT, no plasticity, rapid dilatancy; little clay; well sorted; wet; very soft; 10YR 5/1 - gray; no odor. NOTE: 4.1 ppm at 19.5 ft.			
19.9-20					(19.9-20 ft) SILT, no plasticity, no dilatancy; little very fine sand, round; little clay; well sorted; wet; medium stiff; 2.5Y 4/1 - dark gray; no odor.			

Drilling Co.: Holt 20 ft. bgs End of Boring Sampling Method: Hand Auger

Driller: Michael Running Sampling Dimensions: 7.5-8.5 / 15.0-16.0 / 19.0-20.0

Drilling Method: Hollow Stem First Encountered Water (ft bgs): 8.4

Drill Rig: Hollow Stem Auger Static Water Level (ft bgs): NA

Remarks: Soil Boring Only Top of Casing Elev: _____

Surface Elev: NA

North Coord: NA

East Coord: NA

SOIL BORING AND CONSTRUCTION LOG C:\USERS\SS1008\ONE DRIVE - ARCADIS\ID-DRIVE\PROJECT FILES\BORELOGS\FULORUM LOGS\RETAIL OUTLET-97502\GEC BANGALORE\SOIL-ROCK BORING LOG V2.0 GINT DATA TEMPLATE.GDT 2/11/21

Soil Boring Log

Client Name: Chevron Environmental Management Company Date Started: 09-20-2021 Logger: Joe Sepiol
 Project Name: COP5_West_97502_WA_Sedro Woolley Date Completed: 09-20-2021 Reviewer: _____
 Project Number: 30064310 Total Depth: 20.0 ft bgs

Depth (feet)	Sample ID	Rec. (ft)	PID (ppm)	Graphic	Description	Drilling Fluid and Notes	Well Installation Notes	Well Construction Details
0					(0-0.4 ft)			2" Borehole
1					(0.4-0.8 ft)			
2		1.8			(0.8-3 ft) SAND, coarse, subangular; little small to large pebbles, angular to subround; little silt; trace granules, subangular to subround; poorly sorted; moist; loose; 10YR 2/2 - very dark brown; no odor. NOTE: Likely fill. Glass and coal in gravel . 1.8 ppm.			
3					(3-8.7 ft) SAND, very fine to fine, round; some silt; well sorted; moist; loose; 10YR 5/2 - grayish brown; no odor. NOTE: 5.2 ppm.			
4								
5		5.2						
6								
7	SB-2-6.0-7.0							
8								
9		2.4			(8.7-9.9 ft) SILT, medium plasticity, slow dilatancy; some fine sand, round; little clay; well sorted; wet; medium dense; 2.5YR 5/3 - reddish brown; no odor. NOTE: 2.4 ppm at 9 ft. Water at 8.4 ft.			
10					(9.9-13.3 ft) SAND, very fine to fine, round; little silt; well sorted; wet; medium dense; 10YR 3/1 - very dark gray; moderate odor. NOTE: 35.7 ppm at 11.0 ft.			
11	SB-2-10.5-11.5		35.7					
12								
13					(13.3-15 ft) SILT, no plasticity, no dilatancy; little very fine to fine sand, round; little clay; well sorted; wet; medium dense; 10YR 4/1 - dark gray; mild odor. NOTE: 3.0 ppm at 14 ft.			
14		3.0						
15					(15-16.3 ft) SAND, very fine to fine, round; little silt; well sorted; wet; loose; 10YR 5/1 - gray; no odor. NOTE: 1.1 ppm at 16 ft.			
16	SB-2-15.5-16.5		1.1					
17					(16.3-19.3 ft) SAND, very fine, round; some silt; little clay; well sorted; wet; medium dense; 10YR 4/1 - dark gray; no odor. NOTE: 5.4 ppm at 18 ft.			
18		5.4						
19	SB-2-18.0-19.0				(19.3-20 ft) SAND, medium to coarse, angular to subangular; little silt; little clay; well sorted; wet; loose; 2.5YR 3/1 - dark reddish gray; no odor. NOTE: 1.6 ppm at 19.5 ft.			
20		1.6						
21					20 ft. bgs End of Boring			

Drilling Co.:	<u>Holt</u>	Sampling Method:	<u>Core Barrel</u>
Driller:	<u>Michael Running</u>	Sampling Dimensions:	<u>6.0-7.0 / 10.5-11.5 / 15.5-16.5 / 18.0-19.0</u>
Drilling Method:	<u>Direct-Push</u>	First Encountered Water (ft bgs):	<u>8.4</u>
Drill Rig:	<u>Geoprobe</u>	Static Water Level (ft bgs):	<u>NA</u>
Remarks:	<u>Soil Boring Only</u>	Top of Casing Elev.:	_____
	_____	Surface Elev.:	<u>NA</u>
	_____	North Coord.:	<u>NA</u>
	_____	East Coord.:	<u>NA</u>

SOIL BORING AND CONSTRUCTION LOG C:\USERS\SS1008\ONE DRIVE - ARCADIS\DI-DRIVE\PROJECT FILES\BORELOGS\FILORUM LOGS\RETAIL OUTLET-97502\GEC BANGALORE\SOIL-ROCK BORING LOG V2.0 GINT FILES\GINT PROJECT.GPJ GINT DATA TEMPLATE.GDT 2/11/21

Soil Boring Log

Client Name: Chevron Environmental Management Company Date Started: 09-21-2021 Logger: Joe Sepiol

Project Name: COP5_West_97502_WA_Sedro Woolley Date Completed: 09-21-2021 Reviewer: _____

Project Number: 30064310 Total Depth: 20.0 ft bgs

Depth (feet)	Sample ID	Rec. (ft)	PID (ppm)	Graphic	Description	Drilling Fluid and Notes	Well Installation Notes	Well Construction Details
0-0.3					(0-0.3 ft)			2" Borehole
0.3-0.4					(0.3-0.4 ft)			
0.4-4.5		2.0			(0.4-4.5 ft) SILT, no plasticity, slow dilatancy; little fine to very coarse sand, angular to subangular; little granules, subangular to subround; little small to medium pebbles, angular to subangular; poorly sorted; moist; soft; 10YR 2/1 - black. NOTE: 2.0 ppm.			
4.5-6.3		4.1			(4.5-6.3 ft) SAND, very fine to fine, angular; some silt; well sorted; moist; loose; 10YR 5/1 - gray; no odor.			
6.3-11.3					(6.3-11.3 ft) SAND, fine, round; little silt; well sorted; wet; medium dense; 10YR 5/3 - brown; no odor. NOTE: Water at 7.5 ft / 7.5YR 4/6 mottling. 1.3 ppm at 8 ft. 3.1 ppm at 10 ft.			
11.3-16.5					(11.3-16.5 ft) SAND, fine, round; little clay; little silt; well sorted; wet; medium dense; 10YR 4/1 - dark gray; no odor. NOTE: Pine needles found at 14.0 ft. Woody debris at 14.5 ft. 3.0 ppm at 12 ft. 4.1 ppm at 14.5 ft. 0.9 ppm at 16.5 ft.			
16.5-19.6					(16.5-19.6 ft) SILT, medium plasticity, slow dilatancy; some clay; little very fine sand, round; well sorted; wet; medium dense; 2.5YR 4/1 - dark reddish gray; no odor. NOTE: 0.9 ppm at 16.5 ft. 3.4 ppm at 18 ft. 0.8 ppm at 19.5 ft.			
19.6-20					(19.6-20 ft) SAND, medium, angular; little silt; well sorted; wet; loose; 10YR 3/1 - very dark gray.			
20 ft. bgs End of Boring								

Drilling Co.: <u>Holt</u>	Sampling Method: <u>Core Barrel</u>
Driller: <u>Cody Henderson</u>	Sampling Dimensions: <u>7.5-8.5 / 18.0-19.0</u>
Drilling Method: <u>Direct-Push</u>	First Encountered Water (ft bgs): <u>7.5</u>
Drill Rig: <u>Hollow Stem Auger</u>	Static Water Level (ft bgs): <u>NA</u>
Remarks: <u>Soil Boring Only</u>	Top of Casing Elev: _____
	Surface Elev: <u>NA</u>
	North Coord: <u>NA</u>
	East Coord: <u>NA</u>

SOIL BORING AND CONSTRUCTION LOG C:\USERS\SS1008\ONE DRIVE - ARCADIS\DI-DRIVE\PROJECT FILES\BORELOGS\FILORUM LOGS\RETAIL OUTLET -97502\BEC BANGALORE\SOIL-ROCK BORING LOG V2.0 GINT FILES\GINT PROJECT.GPJ GINT DATA TEMPLATE.GDT 21/12/21

Appendix D

TGI for Low-Flow Groundwater Purging and Sampling Procedures

TGI - LOW-FLOW GROUNDWATER PURGING AND SAMPLING PROCEDURES FOR MONITORING WELLS

Rev: #1

Rev Date: May 8, 2020



VERSION CONTROL

Revision No	Revision Date	Page No(s)	Description	Reviewed by
0	October 12, 2018	All	Updated and re-written as TGI with new branding and content	Marc Killingstad
1	May 8, 2020	Pages 5, 10-11	Added clarification/details for equipment requirements and procedure steps based on USEPA guidance	Marc Killingstad

APPROVAL SIGNATURES

Prepared by:



Ryan McKinney

10/12/2018

Date:

Technical Expert Reviewed by:



Marc Killingstad (Technical Expert)

May 8, 2020

Date:

1 INTRODUCTION

This document describes general and/or specific procedures, methods, actions, steps, and considerations to be used and observed by Arcadis staff when performing work, tasks, or actions under the scope and relevancy of this document. This document may describe expectations, requirements, guidance, recommendations, and/or instructions pertinent to the service, work task, or activity it covers.

It is the responsibility of the Arcadis Certified Project Manager (CPM) to provide this document to the persons conducting services that fall under the scope and purpose of this procedure, instruction, and/or guidance. The Arcadis CPM will also ensure that the persons conducting the work falling under this document are appropriately trained and familiar with its content. The persons conducting the work under this document are required to meet the minimum competency requirements outlined herein, and inquire to the CPM regarding any questions, misunderstanding, or discrepancy related to the work under this document.

This document is not considered to be all inclusive nor does it apply to all projects. It is the CPM's responsibility to determine the proper scope and personnel required for each project. There may be project- and/or client- and/or state-specific requirements that may be more or less stringent than what is described herein. The CPM is responsible for informing Arcadis and/or Subcontractor personnel of omissions and/or deviations from this document that may be required for the project. In turn, project staff are required to inform the CPM if or when there is a deviation or omission from work performed as compared to what is described herein.

In following this document to execute the scope of work for a project, it may be necessary for staff to make professional judgment decisions to meet the project's scope of work based upon site conditions, staffing expertise, regulation-specific requirements, health and safety concerns, etc. Staff are required to consult with the CPM when or if a deviation or omission from this document is required that has not already been previously approved by the CPM. Upon approval by the CPM, the staff can perform the deviation or omission as confirmed by the CPM.

2 SCOPE AND APPLICATION

Groundwater samples are collected from monitoring wells to evaluate groundwater quality. The protocol presented in this Technical Guidance Instruction (TGI) describes the procedures to purge monitoring wells and collect groundwater samples using the low flow purging/sampling methodology. This protocol has been developed in accordance with the United States Environmental Protection Agency (USEPA) Region I *Low Stress (Low Flow) Purging and Sampling Procedures for the Collection of Groundwater Samples from Monitoring Wells* (EQASOP-GW4; September 19, 2017).

Both filtered and unfiltered groundwater samples may be collected using this low-flow sampling method. Filtered samples will be obtained using a 0.45-micron disposable filter. Project teams will evaluate the last time the monitoring wells were developed and determine if additional development might be necessary. Water samples will not be taken immediately following well development. Sufficient time will be allowed for the groundwater flow regime in the vicinity of the monitoring well to stabilize and to approach chemical equilibrium with the well construction materials. This lag time will depend on site conditions and methods of installation but often exceeds one week.

3 PERSONNEL QUALIFICATIONS

Arcadis field sampling personnel will have completed or are in the process of completing site-specific training as well as having current health and safety training as required by Arcadis, client, or regulations, such as 40-hour HAZWOPER training and/or OSHA HAZWOPER site supervisor training. Arcadis personnel will also have current training as identified in the site-specific Health and Safety Plan (HASP) which may include first aid, cardiopulmonary resuscitation (CPR), Blood Borne Pathogens (BBP) as needed. The HASP will also identify any access control requirements.

Prior to mobilizing to the field, the groundwater sampling team will review and be thoroughly familiar with relevant site-specific documents including but not limited to the task-specific work plan or field implementation plan (FIP)/field sampling plan, Quality Assurance Project Plan (QAPP), HASP, historical information, and other relevant site documents.

Arcadis field sampling personnel will be knowledgeable in the relevant processes, procedures, and TGIs and possess the demonstrated required skills and experience necessary to successfully complete the desired field work. Additionally, the groundwater sampling team will review and be thoroughly familiar with documentation provided by equipment manufacturers and become familiar with the operation of (i.e., hands-on experience) all equipment that will be used in the field prior to mobilization.

4 EQUIPMENT LIST

Specific to this activity, the following materials (or equivalent) will be used:

- Site-specific HASP and health and safety documents identified in the HASP
- Field Implementation Plan (FIP) that includes site map, well construction records, sampling plan (sample analyses, sample volume required, and sample holding time), and prior groundwater sampling records (if available)
- Field notebook and/or smart device (phone or tablet)
- Low-flow sampling field forms (**Attachment A**)
- Appropriate personal protective equipment (PPE) (e.g., latex or nitrile gloves, safety glasses, etc.) as specified in the HASP
- Well keys and other tools to remove manhole covers (manual torque wrench with 9/16" socket and flat head screwdriver typical)
- Photoionization detector (PID) or Flame ionization detector (FID) (as appropriate, depending on site-specific constituents of concern)
- Electronic water-level indicator (e.g., Solinst Model 101) or oil/water interface probe with 0.01-foot accuracy (oil/water as appropriate, note that sampling will not be performed when sheen or light non-aqueous phase liquid [LNAPL] is present)
- Down-hole multi-parameter water-quality sonde (temperature/pH/specific conductivity/oxidation reduction [ORP]/turbidity/dissolved oxygen) meter coupled with flow-through-cell for measurements, for example:

- YSI 6-Series Multi-Parameter Instrument
- Horiba U-22 Multi-Parameter Instrument.
- Hydrolab Series 3 or Series 4a Multiprobe and Display.

NOTE: Transparent, small volume flow-through-cells (e.g., 250 milliliters or less) are preferred as they allow for easy detection of air bubbles and sediment buildup in the cell, which can interfere with the monitoring instrument probes. A small volume cell also allows for quick turnover of water in the cell between measurements of the indicator field parameters. It is recommended to use a flow-through-cell and monitoring probes from the same manufacturer and model to avoid incompatibility between the probes and flow-through-cell.

- Plastic sheeting (e.g., Weatherall Visqueen) to protect all down-hole sampling equipment from contact with potential sources of contamination.
- Decontamination equipment
 - Non-phosphate laboratory soap (Alconox or equivalent), brushes, clean buckets or clean wash tubs—new buckets or tubs will be purchased if it cannot be determined if the present items are clean
 - Distilled or de-ionized water for equipment decontamination
- Indelible ink pen
- 150-foot measuring tape (or sufficient length for the maximum site depth requirement)
- Sampling pump, which may consist of one or more of the following:
 - Submersible pump (e.g., Grundfos Redi-Flo 2)
 - Peristaltic pump (e.g., ISCO Model 150)
 - Bladder pump (e.g., Marschalk System 1, QED Micropurge, Geotech)
- Appropriate controller and power source for pump:
 - Submersible and peristaltic pumps require electric power from either a generator or a deep cell battery
 - Submersible pumps such as Grundfos require a pump controller to run the pump
 - Bladder pumps require a pump controller and a gas source (e.g., air compressor or compressed N₂ or CO₂ gas cylinders)
- Teflon® tubing or Teflon®-lined polyethylene tubing of an appropriate size for the pump being used
 - For peristaltic pumps, dedicated Tygon® tubing (or other type as specified by the manufacturer) will be used through the pump apparatus
 - Teflon® will not be used when sampling for per- and polyfluoroalkyl substances (PFAS)
- Graduated cylinder and stop watch or other device to measure time to determine pumping rate

- Appropriate water sample containers (supplied by the laboratory)
- Appropriate blanks (trip blank supplied by the laboratory)
- Sample labels and Chain-of-Custody forms (COC)
- 0.45-micron disposable filters (if field filtering is required)
- A supplemental turbidity meter (e.g., Horiba U-10, Hach 2100P, LaMotte 2020) may be required for specific projects and will be specified in the project FIP/ work plan and the kick-off notes.
 - If used, in-line 'T' and valve allows for collection of water for turbidity measurements before the pump discharge enters the flow-through cell

NOTE: *The maintenance requirements for the above equipment generally involve decontamination or periodic cleaning, battery charging, and proper storage, as specified by the manufacturer. For operational difficulties, the equipment will be serviced by a qualified technician.*

5 CAUTIONS

Different USEPA regions and/or state regulatory agencies may stipulate deviations from this document. It is the responsibility of the Project Team (Project Manager and Technical Lead) to be fully aware of the requirements from the applicable regulatory framework.

Weather

- If heavy precipitation occurs, and no cover over the sampling area and monitoring well can be erected, sampling may be discontinued until adequate cover is provided. Rain water could compromise groundwater samples.
- Avoid extreme weather situations. Be aware that thermal currents and vertical mixing of cold and warm water inside the well casing could create a convection cell within the well and compromise data collection (e.g., biological mechanisms).
 - Direct sunlight and hot ambient temperatures may cause the groundwater in the tubing or flow-through-cell to heat up and de-gas. This may result in the loss of volatile organic compounds (VOCs) and dissolved gases. Shade the equipment from direct sunlight, keep the tubing as short as possible, and avoid the hottest times of the day.
 - Sampling during freezing conditions may adversely impact the data quality objectives. USEPA recommends low-flow sampling be conducted at air temperatures above 32°F (0°C) or taking special precautions to prevent groundwater from freezing in the equipment.

Cross-Contamination

- To mitigate potential cross-contamination, groundwater samples are to be collected in a pre-determined order from least impacted to impacted based on previous analytical data. If no analytical data are available, collect samples in order of up-gradient, then furthest down-gradient to source area locations.

- Note that permanent markers could introduce volatile constituents into the samples; *therefore, indelible ink is recommended* to be used for labels on sample containers or sample coolers.
- When using a gasoline generator, this power source will be set-up at least 30 feet downwind from the well to avoid exhaust fumes to contaminate samples.

Pumps

- Preferred methods of extracting groundwater are adjustable rate, submersible pumps - such as centrifugal pumps or bladder pumps – constructed of stainless steel or polytetrafluoroethylene (PTFE, i.e. Teflon®). However, *PTFE will not be used when sampling for per- and polyfluoroalkyl substances (PFAS). PTFE could contain PFAS.*
- When using a bladder pump for collecting VOCs and dissolved gases, “best practice” is to set-up the pump to deliver sufficient water to fill a 40 mL VOC vial.
- The use of peristaltic pumps will be based on the type of data to be collected. *Because the use a peristaltic pump can result in de-gassing of VOC and / or dissolved gases from groundwater, a different type of pump will be considered if these compounds are of concern.*
- *Manual or motor driven inertial pumping devices are not recommended because they cause greater disturbance during purging and pumping than regular pumps and are less easily controlled. This could cause a higher degree of data variability.*

Tubing

- When sampling for VOCs, SVOCs, pesticides, PCBs and inorganics, use of PTFE (Teflon®) or PTFE-lined tubing is preferred. However, PTFE tubing will not be used when sampling for PFAS.
- PVC, polypropylene or polyethelene tubing may be used when sampling for metals or other inorganics.
- Tubing with inside diameters of 1/4 or 3/8 inch is recommended because this will help ensure tubing remains water filled when operating at very low pumping rates.

General Precautions

- Store and/or stage empty and full sample containers and coolers out of direct sunlight.
- It may be necessary to field filter the groundwater for some parameters (e.g., metals) during collection, depending on preservation, analytical method, and project quality objectives. The task-kick-off notes and the FIP/work plan will list the samples that require field filtering.
- Be careful not to overtighten lids with Teflon® liners or septa (e.g., 40 mL vials). Over-tightening can cause the glass to shatter or impair the integrity of the Teflon® seal.

6 HEALTH AND SAFETY CONSIDERATIONS

The HASP will be followed, as appropriate, to ensure the safety of field personnel.

Appropriate personal protective equipment (PPE) will be worn at all times in line with the task and the site-specific HASP.

Review all site-specific and procedural hazards as they are provided in the HASP, and review Job Safety Analysis (JSA) documents in the field each day prior to beginning work.

Access to wells may expose field personnel to hazardous materials such as contaminated groundwater or non-aqueous phase liquid (NAPL) (e.g., oil). Other potential hazards include pressurized wells, stinging insects that may inhabit well heads, other biologic hazards (e.g. ticks in long grass/weeds around well head), and potentially the use of sharp cutting tools (scissors, knife)—open well caps slowly and keep face and body away to allow to vent any built-up pressure; only use non-toxic peppermint oil spray for stinging insect nests; review client-specific health and safety requirements, which may preclude the use of fixed/folding-blade knives, and use appropriate hand protection.

Generators and cord and plug equipment will employ an overcurrent protection device such as an integrated ground fault circuit interrupter (GFCI) cord. Grundfos pump controllers will not run properly with a GFCI, so the power source will be equipped with other overcurrent protection means.

Overtightening of lids with Teflon® liners can cause the glass to shatter and create a risk for hand injuries.

7 PROCEDURE

Field personnel will set up and perform low-flow sampling in accordance with the following procedures.

1. Review FIP and groundwater sampling records from previous sampling events (if available) prior to mobilization to estimate the optimum pumping rate and anticipated drawdown for each well to perform sampling as efficiently as possible (i.e., reach a stabilized pumping condition).
2. Calibrate field instruments according to manufacturer procedures for calibration and record calibration procedure and results in field log.
3. All equipment will either be new or decontaminated in accordance with appropriate guidance document (*TGI – Groundwater and Soil Sampling Equipment Decontamination*) prior to use.
4. Visually inspect the well to ensure that it is undamaged, properly labeled and secured
 - a) Damage or other conditions that may affect the integrity of the well will be recorded in the Field Activity Daily Log and brought to the attention of the designated Field Manager and/or Project Manager
 - b) Record well construction and conditions on the Low-Flow Sampling Field Form (**Attachment A**)
5. Place clean plastic sheeting on the ground near the well to keep monitoring and sampling equipment off the surface unless the equipment is elevated above the ground (e.g. on a table).
6. Open the well cover while standing upwind of the well. Remove the well cap and place it on the plastic sheeting. If appropriate or required for site-specific conditions, insert the photoionization detector (PID) probe approximately 4 to 6 inches into the casing or the well headspace and cover it with a gloved hand. Record the PID reading in the field log. Perform air monitoring in the breathing zone according to the HASP and/or JSA.
7. Measure and record the initial depth to groundwater prior to placing the pumps.

8. Prepare and install the pump in the well.

NOTE: Groundwater will be purged from the wells using an appropriate pump. If the depth to water is below the sampling range of a peristaltic pump (approximately 25 feet below ground surface), a submersible or bladder pump will be used, provided that the well is constructed with a casing diameter of at least two (2) inches (the minimum well diameter capable of accommodating such pumps). For smaller diameter wells, where the depth to water is below the sampling range of a peristaltic pump, alternative sampling methods (i.e., bailing or small diameter bladder pumps) will be used to purge and sample the groundwater. Bladder pumps are preferred over peristaltic and submersible pumps to prevent volatilization if sampling of VOCs and/or dissolved gasses is required. Purge water will be collected and containerized according to the direction of the project team.

- a) For submersible and non-dedicated bladder pumps, decontaminate the pump according to site decontamination procedures. Non-dedicated bladder pumps will require a new bladder and attachment of an air-line, sample discharge line, and safety cable prior to placement in the well. Attach the air-line tubing to the air-port on the top of the bladder pump. Attach the sample discharge tubing to the water port on the top of the bladder pump. Take care not to reverse the air and discharge tubing lines during bladder pump setup, as this could result in bladder failure or rupture. Attach and secure a safety cable to the eyebolt on the top of pump (if present, depending on pump model used). Slowly lower the pump, safety cable, tubing, and electrical lines into the well to a depth corresponding to the approximate center of the saturated screen section of the well. Avoid twisting and tangling of safety cable, tubing, and electrical lines while lowering the pump into the well; twisted and tangled lines could result in the pump becoming stuck in the well casing. Also, make sure to keep tubing and lines from touching the ground or other surfaces while introducing them into the well, as this could lead to unintended contamination.
- b) If using a bladder pump, connect the air-line to the pump controller output port. The pump controller will be connected to a supply line from an air compressor or compressed gas cylinder using an appropriate regulator and air hose. Tighten the regulator connector onto the gas cylinder (if used) to prevent leaks. Teflon® tape may be used on the threads of the cylinder to provide a tighter seal. Once the air compressor or gas cylinder is connected to the pump controller, turn on the compressor or open the valve on the cylinder to begin the gas flow. Turn on the pump controller power (if an on/off switch is present) and verify that all batteries are charged and fully functioning before starting the pump.
- c) If a peristaltic pump is being used, slowly lower the sampling tubing into the well to a depth corresponding to the approximate center of the saturated screen section of the well. The pump intake or sampling tube must be kept at least two (2) feet above the bottom of the well to prevent mobilization of any sediment present in the bottom of the well.
- d) If using an in-line 'T' and valve, install between pump discharge water line and the bottom inlet port of the flow-through cell. Attach a short piece of tubing to the outlet. This set-up will be used to collect samples for turbidity readings.

9. Connect the pump discharge water line to the bottom inlet port on the flow-through cell connected to the multi-parameter water-quality sonde and make sure to record equipment/instrument identification (manufacturer and model number).
10. Before starting the pump, ensure that the water level inside the well has stabilized (i.e., measure the water level multiple times after deploying the pump in the well).
11. Start pumping the well at 200 to 500 milliliters (mL) per minute (or at lower site-specific rate if specified) and adjust the pumping rate to cause little or no water level drawdown in the well (less than 0.3 feet below the initial static depth to water measurement): the water level should stabilize, however, this is not always possible.
12. If the well diameter is of sufficient size, measure the water level every 3 to 5 minutes (or as appropriate, lower flow rates may require longer time between readings) during pumping.
13. Maintain a steady flow rate to the extent practicable and do not break pump suction or cause entrainment of air in the sample.
14. Record pumping rate adjustments and depths to water.

If necessary, reduce pumping rates to the minimum capabilities of the pump to avoid pumping the well dry and/or to stabilize indicator parameters; if the recharge rate of the well is very low, use alternative purging techniques, which will vary based on the well construction and screen position.

For wells screened across the water table, the well may be pumped dry and sampling can commence as soon as the volume in the well has recovered sufficiently to permit collection of samples.

For wells screened entirely below the water table, the well can be pumped until a stabilized level (which may be greater than the maximum displacement goal of 0.3 feet) is maintained and monitoring for stabilization of field indicator parameters can commence; if a lower stabilization level cannot be maintained, the well may be pumped until the drawdown is at a level slightly higher than top of the well screen.

15. After water levels have stabilized and a sufficient volume has been purged (*see note below*), continue pumping and begin monitoring field indicator parameters using a multi-parameter water-quality sonde coupled with a flow-through-cell.

NOTE: The final purge volume must be greater than the stabilized drawdown volume plus the pump's tubing volume. If the drawdown has exceeded 0.3 feet and stabilizes, calculate the volume of water between the initial water level and the stabilized water level. Add the volume of the water which occupies the pump's tubing to this calculation. This combined volume of water needs to be purged from the well after the water level has stabilized before samples are collected.

16. Use the flow to measure all indicator field parameters, except for turbidity, every 3 to 5 minutes (or after each volume of the flow-through cell has been purged or other appropriate interval); turbidity samples will be collected before the flow-through-cell using the T-valve and a clean container such as a glass beaker.
17. Record field indicator parameters on the groundwater sampling log.

18. The well is considered stabilized and ready for sample collection when three consecutive readings are within the following limits:

- **Turbidity** within $\pm 10\%$ for values greater than 5 nephelometric turbidity units [NTUs] or if three turbidity values are less than 5 NTUs, consider the values stabilized
- **Dissolved Oxygen (DO)** within $\pm 10\%$ for values greater than 0.5 mg/L or if three DO values are less than 0.5 mg/L, consider the values stabilized
- **Specific Conductance** within $\pm 3\%$
- **Temperature** within $\pm 3\%$
- **pH** within ± 0.1 unit
- **Oxidation/Reduction Potential (ORP)** within ± 10 millivolts (mV)

NOTE: *Alternate stabilization goals may exist in different geographic regions, consult the site-specific FIP/work plan for stabilization criteria).*

NOTE: *While achieving turbidity levels less than 5 NTU and a stable drawdown of less than 0.3 feet is desirable, sample collection may still take place provided the indicator field parameter criteria in this procedure are met.*

19. If the parameters have stabilized but turbidity remains relatively high (e.g., greater than 50 NTUs), the pump flow rate may be decreased to a minimum rate of 100 mL/min to reduce turbidity levels as low as possible. If groundwater turbidity has been minimized (i.e., consecutive readings within $\pm 10\%$) and the values for all other parameters have stabilized, the well may be sampled; however, consult specifications in the FIP/work plan and/or the project technical lead prior to sampling.

20. If after one (1) hour of purging indicator field parameters have not stabilized, consult specifications in the FIP/work plan and/or the project technical lead prior to sampling.

In general, three potential options are available if stabilization criteria are not met:

- a) Continue purging until stabilization is achieved.
- b) Discontinue purging, do not collect any samples, and record in field logbook/on the sampling form that stabilization could not be achieved (documentation must describe attempts to achieve stabilization).
- c) Discontinue purging, collect samples and provide full explanation of attempts to achieve stabilization. *There is a risk that the analytical data obtained under these conditions, particularly metals and hydrophobic organic analytes, may reflect a sampling bias and, as a result, the data may not meet the data quality objectives of the sampling event.*

NOTE: *DO is extremely susceptible to various external influences (including temperature or the presence of bubbles on the DO meter); therefore, great care will be taken to minimize the agitation or other disturbance of water within the flow-through cell while collecting these measurements. If air bubbles are present on the DO probe or in the discharge tubing, remove them before taking a measurement. If DO values are not within acceptable range for the temperature of groundwater, again check for and remove air bubbles on the probe before re-measuring. The table below may be*

used as a general guide for DO values under various temperatures; however, understand that the table corresponds to freshwater solubility and groundwater contaminants may affect oxygen solubility. If DO value is 0.00 or less, then the meter will be serviced and re-calibrated. If DO values are above possible results, then the meter will be serviced and re-calibrated.

NOTE: During extreme weather conditions, stabilization of field indicator parameters may be difficult to attain. Modifications to the sampling procedures to alleviate these conditions (e.g., measuring the water temperature in the well adjacent to the pump intake) will be documented in the field logbook/on the sampling form.

NOTE: If other field conditions are suspected of preventing stabilization of certain parameters, detailed observations will be documented in the field logbook/on the sampling form.

Oxygen Solubility in Fresh Water

Temperature (degrees C)	Dissolved Oxygen (mg/L)
0	14.6
1	14.19
2	13.81
3	13.44
4	13.09
5	12.75
6	12.43
7	12.12
8	11.83
9	11.55
10	11.27
11	11.01
12	10.76
13	10.52
14	10.29
15	10.07
16	9.85
17	9.65
18	9.45
19	9.26
20	9.07
21	8.9
22	8.72
23	8.56
24	8.4
25	8.24
26	8.09
27	7.95
28	7.81
29	7.67
30	7.54
31	7.41
32	7.28
33	7.16
34	7.05
35	6.93

Reference: Vesilind, P.A., *Introduction to Environmental Engineering*, PWS Publishing Company, Boston, 468 pages (1996).

21. Complete the sample label(s) and cover the label(s) with clear packing tape to secure the label onto the container.
22. After the indicator parameters have stabilized, collect groundwater samples by diverting flow out of the unfiltered discharge tubing into the appropriate labeled sample container.
 - a) If a flow-through analytical cell is being used to measure field parameters, the flow-through cell will be disconnected after stabilization of the field indicator parameters and prior to groundwater sample collection.
 - b) Under no circumstances will analytical samples be collected from the discharge of the flow-through cell.
 - c) If an in-line 'T' and valve are used, the valve needs to be removed as well.
 - d) Samples will be collected in the following order: VOCs, total organic carbon (TOC), semi-volatile organic compounds (SVOCs), metals and cyanide, and others (or other order as defined in the site-specific FIP/work plan).
 - e) When the container is full, tightly screw on the cap.
23. If sampling for total and filtered metals and/or polychlorinated biphenyls (PCBs), a filtered and unfiltered sample will be collected.
 - a) Install an in-line, disposable 0.45-micron particle filter on the discharge tubing after the appropriate unfiltered groundwater sample has been collected.
 - b) Continue to run the pump until an initial volume of "flush" water has been run through the filter in accordance with the manufacturer's directions (generally 100 to 300 mL).
 - c) Collect the filtered groundwater sample by diverting flow out of the filter into the appropriately labeled sample container.
 - d) When the container is full, tightly screw on the cap.
24. Secure with packing material and store the samples on ice in an insulated transport container provided by the laboratory and include a temperature blank in each container to be shipped.
25. Record on the Low-Flow Sampling Field Form (and bound field logbook) the time at which sampling procedures were completed, any pertinent observations of the sample (e.g., physical appearance and the presence or lack of odors or sheens), and the values of the stabilized field indicator parameters as measured during the final reading during purging (see **Attachment A**).
26. Turn off the pump and air compressor or close the gas cylinder valve if using a bladder pump setup.
27. Slowly remove the pump, tubing, lines, and safety cable from the well.
 - a) If using dedicated tubing, do not allow the tubing or lines to touch the ground or any other surfaces which could contaminate them.
 - b) If using dedicated tubing, it will be folded - without pinching it - to a length that will allow the well to be capped and also facilitate retrieval of the tubing during later sampling events.
 - c) Use a length of rope or string to tie the tubing to the well cap.

- d) Alternatively, if tubing and safety line are to be saved and reused for sampling the well at a later date, coil the tubing neatly and placed in a clean plastic bag that is clearly labeled with the well ID ensuring the bag is tightly sealed before placing it in storage.
28. Secure the well and properly dispose of personal protective equipment (PPE) and disposable equipment.
29. Complete the procedures for packaging, shipping, and handling with the associated Chain-of-Custody.
30. Complete decontamination for flow-through analytical cell and submersible or bladder pump, as appropriate (*TGI – Groundwater and Soil Sampling Equipment Decontamination*).
31. At the end of each day of the sampling event, perform calibration check of field instruments and record procedure and results in field log.

8 WASTE MANAGEMENT

Materials generated during groundwater sampling activities, including disposable equipment and excess purge water, will be stored on site in appropriately labeled containers and disposed of properly. Waste will be managed in accordance with the *TGI – Investigation-Derived Waste Handling and Storage*, the procedures identified in the FIP or QAPP as well as state-, federal- or client-specific requirements. Be certain that waste containers are properly labeled and documented in the field logbook.

9 DATA RECORDING AND MANAGEMENT

Management of the original documents from the field will be completed in accordance with the site-specific QAPP.

In general, forms (e.g., Low-Flow Sampling Field Forms), logs/notes (including daily field and calibration logs), digital records, and Chain-of-Custody records will be maintained by the field team lead.

Field logs and Chain-of-Custody records will be transmitted to the Arcadis Project Manager and/or Task Manager, as appropriate, at the end of each day unless otherwise directed. Electronic data files will be sent to the project team and uploaded to the electronic project folder daily.

Records generated as a result of this TGI will be controlled and maintained in the project record files in accordance with project requirements.

10 QUALITY ASSURANCE

Quality assurance procedures shall be conducted in accordance with the Arcadis Quality Management System or the site-specific QAPP.

Unless described otherwise in the project-specific FIP/work plan, QAPP, or Sampling and Analysis Plan, quality assurance/quality control samples will be collected as follows:

- One duplicate for every 10 samples

- One laboratory matrix/matrix spike sample for every 20 samples

In addition to the quality control samples to be collected in accordance with this TGI, the following quality control procedures will be observed in the field:

- Collect samples from monitoring wells, in order of increasing concentration, to the extent known based on review of historical site information if available
- Equipment blanks will include the pump and tubing (if using disposable tubing) or the pump only (if using tubing dedicated to each well)
- Collect equipment blanks after wells with higher concentrations (if known) have been sampled
- Operate all monitoring instrumentation in accordance with manufacturer's instructions and calibration procedures—calibrate instruments at the beginning of each day, verify the calibration at the end of each day, and record all calibration activities in the field notebook
- Clean all groundwater sampling equipment prior to use in the first well and after each subsequent well following the procedure for equipment decontamination

11 REFERENCES

- USEPA. 1986. *RCRA Groundwater Monitoring Technical Enforcement Guidance Document* (September 1986).
- USEPA. 1991. *Handbook Groundwater, Volume II Methodology*, Office of Research and Development, Washington, DC. USEPN62S, /6-90/016b (July 1991).
- USEPA Region I. 2017. *Low Stress (Low Flow) Purging and Sampling Procedures for the Collection of Groundwater Samples from Monitoring Wells* (EQASOP-GW4; September 19, 2017).
- U.S. Geological Survey (USGS). 1977. *National Handbook of Recommended Methods for Water-Data Acquisition: USGS Office of Water Data Coordination*. Reston, Virginia.

12 ATTACHMENTS

- A. Low-Flow Sampling Field Form



Appendix E

Groundwater Sampling Field Forms

97502, MW-4, 2021-09-28, 13:00, GW Sampling

Created	2021-09-28 19:25:41 UTC by Joe Sepiol
Updated	2021-09-28 19:55:45 UTC by Joe Sepiol
Location	48.5055270279278, -122.238966152186
Status	■ QC Complete

Note: Before you begin, have you synced?

Project Details

Chevron	Chevron
Site ID	97502, Retail Outlet 97502
Site ID	97502
Site Location City	Sedro Woolley
Site Location State	Washington
Site Location	Sedro Woolley, Washington
Project Number	30064310, Hamilton, Ada
Project Number	30064310
Date	2021-09-28
Sampling Event	Quarterly
Weather	Cloudy
Sampler Name	Joe Sepiol
Additional field staff?	No

Well (Location) Details

IMPORTANT! You must create a SEPARATE groundwater sampling record after creating a gauging record. Do not change your gauging record into a groundwater sampling record. If you have questions, ask your TM!

Well ID	MW-4
Well ID	MW-4
Turboscope Database ID	3607
Are you able to locate this well?	Yes
Work Performed at Location	GW Sampling

Well Information

Top of Screen (ft-bgs)	4.0
Bottom of Screen (ft-bgs)	20.0
Casing Diameter (in)	4.0
Well Casing Material	PVC
Measuring Point Description	Top of Casing
Historic Average DTW (ft-bmp)	7.0

Gauging

Are you able to gauge this well?	Yes
----------------------------------	-----

Gauging Details

Type of Gauging Equipment	Interface Probe
Gauging Equipment ID	3000
Well Head PID Reading (ppm)	0

Gauging Time	12:26
Is Well Dry?	No
Is Product Present?	No
Was product removed?	No
Static Water Level (ft-bmp)	9.8
Static Water Level (Fixed)	9.8
DTW QC Check	QC Pass
Total Depth (ft-bmp)	15.6
Total Depth (Fixed)	15.6
TD QC Check	QC Pass
Water Column (ft)	5.8
Gallons in Well	3.77

Evacuation

Method details, purge/no-purge information, and field parameters.

Evacuation Details

Method Details

Purge Method	Low-Flow
Purge Equipment	Peristaltic
Water Quality Meter Make/Model (Select One or More)	YSI Pro Plus
Water Quality Meter ID(s)	4278
Decontamination Method	2 Stage Rinse

No-Purge: PDB/Hydrasleeve

Note: Selecting "Both" assumes details regarding the same Hydrasleeve/PDB

Deployment Details

PDB Details

A modified Trip Blank must be taken at time of deployment.

A modified Equipment Blank of fill water must be taken at time of deployment.

Purge Details

Purge Depth (ft-bmp) (e.g. Pump Intake)	13
Purge Start	12:32
Purge End (Before Sample Collection)	12:32
Purge Measurement Units	Milliliters
Total Milliliters Purged	5000
Well Volumes Purged (total)	0.35

Volumetric Details

Borehole Volume Multiplier: _____ CD | BD Multiplier 2" | 8" 0.8 2" | 10" 1.1 4" | 8" 1.1 4" | 10" 1.5 4" | 12" 2.0 6" | 10" 2.1 6" | 12" 2.6 _____ BD = Borehole Diameter CD = Casing Diameter " = inches

One Borehole Volume (gallons)	0
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Specified Volumes	1.5
Calculated Volume (gallons)	0

Enter purging and final field parameters in the Field Parameters section below.

@12:32, DTW:9.86, pH6.45, temp:16.1, cond:0.326,turb:11.6, DO:0.64, redox:77.7

Site ID, Well ID	97502, MW-4
Reading Time	12:32
Total Elapsed Minutes	0
Rate (mL/min)	150
Depth to Water (ft)	9.86
Total Volume Purged (mL)	0
pH	6.45
pH 2 decimals	6.45
Conductivity (mS/cm)	0.326
cond sig figs	0.326

Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).

Turbidity (NTU)	11.6
turbidity sig figs	11.6
Dissolved Oxygen (mg/L)	0.64
DO 2 decimals	0.64
Temperature (Degrees Celcius)	16.1
temp 2 decimals	16.10
Redox (ORP mV)	77.7
Color	Clear
Notable Odors	None

parameters @12:32, DTW:9.86, pH6.45, temp:16.1, cond:0.326,turb:11.6, DO:0.64, redox:77.7

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@12:37, DTW:9.94, pH6.46, temp:16.3, cond:0.331,turb:9.33, DO:0.17, redox:72.6

Site ID, Well ID	97502, MW-4
Reading Time	12:37
Minutes Elapsed between readings	5
Total Elapsed Minutes	5
Rate (mL/min)	150
Depth to Water (ft)	9.94
Total Volume Purged (mL)	1500
pH	6.46
pH 2 decimals	6.46
Conductivity (mS/cm)	0.331
cond sig figs	0.331

Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).

Turbidity (NTU)	9.33
turbidity sig figs	9.3
Dissolved Oxygen (mg/L)	0.17
DO 2 decimals	0.17
Temperature (Degrees Celcius)	16.3
temp 2 decimals	16.30
Redox (ORP mV)	72.6
Color	Clear
Notable Odors	None
parameters	@12:37, DTW:9.94, pH6.46, temp:16.3, cond:0.331,turb:9.33, DO:0.17, redox:72.6
Stabilization Calculation - TGI	Continue purging, the parameters are not stable: pH is not stable ; conductivity is not stable ; turbidity is not stable ; DO is not stable ; temperature is not stable ; ORP is not stable ; time elapsed is 5 minutes
Stabilization Calculation - site 775040	Continue purging, the parameters are not stable: pH is not stable ; conductivity is not stable ; turbidity is not stable ; DO is not stable ; temperature is not stable ; ORP is not stable ; time elapsed is 5 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@12:42, DTW:9.99, pH6.47, temp:16.4, cond:0.332,turb:4.34, DO:0.1, redox:71.3

Site ID, Well ID	97502, MW-4
Reading Time	12:42
Minutes Elapsed between readings	5
Total Elapsed Minutes	10
Rate (mL/min)	150
Depth to Water (ft)	9.99
Total Volume Purged (mL)	2250
pH	6.47
pH 2 decimals	6.47
Conductivity (mS/cm)	0.332
cond sig figs	0.332
Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).	
Turbidity (NTU)	4.34
turbidity sig figs	4.3
Dissolved Oxygen (mg/L)	0.1
DO 2 decimals	0.10
Temperature (Degrees Celcius)	16.4
temp 2 decimals	16.40
Redox (ORP mV)	71.3
Color	Clear
Notable Odors	None
parameters	@12:42, DTW:9.99, pH6.47, temp:16.4, cond:0.332,turb:4.34, DO:0.1, redox:71.3

Stabilization Calculation - TGI

Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is not stable ; DO is not stable ; temperature is stable ; ORP is stable ; time elapsed is 10 minutes

Stabilization Calculation - site 775040

Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is not stable ; DO is not stable ; temperature is stable ; ORP is stable ; time elapsed is 10 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@12:47, DTW:10.02, pH6.48, temp:16.6, cond:0.333,turb:4.5, DO:0.1, redox:70.6

Site ID, Well ID 97502, MW-4

Reading Time 12:47

Minutes Elapsed between readings 5

Total Elapsed Minutes 15

Rate (mL/min) 150

Depth to Water (ft) 10.02

Total Volume Purged (mL) 3000

pH 6.48

pH 2 decimals 6.48

Conductivity (mS/cm) 0.333

cond sig figs 0.333

Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).

Turbidity (NTU) 4.5

turbidity sig figs 4.5

Dissolved Oxygen (mg/L) 0.1

DO 2 decimals 0.10

Temperature (Degrees Celcius) 16.6

temp 2 decimals 16.60

Redox (ORP mV) 70.6

Color Clear

Notable Odors None

parameters @12:47, DTW:10.02, pH6.48, temp:16.6, cond:0.333,turb:4.5, DO:0.1, redox:70.6

Stabilization Calculation - TGI

Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is not stable ; DO is stable ; temperature is stable ; ORP is stable ; time elapsed is 15 minutes

Stabilization Calculation - site 775040

Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is not stable ; DO is not stable ; temperature is stable ; ORP is stable ; time elapsed is 15 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@12:52, DTW:10.15, pH6.49, temp:16.6, cond:0.334,turb:2.51, DO:0.09, redox:70.1

Site ID, Well ID	97502, MW-4
Reading Time	12:52
Minutes Elapsed between readings	5
Total Elapsed Minutes	20
Rate (mL/min)	150
Depth to Water (ft)	10.15
Total Volume Purged (mL)	3750
pH	6.49
pH 2 decimals	6.49
Conductivity (mS/cm)	0.334
cond sig figs	0.334
Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).	
Turbidity (NTU)	2.51
turbidity sig figs	2.5
Dissolved Oxygen (mg/L)	0.09
DO 2 decimals	0.09
Temperature (Degrees Celcius)	16.6
temp 2 decimals	16.60
Redox (ORP mV)	70.1
Color	Clear
Notable Odors	None
parameters	@12:52, DTW:10.15, pH6.49, temp:16.6, cond:0.334,turb:2.51, DO:0.09, redox:70.1
Stabilization Calculation - TGI	You may sample the well.
Stabilization Calculation - site 775040	Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is not stable ; DO is not stable ; temperature is stable ; ORP is stable ; time elapsed is 20 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

Sampling

Are you able to sample this location?	Yes
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Sample Information

Sample ID	MW-4-20210928
Sample Time	13:00
Sample Type	Grab
Sample Equipment	Peristaltic
Field Filtered Sample?	No
Sample Depth (ft-bmp) (e.g. pump intake)	13
Color	Clear
Notable Odors	None

Analytes and Methods

See Chain-of-Custody.

Well Inspection

Well inspection completed?

No

Close Out

General Comments

None

Photos



Is this record complete?

Yes

97502, MW-5, 2021-09-28, 11:55, GW Sampling

Created	2021-09-28 18:00:45 UTC by Joe Sepiol
Updated	2021-09-28 19:56:00 UTC by Joe Sepiol
Location	48.505514455073, -122.238950813303
Status	■ QC Complete

Note: Before you begin, have you synced?

Project Details

Chevron	Chevron
Site ID	97502, Retail Outlet 97502
Site ID	97502
Site Location City	Sedro Woolley
Site Location State	Washington
Site Location	Sedro Woolley, Washington
Project Number	30064310, Hamilton, Ada
Project Number	30064310
Date	2021-09-28
Sampling Event	Quarterly
Weather	Cloudy
Sampler Name	Joe Sepiol
Additional field staff?	No

Well (Location) Details

IMPORTANT! You must create a SEPARATE groundwater sampling record after creating a gauging record. Do not change your gauging record into a groundwater sampling record. If you have questions, ask your TM!

Well ID	MW-5
Well ID	MW-5
Turboscope Database ID	3608
Are you able to locate this well?	Yes
Work Performed at Location	GW Sampling

Well Information

Top of Screen (ft-bgs)	4.5
Bottom of Screen (ft-bgs)	20.0
Casing Diameter (in)	4.0
Well Casing Material	PVC
Measuring Point Description	Top of Casing
Historic Average DTW (ft-bmp)	8.0

Gauging

Are you able to gauge this well?	Yes
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Gauging Details

Type of Gauging Equipment	Interface Probe
Gauging Equipment ID	3000
Well Head PID Reading (ppm)	0

Gauging Time	11:02
Is Well Dry?	No
Is Product Present?	No
Was product removed?	No
Static Water Level (ft-bmp)	10.25
Static Water Level (Fixed)	10.25
DTW QC Check	QC Pass
Total Depth (ft-bmp)	17.23
Total Depth (Fixed)	17.23
TD QC Check	QC Pass
Water Column (ft)	6.98
Gallons in Well	4.54

Evacuation

Method details, purge/no-purge information, and field parameters.

Evacuation Details

Method Details

Purge Method	Low-Flow
Purge Equipment	Peristaltic
Water Quality Meter Make/Model (Select One or More)	YSI Pro Plus
Water Quality Meter ID(s)	4278
Decontamination Method	2 Stage Rinse

No-Purge: PDB/Hydrasleeve

Note: Selecting "Both" assumes details regarding the same Hydrasleeve/PDB

Deployment Details

PDB Details

A modified Trip Blank must be taken at time of deployment.

A modified Equipment Blank of fill water must be taken at time of deployment.

Purge Details

Purge Depth (ft-bmp) (e.g. Pump Intake)	14
Purge Start	11:15
Purge End (Before Sample Collection)	11:45
Purge Measurement Units	Milliliters
Total Milliliters Purged	6000
Well Volumes Purged (total)	0.35

Volumetric Details

Borehole Volume Multiplier: _____ CD | BD Multiplier 2" | 8" 0.8 2" | 10" 1.1 4" | 8" 1.1 4" | 10" 1.5 4" | 12" 2.0 6" | 10" 2.1 6" | 12" 2.6 _____ BD = Borehole Diameter CD = Casing Diameter " = inches

One Borehole Volume (gallons)	0
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Specified Volumes	1.5
Calculated Volume (gallons)	0
Enter purging and final field parameters in the Field Parameters section below.	

@11:15, DTW:10.35, pH6.31, temp:15.1, cond:0.256,turb:97, DO:1.45, redox:-12.1

Site ID, Well ID	97502, MW-5
Reading Time	11:15
Total Elapsed Minutes	0
Rate (mL/min)	150
Depth to Water (ft)	10.35
Total Volume Purged (mL)	0
pH	6.31
pH 2 decimals	6.31
Conductivity (mS/cm)	0.256
cond sig figs	0.256

Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).

Turbidity (NTU)	97
turbidity sig figs	97.0
Dissolved Oxygen (mg/L)	1.45
DO 2 decimals	1.45
Temperature (Degrees Celcius)	15.1
temp 2 decimals	15.10
Redox (ORP mV)	-12.1
Color	Orange solids
Notable Odors	None
parameters	@11:15, DTW:10.35, pH6.31, temp:15.1, cond:0.256,turb:97, DO:1.45, redox:-12.1

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@11:20, DTW:10.45, pH6.27, temp:14.9, cond:0.256,turb:60.1, DO:0.52, redox:-22.1

Site ID, Well ID	97502, MW-5
Reading Time	11:20
Minutes Elapsed between readings	5
Total Elapsed Minutes	5
Rate (mL/min)	150
Depth to Water (ft)	10.45
Total Volume Purged (mL)	750
pH	6.27
pH 2 decimals	6.27
Conductivity (mS/cm)	0.256
cond sig figs	0.256

Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).

Turbidity (NTU)	60.1
turbidity sig figs	60.1
Dissolved Oxygen (mg/L)	0.52
DO 2 decimals	0.52
Temperature (Degrees Celcius)	14.9
temp 2 decimals	14.90
Redox (ORP mV)	-22.1
Color	Reddish Brown
Notable Odors	None
parameters	@11:20, DTW:10.45, pH6.27, temp:14.9, cond:0.256,turb:60.1, DO:0.52, redox:-22.1
Stabilization Calculation - TGI	Continue purging, the parameters are not stable: pH is not stable ; conductivity is not stable ; turbidity is not stable ; DO is not stable ; temperature is not stable ; ORP is not stable ; time elapsed is 5 minutes
Stabilization Calculation - site 775040	Continue purging, the parameters are not stable: pH is not stable ; conductivity is not stable ; turbidity is not stable ; DO is not stable ; temperature is not stable ; ORP is not stable ; time elapsed is 5 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@11:25, DTW:10.66, pH6.28, temp:14.9, cond:0.256,turb:41.9, DO:0.26, redox:-26.7

Site ID, Well ID	97502, MW-5
Reading Time	11:25
Minutes Elapsed between readings	5
Total Elapsed Minutes	10
Rate (mL/min)	150
Depth to Water (ft)	10.66
Total Volume Purged (mL)	1500
pH	6.28
pH 2 decimals	6.28
Conductivity (mS/cm)	0.256
cond sig figs	0.256
Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).	
Turbidity (NTU)	41.9
turbidity sig figs	41.9
Dissolved Oxygen (mg/L)	0.26
DO 2 decimals	0.26
Temperature (Degrees Celcius)	14.9
temp 2 decimals	14.90
Redox (ORP mV)	-26.7
Color	Reddish Brown
Notable Odors	None
parameters	@11:25, DTW:10.66, pH6.28, temp:14.9, cond:0.256,turb:41.9, DO:0.26, redox:-26.7

Stabilization Calculation - TGI

Continue purging, the parameters are not stable: pH is stable ; conductivity is not stable ; turbidity is not stable ; DO is not stable ; temperature is stable ; ORP is not stable ; time elapsed is 10 minutes

Stabilization Calculation - site 775040

Continue purging, the parameters are not stable: pH is stable ; conductivity is not stable ; turbidity is not stable ; DO is not stable ; temperature is stable ; ORP is not stable ; time elapsed is 10 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@11:30, DTW:10.78, pH6.3, temp:15.2, cond:0.256,turb:27.5, DO:0.25, redox:-28

Site ID, Well ID 97502, MW-5

Reading Time 11:30

Minutes Elapsed between readings 5

Total Elapsed Minutes 15

Rate (mL/min) 150

Depth to Water (ft) 10.78

Total Volume Purged (mL) 2250

pH 6.3

pH 2 decimals 6.30

Conductivity (mS/cm) 0.256

cond sig figs 0.256

Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).

Turbidity (NTU) 27.5

turbidity sig figs 27.5

Dissolved Oxygen (mg/L) 0.25

DO 2 decimals 0.25

Temperature (Degrees Celcius) 15.2

temp 2 decimals 15.20

Redox (ORP mV) -28

Color Clear

Notable Odors None

parameters @11:30, DTW:10.78, pH6.3, temp:15.2, cond:0.256,turb:27.5, DO:0.25, redox:-28

Stabilization Calculation - TGI

Continue purging, the parameters are not stable: pH is stable ; conductivity is not stable ; turbidity is not stable ; DO is not stable ; temperature is stable ; ORP is stable ; time elapsed is 15 minutes

Stabilization Calculation - site 775040

Continue purging, the parameters are not stable: pH is stable ; conductivity is not stable ; turbidity is not stable ; DO is not stable ; temperature is stable ; ORP is stable ; time elapsed is 15 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@11:35, DTW:10.81, pH6.31, temp:15.3, cond:0.256,turb:24.1, DO:0.34, redox:-28.3

Site ID, Well ID	97502, MW-5
Reading Time	11:35
Minutes Elapsed between readings	5
Total Elapsed Minutes	20
Rate (mL/min)	150
Depth to Water (ft)	10.81
Total Volume Purged (mL)	3000
pH	6.31
pH 2 decimals	6.31
Conductivity (mS/cm)	0.256
cond sig figs	0.256
Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).	
Turbidity (NTU)	24.1
turbidity sig figs	24.1
Dissolved Oxygen (mg/L)	0.34
DO 2 decimals	0.34
Temperature (Degrees Celcius)	15.3
temp 2 decimals	15.30
Redox (ORP mV)	-28.3
Color	Clear
Notable Odors	None
parameters	@11:35, DTW:10.81, pH6.31, temp:15.3, cond:0.256,turb:24.1, DO:0.34, redox:-28.3
Stabilization Calculation - TGI	Continue purging, the parameters are not stable: pH is stable ; conductivity is not stable ; turbidity is not stable ; DO is stable ; temperature is stable ; ORP is stable ; time elapsed is 20 minutes
Stabilization Calculation - site 775040	Continue purging, the parameters are not stable: pH is stable ; conductivity is not stable ; turbidity is not stable ; DO is not stable ; temperature is stable ; ORP is stable ; time elapsed is 20 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@11:40, DTW:10.85, pH6.32, temp:15.5, cond:0.256,turb:25.2, DO:0.35, redox:-28.7

Site ID, Well ID	97502, MW-5
Reading Time	11:40
Minutes Elapsed between readings	5
Total Elapsed Minutes	25
Rate (mL/min)	150
Depth to Water (ft)	10.85
Total Volume Purged (mL)	3750
pH	6.32
pH 2 decimals	6.32
Conductivity (mS/cm)	0.256

cond sig figs	0.256
Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).	
Turbidity (NTU)	25.2
turbidity sig figs	25.2
Dissolved Oxygen (mg/L)	0.35
DO 2 decimals	0.35
Temperature (Degrees Celcius)	15.5
temp 2 decimals	15.50
Redox (ORP mV)	-28.7
Color	Clear
Notable Odors	None
parameters	@11:40, DTW:10.85, pH6.32, temp:15.5, cond:0.256,turb:25.2, DO:0.35, redox:-28.7
Stabilization Calculation - TGI	Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is not stable ; DO is stable ; temperature is stable ; ORP is stable ; time elapsed is 25 minutes
Stabilization Calculation - site 775040	Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is not stable ; DO is not stable ; temperature is stable ; ORP is stable ; time elapsed is 25 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@11:45, DTW:10.89, pH6.32, temp:15.5, cond:0.256,turb:23.3, DO:0.35, redox:-28.8

Site ID, Well ID	97502, MW-5
Reading Time	11:45
Minutes Elapsed between readings	5
Total Elapsed Minutes	30
Rate (mL/min)	150
Depth to Water (ft)	10.89
Total Volume Purged (mL)	4500
pH	6.32
pH 2 decimals	6.32
Conductivity (mS/cm)	0.256
cond sig figs	0.256
Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).	
Turbidity (NTU)	23.3
turbidity sig figs	23.3
Dissolved Oxygen (mg/L)	0.35
DO 2 decimals	0.35
Temperature (Degrees Celcius)	15.5
temp 2 decimals	15.50
Redox (ORP mV)	-28.8
Color	Clear
Notable Odors	None

parameters	@11:45, DTW:10.89, pH6.32, temp:15.5, cond:0.256,turb:23.3, DO:0.35, redox:-28.8
Stabilization Calculation - TGI	You may sample the well.
Stabilization Calculation - site 775040	Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is not stable ; DO is stable ; temperature is stable ; ORP is stable ; time elapsed is 30 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

Sampling

Are you able to sample this location?	Yes
---------------------------------------	-----

Sample Information

Sample ID	MW-5-20210928
Sample Time	11:55
Sample Type	Grab
Sample Equipment	Peristaltic
Field Filtered Sample?	No
Sample Depth (ft-bmp) (e.g. pump intake)	14
Color	Clear
Notable Odors	None
Analytes and Methods	See Chain-of-Custody.

Well Inspection

Well inspection completed?	Yes
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Well Inspection Details

Is well easy to locate?	Yes
Well Type	Flushmount
Is well in an area prone to flooding?	No
Are well labels present on the outside of the well?	No
Are bolts missing?	No
Are well labels present on the inside of the well?	No
Lock present?	No
Well housing pad in good shape?	Yes

Close Out

General Comments	None
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Photos



Is this record complete?

Yes

97502, MW-6, 2021-09-27, 14:00, GW Sampling

Created	2021-09-27 20:06:24 UTC by Brian Pauley
Updated	2021-09-27 21:20:32 UTC by Brian Pauley
Location	48.5055475216811, -122.238629618773
Status	■ Ready for QC

Note: Before you begin, have you synced?

Project Details

Chevron	Chevron
Site ID	97502, Retail Outlet 97502
Site ID	97502
Site Location City	Sedro Woolley
Site Location State	Washington
Site Location	Sedro Woolley, Washington
Project Number	30064310, Hamilton, Ada
Project Number	30064310
Date	2021-09-27
Sampling Event	Quarterly
Weather	Raining
Sampler Name	Brian Pauley
Additional field staff?	No

Well (Location) Details

IMPORTANT! You must create a SEPARATE groundwater sampling record after creating a gauging record. Do not change your gauging record into a groundwater sampling record. If you have questions, ask your TM!

Well ID	MW-6
Well ID	MW-6
Turboscope Database ID	3609
Are you able to locate this well?	Yes
Work Performed at Location	GW Sampling

Well Information

Top of Screen (ft-bgs)	5.0
Bottom of Screen (ft-bgs)	20.0
Casing Diameter (in)	2.0
Well Casing Material	PVC
Measuring Point Description	Top of Casing
Historic Average DTW (ft-bmp)	8.0

Gauging

Are you able to gauge this well?	Yes
----------------------------------	-----

Gauging Details

Type of Gauging Equipment	Interface Probe
Gauging Time	13:06
Is Well Dry?	No

Is Product Present?	No
Was product removed?	No
Static Water Level (ft-bmp)	10.3
Static Water Level (Fixed)	10.3
DTW QC Check	QC Pass
Total Depth (ft-bmp)	19.82
Total Depth (Fixed)	19.82
TD QC Check	QC Pass
Water Column (ft)	9.52
Gallons in Well	1.55

Evacuation

Method details, purge/no-purge information, and field parameters.

Evacuation Details

Method Details

Purge Method	Low-Flow
Purge Equipment	Peristaltic
Water Quality Meter Make/Model (Select One or More)	YSI Pro Plus
Water Quality Meter ID(s)	YSI professional

No-Purge: PDB/Hydrasleeve

Note: Selecting "Both" assumes details regarding the same Hydrasleeve/PDB

Deployment Details

PDB Details

A modified Trip Blank must be taken at time of deployment.

A modified Equipment Blank of fill water must be taken at time of deployment.

Purge Details

Purge Depth (ft-bmp) (e.g. Pump Intake)	15
Purge Start	13:07
Purge End (Before Sample Collection)	13:59
Purge Measurement Units	Gallons
Total Gallons Purged	2.5
Well Volumes Purged (total)	1.61

Volumetric Details

Borehole Volume Multiplier: _____ CD | BD Multiplier 2" | 8" 0.8 2" | 10" 1.1 4" | 8" 1.1 4" | 10" 1.5 4" | 12" 2.0 6" | 10" 2.1 6" | 12" 2.6 _____ BD = Borehole Diameter CD = Casing Diameter " = inches

One Borehole Volume (gallons)	0
Specified Volumes	1.5
Calculated Volume (gallons)	0

Enter purging and final field parameters in the Field Parameters section below.

@13:07, DTW:10.05, pH5.68, temp:17, cond:176.9,turb:133, DO:0.55, redox:38.4

Site ID, Well ID	97502, MW-6
Reading Time	13:07
Rate (mL/min)	150
Depth to Water (ft)	10.05
Total Volume Purged (mL)	100
pH	5.68
pH 2 decimals	5.68
Conductivity (mS/cm)	176.9
cond sig figs	177
Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).	
Turbidity (NTU)	133
turbidity sig figs	133
Dissolved Oxygen (mg/L)	0.55
DO 2 decimals	0.55
Temperature (Degrees Celcius)	17
temp 2 decimals	17.00
Redox (ORP mV)	38.4
Color	Clear
Notable Odors	None
parameters	@13:07, DTW:10.05, pH5.68, temp:17, cond:176.9,turb:133, DO:0.55, redox:38.4

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@13:21, DTW:10.35, pH5.91, temp:17.4, cond:154.3,turb:117, DO:0.48, redox:10.4

Site ID, Well ID	97502, MW-6
Reading Time	13:21
Minutes Elapsed between readings	14
Total Elapsed Minutes	14
Rate (mL/min)	150
Depth to Water (ft)	10.35
Total Volume Purged (mL)	600
pH	5.91
pH 2 decimals	5.91
Conductivity (mS/cm)	154.3
cond sig figs	154
Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).	
Turbidity (NTU)	117
turbidity sig figs	117
Dissolved Oxygen (mg/L)	0.48
DO 2 decimals	0.48

Temperature (Degrees Celcius)	17.4
temp 2 decimals	17.40
Redox (ORP mV)	10.4
Color	Clear
Notable Odors	None
parameters	@13:21, DTW:10.35, pH5.91, temp:17.4, cond:154.3,turb:117, DO:0.48, redox:10.4
Stabilization Calculation - TGI	Continue purging, the parameters are not stable: pH is not stable ; conductivity is not stable ; turbidity is not stable ; DO is not stable ; temperature is not stable ; ORP is not stable ; time elapsed is 14 minutes
Stabilization Calculation - site 775040	Continue purging, the parameters are not stable: pH is not stable ; conductivity is not stable ; turbidity is not stable ; DO is not stable ; temperature is not stable ; ORP is not stable ; time elapsed is 14 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@13:24, DTW:10.35, pH5.87, temp:17.2, cond:152.4,turb:94.5, DO:0.62, redox:8.3

Site ID, Well ID	97502, MW-6
Reading Time	13:24
Minutes Elapsed between readings	3
Total Elapsed Minutes	17
Rate (mL/min)	150
Depth to Water (ft)	10.35
Total Volume Purged (mL)	1200
pH	5.87
pH 2 decimals	5.87
Conductivity (mS/cm)	152.4
cond sig figs	152
Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).	
Turbidity (NTU)	94.5
turbidity sig figs	94.5
Dissolved Oxygen (mg/L)	0.62
DO 2 decimals	0.62
Temperature (Degrees Celcius)	17.2
temp 2 decimals	17.20
Redox (ORP mV)	8.3
Color	Clear
Notable Odors	None
parameters	@13:24, DTW:10.35, pH5.87, temp:17.2, cond:152.4,turb:94.5, DO:0.62, redox:8.3
Stabilization Calculation - TGI	Continue purging, the parameters are not stable: pH is not stable ; conductivity is not stable ; turbidity is not stable ; DO is not stable ; temperature is stable ; ORP is not stable ; time elapsed is 17 minutes
Stabilization Calculation - site 775040	Continue purging, the parameters are not stable: pH is not stable ; conductivity is not stable ; turbidity is not stable ; DO is not stable ; temperature is stable ; ORP is not stable ; time elapsed is 17 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@13:27, DTW:10.52, pH5.79, temp:17, cond:150.6,turb:77.4, DO:0.68, redox:11.8

Site ID, Well ID	97502, MW-6
Reading Time	13:27
Minutes Elapsed between readings	3
Total Elapsed Minutes	20
Rate (mL/min)	150
Depth to Water (ft)	10.52
Total Volume Purged (mL)	1800
pH	5.79
pH 2 decimals	5.79
Conductivity (mS/cm)	150.6
cond sig figs	151

Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).

Turbidity (NTU)	77.4
turbidity sig figs	77.4
Dissolved Oxygen (mg/L)	0.68
DO 2 decimals	0.68
Temperature (Degrees Celcius)	17
temp 2 decimals	17.00
Redox (ORP mV)	11.8
Color	Clear
Notable Odors	None

parameters @13:27, DTW:10.52, pH5.79, temp:17, cond:150.6,turb:77.4, DO:0.68, redox:11.8

Stabilization Calculation - TGI Continue purging, the parameters are not stable: pH is not stable ; conductivity is stable ; turbidity is not stable ; DO is not stable ; temperature is stable ; ORP is stable ; time elapsed is 20 minutes

Stabilization Calculation - site 775040 Continue purging, the parameters are not stable: pH is not stable ; conductivity is stable ; turbidity is not stable ; DO is not stable ; temperature is stable ; ORP is stable ; time elapsed is 20 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@13:33, DTW:10.52, pH5.75, temp:16.7, cond:148.9,turb:58.9, DO:0.71, redox:13

Site ID, Well ID	97502, MW-6
Reading Time	13:33
Minutes Elapsed between readings	6
Total Elapsed Minutes	26

Rate (mL/min)	150
Depth to Water (ft)	10.52
Total Volume Purged (mL)	2400
pH	5.75
pH 2 decimals	5.75
Conductivity (mS/cm)	148.9
cond sig figs	149
Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).	
Turbidity (NTU)	58.9
turbidity sig figs	58.9
Dissolved Oxygen (mg/L)	0.71
DO 2 decimals	0.71
Temperature (Degrees Celcius)	16.7
temp 2 decimals	16.70
Redox (ORP mV)	13
Color	Clear
Notable Odors	None
parameters	@13:33, DTW:10.52, pH5.75, temp:16.7, cond:148.9,turb:58.9, DO:0.71, redox:13
Stabilization Calculation - TGI	Continue purging, the parameters are not stable: pH is not stable ; conductivity is stable ; turbidity is not stable ; DO is not stable ; temperature is stable ; ORP is stable ; time elapsed is 26 minutes
Stabilization Calculation - site 775040	Continue purging, the parameters are not stable: pH is not stable ; conductivity is stable ; turbidity is not stable ; DO is not stable ; temperature is stable ; ORP is stable ; time elapsed is 26 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@13:39, DTW:10.91, pH5.77, temp:16.7, cond:146.9,turb:46.2, DO:0.67, redox:10.9

Site ID, Well ID	97502, MW-6
Reading Time	13:39
Minutes Elapsed between readings	6
Total Elapsed Minutes	32
Rate (mL/min)	150
Depth to Water (ft)	10.91
Total Volume Purged (mL)	3000
pH	5.77
pH 2 decimals	5.77
Conductivity (mS/cm)	146.9
cond sig figs	147
Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).	
Turbidity (NTU)	46.2
turbidity sig figs	46.2
Dissolved Oxygen (mg/L)	0.67

DO 2 decimals	0.67
Temperature (Degrees Celcius)	16.7
temp 2 decimals	16.70
Redox (ORP mV)	10.9
Color	Clear
Notable Odors	None
parameters	@13:39, DTW:10.91, pH5.77, temp:16.7, cond:146.9,turb:46.2, DO:0.67, redox:10.9
Stabilization Calculation - TGI	Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is not stable ; DO is stable ; temperature is stable ; ORP is stable ; time elapsed is 32 minutes
Stabilization Calculation - site 775040	Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is not stable ; DO is stable ; temperature is stable ; ORP is stable ; time elapsed is 32 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@13:44, DTW:11, pH5.78, temp:16.6, cond:145.7,turb:36.8, DO:0.64, redox:10

Site ID, Well ID	97502, MW-6
Reading Time	13:44
Minutes Elapsed between readings	5
Total Elapsed Minutes	37
Rate (mL/min)	150
Depth to Water (ft)	11
Total Volume Purged (mL)	3600
pH	5.78
pH 2 decimals	5.78
Conductivity (mS/cm)	145.7
cond sig figs	146
Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).	
Turbidity (NTU)	36.8
turbidity sig figs	36.8
Dissolved Oxygen (mg/L)	0.64
DO 2 decimals	0.64
Temperature (Degrees Celcius)	16.6
temp 2 decimals	16.60
Redox (ORP mV)	10
Color	Clear
Notable Odors	None
parameters	@13:44, DTW:11, pH5.78, temp:16.6, cond:145.7,turb:36.8, DO:0.64, redox:10
Stabilization Calculation - TGI	Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is not stable ; DO is stable ; temperature is stable ; ORP is stable ; time elapsed is 37 minutes

Stabilization Calculation - site 775040

Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is not stable ; DO is stable ; temperature is stable ; ORP is stable ; time elapsed is 37 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@13:47, DTW:11.07, pH5.79, temp:16.5, cond:145.6,turb:34, DO:0.62, redox:8.8

Site ID, Well ID	97502, MW-6
Reading Time	13:47
Minutes Elapsed between readings	3
Total Elapsed Minutes	40
Rate (mL/min)	150
Depth to Water (ft)	11.07
Total Volume Purged (mL)	4200
pH	5.79
pH 2 decimals	5.79
Conductivity (mS/cm)	145.6
cond sig figs	146

Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).

Turbidity (NTU)	34
turbidity sig figs	34.0
Dissolved Oxygen (mg/L)	0.62
DO 2 decimals	0.62
Temperature (Degrees Celcius)	16.5
temp 2 decimals	16.50
Redox (ORP mV)	8.8
Color	Clear
Notable Odors	None
parameters	@13:47, DTW:11.07, pH5.79, temp:16.5, cond:145.6,turb:34, DO:0.62, redox:8.8

Stabilization Calculation - TGI
Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is not stable ; DO is stable ; temperature is stable ; ORP is stable ; time elapsed is 40 minutes

Stabilization Calculation - site 775040
Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is not stable ; DO is stable ; temperature is stable ; ORP is stable ; time elapsed is 40 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@13:50, DTW:11.09, pH5.79, temp:16.5, cond:145.7,turb:31.3, DO:0.59, redox:7.3

Site ID, Well ID	97502, MW-6
Reading Time	13:50

Minutes Elapsed between readings	3
Total Elapsed Minutes	43
Rate (mL/min)	150
Depth to Water (ft)	11.09
Total Volume Purged (mL)	4800
pH	5.79
pH 2 decimals	5.79
Conductivity (mS/cm)	145.7
cond sig figs	146
Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).	
Turbidity (NTU)	31.3
turbidity sig figs	31.3
Dissolved Oxygen (mg/L)	0.59
DO 2 decimals	0.59
Temperature (Degrees Celcius)	16.5
temp 2 decimals	16.50
Redox (ORP mV)	7.3
Color	Clear
Notable Odors	None
parameters	@13:50, DTW:11.09, pH5.79, temp:16.5, cond:145.7,turb:31.3, DO:0.59, redox:7.3
Stabilization Calculation - TGI	Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is not stable ; DO is stable ; temperature is stable ; ORP is stable ; time elapsed is 43 minutes
Stabilization Calculation - site 775040	Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is not stable ; DO is stable ; temperature is stable ; ORP is stable ; time elapsed is 43 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@13:54, DTW:11.16, pH5.82, temp:16.5, cond:144.6,turb:26.7, DO:0.56, redox:4.8

Site ID, Well ID	97502, MW-6
Reading Time	13:54
Minutes Elapsed between readings	4
Total Elapsed Minutes	47
Rate (mL/min)	150
Depth to Water (ft)	11.16
Total Volume Purged (mL)	5200
pH	5.82
pH 2 decimals	5.82
Conductivity (mS/cm)	144.6
cond sig figs	145
Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).	
Turbidity (NTU)	26.7

turbidity sig figs	26.7
Dissolved Oxygen (mg/L)	0.56
DO 2 decimals	0.56
Temperature (Degrees Celcius)	16.5
temp 2 decimals	16.50
Redox (ORP mV)	4.8
Color	Clear
Notable Odors	None
parameters	@13:54, DTW:11.16, pH5.82, temp:16.5, cond:144.6,turb:26.7, DO:0.56, redox:4.8
Stabilization Calculation - TGI	Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is not stable ; DO is stable ; temperature is stable ; ORP is stable ; time elapsed is 47 minutes
Stabilization Calculation - site 775040	Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is not stable ; DO is stable ; temperature is stable ; ORP is stable ; time elapsed is 47 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@13:57, DTW:11.24, pH5.84, temp:16.4, cond:144.2,turb:24.7, DO:0.56, redox:2.8

Site ID, Well ID	97502, MW-6
Reading Time	13:57
Minutes Elapsed between readings	3
Total Elapsed Minutes	50
Rate (mL/min)	150
Depth to Water (ft)	11.24
Total Volume Purged (mL)	5800
pH	5.84
pH 2 decimals	5.84
Conductivity (mS/cm)	144.2
cond sig figs	144
Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).	
Turbidity (NTU)	24.7
turbidity sig figs	24.7
Dissolved Oxygen (mg/L)	0.56
DO 2 decimals	0.56
Temperature (Degrees Celcius)	16.4
temp 2 decimals	16.40
Redox (ORP mV)	2.8
Color	Clear
Notable Odors	None
parameters	@13:57, DTW:11.24, pH5.84, temp:16.4, cond:144.2,turb:24.7, DO:0.56, redox:2.8

Stabilization Calculation - TGI

Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is not stable ; DO is stable ; temperature is stable ; ORP is stable ; time elapsed is 50 minutes

Stabilization Calculation - site 775040

Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is not stable ; DO is stable ; temperature is stable ; ORP is stable ; time elapsed is 50 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

Sampling

Are you able to sample this location? Yes

Sample Information

Sample ID MW-6-20210927
Sample Time 14:00
Sample Type Composite
Sample Equipment Peristaltic
Field Filtered Sample? No
Sample Depth (ft-bmp) (e.g. pump intake) 16
Color Clear
Analytes and Methods See Chain-of-Custody.

Well Inspection

Well inspection completed? No

Close Out

General Comments None
Is this record complete? Yes

97502, MW-7, 2021-09-28, 14:15, GW Sampling

Created	2021-09-28 20:23:30 UTC by Joe Sepiol
Updated	2021-10-01 16:04:56 UTC by Joe Sepiol
Location	48.5054231761, -122.23877999
Status	■ QC Complete

Note: Before you begin, have you synced?

Project Details

Chevron	Chevron
Site ID	97502, Retail Outlet 97502
Site ID	97502
Site Location City	Sedro Woolley
Site Location State	Washington
Site Location	Sedro Woolley, Washington
Project Number	30064310, Hamilton, Ada
Project Number	30064310
Date	2021-09-28
Sampling Event	Quarterly
Weather	Cloudy
Sampler Name	Joe Sepiol
Additional field staff?	No

Well (Location) Details

IMPORTANT! You must create a SEPARATE groundwater sampling record after creating a gauging record. Do not change your gauging record into a groundwater sampling record. If you have questions, ask your TM!

Well ID	MW-7
Well ID	MW-7
Turboscope Database ID	3610
Are you able to locate this well?	Yes
Work Performed at Location	GW Sampling

Well Information

Top of Screen (ft-bgs)	5.0
Bottom of Screen (ft-bgs)	20.0
Casing Diameter (in)	2.0
Well Casing Material	PVC
Measuring Point Description	Top of Casing
Historic Average DTW (ft-bmp)	10.0

Gauging

Are you able to gauge this well?	Yes
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Gauging Details

Type of Gauging Equipment	Interface Probe
Gauging Equipment ID	3000
Well Head PID Reading (ppm)	0.6

Gauging Time	13:24
Is Well Dry?	No
Is Product Present?	No
Was product removed?	No
Static Water Level (ft-bmp)	12.73
Static Water Level (Fixed)	12.73
DTW QC Check	QC Pass
Total Depth (ft-bmp)	21.35
Total Depth (Fixed)	21.35
TD QC Check	QC Pass
Water Column (ft)	8.62
Gallons in Well	1.4

Evacuation

Method details, purge/no-purge information, and field parameters.

Evacuation Details

Method Details

Purge Method	Low-Flow
Purge Equipment	Peristaltic
Water Quality Meter Make/Model (Select One or More)	YSI Pro Plus
Water Quality Meter ID(s)	4278
Decontamination Method	2 Stage Rinse

No-Purge: PDB/Hydrasleeve

Note: Selecting "Both" assumes details regarding the same Hydrasleeve/PDB

Deployment Details

PDB Details

A modified Trip Blank must be taken at time of deployment.

A modified Equipment Blank of fill water must be taken at time of deployment.

Purge Details

Purge Depth (ft-bmp) (e.g. Pump Intake)	17
Purge Start	13:30
Purge End (Before Sample Collection)	14:05
Purge Measurement Units	Milliliters
Total Milliliters Purged	6000
Well Volumes Purged (total)	1.13

Volumetric Details

Borehole Volume Multiplier: _____ CD | BD Multiplier 2" | 8" 0.8 2" | 10" 1.1 4" | 8" 1.1 4" | 10" 1.5 4" | 12" 2.0 6" | 10" 2.1 6" | 12" 2.6 _____ BD = Borehole Diameter CD = Casing Diameter " = inches

One Borehole Volume (gallons)	0
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Specified Volumes	1.5
Calculated Volume (gallons)	0

Enter purging and final field parameters in the Field Parameters section below.

@13:30, DTW:12.89, pH6.66, temp:15.2, cond:0.298,turb:15.4, DO:0.44, redox:20.4

Site ID, Well ID	97502, MW-7
Reading Time	13:30
Rate (mL/min)	150
Depth to Water (ft)	12.89
Total Volume Purged (mL)	0
pH	6.66
pH 2 decimals	6.66
Conductivity (mS/cm)	0.298
cond sig figs	0.298

Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).

Turbidity (NTU)	15.4
turbidity sig figs	15.4
Dissolved Oxygen (mg/L)	0.44
DO 2 decimals	0.44
Temperature (Degrees Celcius)	15.2
temp 2 decimals	15.20
Redox (ORP mV)	20.4
Color	Clear
Notable Odors	None

parameters @13:30, DTW:12.89, pH6.66, temp:15.2, cond:0.298,turb:15.4, DO:0.44, redox:20.4

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@13:35, DTW:13, pH6.6, temp:15.3, cond:0.288,turb:3.68, DO:0.19, redox:6.5

Site ID, Well ID	97502, MW-7
Reading Time	13:35
Minutes Elapsed between readings	5
Total Elapsed Minutes	5
Rate (mL/min)	150
Depth to Water (ft)	13
Total Volume Purged (mL)	750
pH	6.6
pH 2 decimals	6.60
Conductivity (mS/cm)	0.288
cond sig figs	0.288

Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).

Turbidity (NTU)	3.68
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turbidity sig figs	3.7
Dissolved Oxygen (mg/L)	0.19
DO 2 decimals	0.19
Temperature (Degrees Celcius)	15.3
temp 2 decimals	15.30
Redox (ORP mV)	6.5
Color	Clear
Notable Odors	None
parameters	@13:35, DTW:13, pH6.6, temp:15.3, cond:0.288,turb:3.68, DO:0.19, redox:6.5
Stabilization Calculation - TGI	Continue purging, the parameters are not stable: pH is not stable ; conductivity is not stable ; turbidity is not stable ; DO is not stable ; temperature is not stable ; ORP is not stable ; time elapsed is 5 minutes
Stabilization Calculation - site 775040	Continue purging, the parameters are not stable: pH is not stable ; conductivity is not stable ; turbidity is not stable ; DO is not stable ; temperature is not stable ; ORP is not stable ; time elapsed is 5 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@13:40, DTW:13.1, pH6.6, temp:15.4, cond:0.293,turb:1.76, DO:0.17, redox:1.2

Site ID, Well ID	97502, MW-7
Reading Time	13:40
Minutes Elapsed between readings	5
Total Elapsed Minutes	10
Rate (mL/min)	150
Depth to Water (ft)	13.1
Total Volume Purged (mL)	1500
pH	6.6
pH 2 decimals	6.60
Conductivity (mS/cm)	0.293
cond sig figs	0.293
Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).	
Turbidity (NTU)	1.76
turbidity sig figs	1.8
Dissolved Oxygen (mg/L)	0.17
DO 2 decimals	0.17
Temperature (Degrees Celcius)	15.4
temp 2 decimals	15.40
Redox (ORP mV)	1.2
Color	Clear
Notable Odors	None
parameters	@13:40, DTW:13.1, pH6.6, temp:15.4, cond:0.293,turb:1.76, DO:0.17, redox:1.2

Stabilization Calculation - TGI

Continue purging, the parameters are not stable: pH is stable ; conductivity is not stable ; turbidity is not stable ; DO is stable ; temperature is stable ; ORP is not stable ; time elapsed is 10 minutes

Stabilization Calculation - site 775040

Continue purging, the parameters are not stable: pH is stable ; conductivity is not stable ; turbidity is not stable ; DO is not stable ; temperature is stable ; ORP is not stable ; time elapsed is 10 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@13:45, DTW:13.16, pH6.57, temp:15.5, cond:0.279,turb:2.86, DO:0.16, redox:-0.6

Site ID, Well ID 97502, MW-7

Reading Time 13:45

Minutes Elapsed between readings 5

Total Elapsed Minutes 15

Rate (mL/min) 150

Depth to Water (ft) 13.16

Total Volume Purged (mL) 2250

pH 6.57

pH 2 decimals 6.57

Conductivity (mS/cm) 0.279

cond sig figs 0.279

Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).

Turbidity (NTU) 2.86

turbidity sig figs 2.9

Dissolved Oxygen (mg/L) 0.16

DO 2 decimals 0.16

Temperature (Degrees Celcius) 15.5

temp 2 decimals 15.50

Redox (ORP mV) -0.6

Color Clear

Notable Odors None

parameters @13:45, DTW:13.16, pH6.57, temp:15.5, cond:0.279,turb:2.86, DO:0.16, redox:-0.6

Stabilization Calculation - TGI

Continue purging, the parameters are not stable: pH is stable ; conductivity is not stable ; turbidity is stable ; DO is stable ; temperature is stable ; ORP is stable ; time elapsed is 15 minutes

Stabilization Calculation - site 775040

Continue purging, the parameters are not stable: pH is stable ; conductivity is not stable ; turbidity is not stable ; DO is not stable ; temperature is stable ; ORP is stable ; time elapsed is 15 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@13:50, DTW:13.2, pH6.58, temp:15.5, cond:0.282,turb:2.19, DO:0.16, redox:-42

Site ID, Well ID	97502, MW-7
Reading Time	13:50
Minutes Elapsed between readings	5
Total Elapsed Minutes	20
Rate (mL/min)	150
Depth to Water (ft)	13.2
Total Volume Purged (mL)	3000
pH	6.58
pH 2 decimals	6.58
Conductivity (mS/cm)	0.282
cond sig figs	0.282
Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).	
Turbidity (NTU)	2.19
turbidity sig figs	2.2
Dissolved Oxygen (mg/L)	0.16
DO 2 decimals	0.16
Temperature (Degrees Celcius)	15.5
temp 2 decimals	15.50
Redox (ORP mV)	-42
Color	Clear
Notable Odors	None
parameters	@13:50, DTW:13.2, pH6.58, temp:15.5, cond:0.282,turb:2.19, DO:0.16, redox:-42
Stabilization Calculation - TGI	Continue purging, the parameters are not stable: pH is stable ; conductivity is not stable ; turbidity is stable ; DO is stable ; temperature is stable ; ORP is not stable ; time elapsed is 20 minutes
Stabilization Calculation - site 775040	Continue purging, the parameters are not stable: pH is stable ; conductivity is not stable ; turbidity is not stable ; DO is stable ; temperature is stable ; ORP is not stable ; time elapsed is 20 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@13:55, DTW:13.2, pH6.59, temp:15.5, cond:0.285,turb:1.84, DO:0.14, redox:-6.9

Site ID, Well ID	97502, MW-7
Reading Time	13:55
Minutes Elapsed between readings	5
Total Elapsed Minutes	25
Rate (mL/min)	150
Depth to Water (ft)	13.2
Total Volume Purged (mL)	3750
pH	6.59
pH 2 decimals	6.59
Conductivity (mS/cm)	0.285

cond sig figs	0.285
Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).	
Turbidity (NTU)	1.84
turbidity sig figs	1.8
Dissolved Oxygen (mg/L)	0.14
DO 2 decimals	0.14
Temperature (Degrees Celcius)	15.5
temp 2 decimals	15.50
Redox (ORP mV)	-6.9
Color	Clear
Notable Odors	None
parameters	@13:55, DTW:13.2, pH6.59, temp:15.5, cond:0.285,turb:1.84, DO:0.14, redox:-6.9
Stabilization Calculation - TGI	Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is stable ; DO is stable ; temperature is stable ; ORP is not stable ; time elapsed is 25 minutes
Stabilization Calculation - site 775040	Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is not stable ; DO is not stable ; temperature is stable ; ORP is not stable ; time elapsed is 25 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@14:00, DTW:13.2, pH6.59, temp:15.5, cond:0.283,turb:0.82, DO:0.14, redox:-8.6

Site ID, Well ID	97502, MW-7
Reading Time	14:00
Minutes Elapsed between readings	5
Total Elapsed Minutes	30
Rate (mL/min)	150
Depth to Water (ft)	13.2
Total Volume Purged (mL)	4500
pH	6.59
pH 2 decimals	6.59
Conductivity (mS/cm)	0.283
cond sig figs	0.283
Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).	
Turbidity (NTU)	0.82
turbidity sig figs	0.82
Dissolved Oxygen (mg/L)	0.14
DO 2 decimals	0.14
Temperature (Degrees Celcius)	15.5
temp 2 decimals	15.50
Redox (ORP mV)	-8.6
Color	Clear
Notable Odors	None

parameters	@14:00, DTW:13.2, pH6.59, temp:15.5, cond:0.283,turb:0.82, DO:0.14, redox:-8.6
Stabilization Calculation - TGI	Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is stable ; DO is stable ; temperature is stable ; ORP is not stable ; time elapsed is 30 minutes
Stabilization Calculation - site 775040	Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is not stable ; DO is not stable ; temperature is stable ; ORP is not stable ; time elapsed is 30 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@14:05, DTW:13.22, pH6.59, temp:15.4, cond:0.278,turb:0.02, DO:0.13, redox:-10.1

Site ID, Well ID	97502, MW-7
Reading Time	14:05
Minutes Elapsed between readings	5
Total Elapsed Minutes	35
Rate (mL/min)	150
Depth to Water (ft)	13.22
Total Volume Purged (mL)	5250
pH	6.59
pH 2 decimals	6.59
Conductivity (mS/cm)	0.278
cond sig figs	0.278

Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).

Turbidity (NTU)	0.02
turbidity sig figs	0.02
Dissolved Oxygen (mg/L)	0.13
DO 2 decimals	0.13
Temperature (Degrees Celcius)	15.4
temp 2 decimals	15.40
Redox (ORP mV)	-10.1
Color	Clear
Notable Odors	None

parameters	@14:05, DTW:13.22, pH6.59, temp:15.4, cond:0.278,turb:0.02, DO:0.13, redox:-10.1
Stabilization Calculation - TGI	You may sample the well.
Stabilization Calculation - site 775040	Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is not stable ; DO is stable ; temperature is stable ; ORP is stable ; time elapsed is 35 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

Sampling

Are you able to sample this location? Yes

Sample Information

Sample ID MW-7-20210928

Sample Time 14:15

Sample Type Grab

Sample Equipment Peristaltic

Field Filtered Sample? No

Sample Depth (ft-bmp) (e.g. pump intake) 17

Color Clear

Notable Odors Mild

Analytes and Methods See Chain-of-Custody.

Well Inspection

Well inspection completed? No

Close Out

General Comments None

Is this record complete? Yes

97502, MW-8, 2021-09-28, 16:00, GW Sampling

Created	2021-09-28 21:54:36 UTC by Joe Sepiol
Updated	2021-10-01 16:04:45 UTC by Joe Sepiol
Location	48.5054071667, -122.239005296
Status	■ QC Complete

Note: Before you begin, have you synced?

Project Details

Chevron	Chevron
Site ID	97502, Retail Outlet 97502
Site ID	97502
Site Location City	Sedro Woolley
Site Location State	Washington
Site Location	Sedro Woolley, Washington
Project Number	30064310, Hamilton, Ada
Project Number	30064310
Date	2021-09-28
Sampling Event	Quarterly
Weather	Cloudy
Sampler Name	Joe Sepiol
Additional field staff?	No

Well (Location) Details

IMPORTANT! You must create a SEPARATE groundwater sampling record after creating a gauging record. Do not change your gauging record into a groundwater sampling record. If you have questions, ask your TM!

Well ID	MW-8
Well ID	MW-8
Turboscope Database ID	3611
Are you able to locate this well?	Yes
Work Performed at Location	GW Sampling

Well Information

Top of Screen (ft-bgs)	7.5
Bottom of Screen (ft-bgs)	17.5
Casing Diameter (in)	2.0
Well Casing Material	PVC
Measuring Point Description	Top of Casing
Historic Average DTW (ft-bmp)	8.25

Gauging

Are you able to gauge this well?	Yes
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Gauging Details

Type of Gauging Equipment	Interface Probe
Gauging Equipment ID	3000
Well Head PID Reading (ppm)	66.2

Gauging Time	14:58
Is Well Dry?	No
Is Product Present?	No
Was product removed?	No
Static Water Level (ft-bmp)	10.38
Static Water Level (Fixed)	10.38
DTW QC Check	QC Pass
Total Depth (ft-bmp)	17.01
Total Depth (Fixed)	17.01
TD QC Check	QC Pass
Water Column (ft)	6.63
Gallons in Well	1.08

Evacuation

Method details, purge/no-purge information, and field parameters.

Evacuation Details

Method Details

Purge Method	Low-Flow
Purge Equipment	Peristaltic
Water Quality Meter Make/Model (Select One or More)	YSI Pro Plus
Water Quality Meter ID(s)	4278
Decontamination Method	2 Stage Rinse

No-Purge: PDB/Hydrasleeve

Note: Selecting "Both" assumes details regarding the same Hydrasleeve/PDB

Deployment Details

PDB Details

A modified Trip Blank must be taken at time of deployment.

A modified Equipment Blank of fill water must be taken at time of deployment.

Purge Details

Purge Depth (ft-bmp) (e.g. Pump Intake)	15
Purge Start	15:10
Purge End (Before Sample Collection)	15:50
Purge Measurement Units	Milliliters
Total Milliliters Purged	6500
Well Volumes Purged (total)	1.59

Volumetric Details

Borehole Volume Multiplier: _____ CD | BD Multiplier 2" | 8" 0.8 2" | 10" 1.1 4" | 8" 1.1 4" | 10" 1.5 4" | 12" 2.0 6" | 10" 2.1 6" | 12" 2.6 _____ BD = Borehole Diameter CD = Casing Diameter " = inches

One Borehole Volume (gallons)	0
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Specified Volumes	1.5
Calculated Volume (gallons)	0

Enter purging and final field parameters in the Field Parameters section below.

@15:10, DTW:10.58, pH6.63, temp:14.9, cond:0.393,turb:8.56, DO:0.75, redox:13.8

Site ID, Well ID	97502, MW-8
Reading Time	15:10
Rate (mL/min)	150
Depth to Water (ft)	10.58
Total Volume Purged (mL)	0
pH	6.63
pH 2 decimals	6.63
Conductivity (mS/cm)	0.393
cond sig figs	0.393

Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).

Turbidity (NTU)	8.56
turbidity sig figs	8.6
Dissolved Oxygen (mg/L)	0.75
DO 2 decimals	0.75
Temperature (Degrees Celcius)	14.9
temp 2 decimals	14.90
Redox (ORP mV)	13.8
Color	Clear
Notable Odors	None

parameters @15:10, DTW:10.58, pH6.63, temp:14.9, cond:0.393,turb:8.56, DO:0.75, redox:13.8

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@15:15, DTW:10.53, pH6.66, temp:15.1, cond:0.395,turb:0.64, DO:0.22, redox:-4.8

Site ID, Well ID	97502, MW-8
Reading Time	15:15
Minutes Elapsed between readings	5
Total Elapsed Minutes	5
Rate (mL/min)	150
Depth to Water (ft)	10.53
Total Volume Purged (mL)	750
pH	6.66
pH 2 decimals	6.66
Conductivity (mS/cm)	0.395
cond sig figs	0.395

Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).

Turbidity (NTU)	0.64
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turbidity sig figs	0.64
Dissolved Oxygen (mg/L)	0.22
DO 2 decimals	0.22
Temperature (Degrees Celcius)	15.1
temp 2 decimals	15.10
Redox (ORP mV)	-4.8
Color	Clear
Notable Odors	None
parameters	@15:15, DTW:10.53, pH6.66, temp:15.1, cond:0.395,turb:0.64, DO:0.22, redox:-4.8
Stabilization Calculation - TGI	Continue purging, the parameters are not stable: pH is not stable ; conductivity is not stable ; turbidity is not stable ; DO is not stable ; temperature is not stable ; ORP is not stable ; time elapsed is 5 minutes
Stabilization Calculation - site 775040	Continue purging, the parameters are not stable: pH is not stable ; conductivity is not stable ; turbidity is not stable ; DO is not stable ; temperature is not stable ; ORP is not stable ; time elapsed is 5 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@15:20, DTW:10.52, pH6.67, temp:15.1, cond:0.395,turb:0.02, DO:0.23, redox:-15.9

Site ID, Well ID	97502, MW-8
Reading Time	15:20
Minutes Elapsed between readings	5
Total Elapsed Minutes	10
Rate (mL/min)	150
Depth to Water (ft)	10.52
Total Volume Purged (mL)	750
pH	6.67
pH 2 decimals	6.67
Conductivity (mS/cm)	0.395
cond sig figs	0.395

Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).

Turbidity (NTU)	0.02
turbidity sig figs	0.02
Dissolved Oxygen (mg/L)	0.23
DO 2 decimals	0.23
Temperature (Degrees Celcius)	15.1
temp 2 decimals	15.10
Redox (ORP mV)	-15.9
Color	Clear
Notable Odors	None
parameters	@15:20, DTW:10.52, pH6.67, temp:15.1, cond:0.395,turb:0.02, DO:0.23, redox:-15.9

Stabilization Calculation - TGI

Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is not stable ; DO is not stable ; temperature is stable ; ORP is not stable ; time elapsed is 10 minutes

Stabilization Calculation - site 775040

Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is not stable ; DO is not stable ; temperature is stable ; ORP is not stable ; time elapsed is 10 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@15:25, DTW:10.52, pH6.66, temp:15.1, cond:0.397,turb:0.02, DO:0.19, redox:-28.5

Site ID, Well ID 97502, MW-8

Reading Time 15:25

Minutes Elapsed between readings 5

Total Elapsed Minutes 15

Rate (mL/min) 150

Depth to Water (ft) 10.52

Total Volume Purged (mL) 2250

pH 6.66

pH 2 decimals 6.66

Conductivity (mS/cm) 0.397

cond sig figs 0.397

Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).

Turbidity (NTU) 0.02

turbidity sig figs 0.02

Dissolved Oxygen (mg/L) 0.19

DO 2 decimals 0.19

Temperature (Degrees Celcius) 15.1

temp 2 decimals 15.10

Redox (ORP mV) -28.5

Color Clear

Notable Odors None

parameters @15:25, DTW:10.52, pH6.66, temp:15.1, cond:0.397,turb:0.02, DO:0.19, redox:-28.5

Stabilization Calculation - TGI

Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is stable ; DO is stable ; temperature is stable ; ORP is not stable ; time elapsed is 15 minutes

Stabilization Calculation - site 775040

Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is stable ; DO is not stable ; temperature is stable ; ORP is not stable ; time elapsed is 15 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@15:30, DTW:10.52, pH6.67, temp:15.1, cond:0.4,turb:0.02, DO:0.19, redox:-32.3

Site ID, Well ID	97502, MW-8
Reading Time	15:30
Minutes Elapsed between readings	5
Total Elapsed Minutes	20
Rate (mL/min)	150
Depth to Water (ft)	10.52
Total Volume Purged (mL)	3000
pH	6.67
pH 2 decimals	6.67
Conductivity (mS/cm)	0.4
cond sig figs	0.400
Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).	
Turbidity (NTU)	0.02
turbidity sig figs	0.02
Dissolved Oxygen (mg/L)	0.19
DO 2 decimals	0.19
Temperature (Degrees Celcius)	15.1
temp 2 decimals	15.10
Redox (ORP mV)	-32.3
Color	Clear
Notable Odors	None
parameters	@15:30, DTW:10.52, pH6.67, temp:15.1, cond:0.4,turb:0.02, DO:0.19, redox:-32.3
Stabilization Calculation - TGI	Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is stable ; DO is stable ; temperature is stable ; ORP is not stable ; time elapsed is 20 minutes
Stabilization Calculation - site 775040	Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is stable ; DO is not stable ; temperature is stable ; ORP is not stable ; time elapsed is 20 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@15:35, DTW:10.51, pH6.68, temp:14.8, cond:0.403,turb:0.2, DO:0.19, redox:-39.4

Site ID, Well ID	97502, MW-8
Reading Time	15:35
Minutes Elapsed between readings	5
Total Elapsed Minutes	25
Rate (mL/min)	150
Depth to Water (ft)	10.51
Total Volume Purged (mL)	3750
pH	6.68
pH 2 decimals	6.68
Conductivity (mS/cm)	0.403

cond sig figs	0.403
Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).	
Turbidity (NTU)	0.2
turbidity sig figs	0.20
Dissolved Oxygen (mg/L)	0.19
DO 2 decimals	0.19
Temperature (Degrees Celcius)	14.8
temp 2 decimals	14.80
Redox (ORP mV)	-39.4
Color	Clear
Notable Odors	None
parameters	@15:35, DTW:10.51, pH6.68, temp:14.8, cond:0.403,turb:0.2, DO:0.19, redox:-39.4
Stabilization Calculation - TGI	Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is stable ; DO is stable ; temperature is stable ; ORP is not stable ; time elapsed is 25 minutes
Stabilization Calculation - site 775040	Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is stable ; DO is stable ; temperature is stable ; ORP is not stable ; time elapsed is 25 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@15:40, DTW:10.52, pH6.69, temp:15.3, cond:0.411,turb:0.02, DO:0.2, redox:-42.3

Site ID, Well ID	97502, MW-8
Reading Time	15:40
Minutes Elapsed between readings	5
Total Elapsed Minutes	30
Rate (mL/min)	150
Depth to Water (ft)	10.52
Total Volume Purged (mL)	4500
pH	6.69
pH 2 decimals	6.69
Conductivity (mS/cm)	0.411
cond sig figs	0.411
Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).	
Turbidity (NTU)	0.02
turbidity sig figs	0.02
Dissolved Oxygen (mg/L)	0.2
DO 2 decimals	0.20
Temperature (Degrees Celcius)	15.3
temp 2 decimals	15.30
Redox (ORP mV)	-42.3
Color	Clear
Notable Odors	None

parameters	@15:40, DTW:10.52, pH6.69, temp:15.3, cond:0.411,turb:0.02, DO:0.2, redox:-42.3
Stabilization Calculation - TGI	Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is stable ; DO is stable ; temperature is not stable ; ORP is stable ; time elapsed is 30 minutes
Stabilization Calculation - site 775040	Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is stable ; DO is stable ; temperature is not stable ; ORP is stable ; time elapsed is 30 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@15:45, DTW:10.5, pH6.69, temp:15.2, cond:0.415,turb:0.2, DO:0.13, redox:-44.7

Site ID, Well ID	97502, MW-8
Reading Time	15:45
Minutes Elapsed between readings	5
Total Elapsed Minutes	35
Rate (mL/min)	150
Depth to Water (ft)	10.5
Total Volume Purged (mL)	4250
pH	6.69
pH 2 decimals	6.69
Conductivity (mS/cm)	0.415
cond sig figs	0.415
Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).	
Turbidity (NTU)	0.2
turbidity sig figs	0.20
Dissolved Oxygen (mg/L)	0.13
DO 2 decimals	0.13
Temperature (Degrees Celcius)	15.2
temp 2 decimals	15.20
Redox (ORP mV)	-44.7
Color	Clear
Notable Odors	None

parameters	@15:45, DTW:10.5, pH6.69, temp:15.2, cond:0.415,turb:0.2, DO:0.13, redox:-44.7
Stabilization Calculation - TGI	Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is stable ; DO is stable ; temperature is not stable ; ORP is stable ; time elapsed is 35 minutes
Stabilization Calculation - site 775040	Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is stable ; DO is not stable ; temperature is not stable ; ORP is stable ; time elapsed is 35 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@15:50, DTW:10.5, pH6.71, temp:15.3, cond:0.423,turb:0.02, DO:0.13, redox:-48.7

Site ID, Well ID	97502, MW-8
Reading Time	15:50
Minutes Elapsed between readings	5
Total Elapsed Minutes	40
Rate (mL/min)	150
Depth to Water (ft)	10.5
Total Volume Purged (mL)	5000
pH	6.71
pH 2 decimals	6.71
Conductivity (mS/cm)	0.423
cond sig figs	0.423
Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).	
Turbidity (NTU)	0.02
turbidity sig figs	0.02
Dissolved Oxygen (mg/L)	0.13
DO 2 decimals	0.13
Temperature (Degrees Celcius)	15.3
temp 2 decimals	15.30
Redox (ORP mV)	-48.7
Color	Clear
Notable Odors	None
parameters	@15:50, DTW:10.5, pH6.71, temp:15.3, cond:0.423,turb:0.02, DO:0.13, redox:-48.7
Stabilization Calculation - TGI	You may sample the well.
Stabilization Calculation - site 775040	Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is stable ; DO is not stable ; temperature is stable ; ORP is stable ; time elapsed is 40 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

Sampling

Are you able to sample this location?	Yes
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Sample Information

Sample ID	MW-8-20210928
Sample Time	16:00
Sample Type	Grab
Sample Equipment	Peristaltic
Field Filtered Sample?	No
Sample Depth (ft-bmp) (e.g. pump intake)	15
Color	Clear
Notable Odors	None

Analytes and Methods

See Chain-of-Custody.

Well Inspection

Well inspection completed?

No

Close Out

General Comments

None

Is this record complete?

Yes

97502, MW-10, 2021-09-29, 10:30, GW Sampling

Created	2021-09-29 16:51:33 UTC by Joe Sepiol
Updated	2021-10-01 16:04:31 UTC by Joe Sepiol
Location	48.5053060391, -122.238815613
Status	■ QC Complete

Note: Before you begin, have you synced?

Project Details

Chevron	Chevron
Site ID	97502, Retail Outlet 97502
Site ID	97502
Site Location City	Sedro Woolley
Site Location State	Washington
Site Location	Sedro Woolley, Washington
Project Number	30064310, Hamilton, Ada
Project Number	30064310
Date	2021-09-29
Sampling Event	Quarterly
Weather	Cloudy
Sampler Name	Joe Sepiol
Additional field staff?	No

Well (Location) Details

IMPORTANT! You must create a SEPARATE groundwater sampling record after creating a gauging record. Do not change your gauging record into a groundwater sampling record. If you have questions, ask your TM!

Well ID	MW-10
Well ID	MW-10
Turboscope Database ID	3602
Are you able to locate this well?	Yes
Work Performed at Location	GW Sampling

Well Information

Top of Screen (ft-bgs)	7.0
Bottom of Screen (ft-bgs)	20.0
Casing Diameter (in)	2.0
Well Casing Material	PVC
Measuring Point Description	Top of Casing
Historic Average DTW (ft-bmp)	9.0

Gauging

Are you able to gauge this well?	Yes
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Gauging Details

Type of Gauging Equipment	Interface Probe
Gauging Equipment ID	3000
Well Head PID Reading (ppm)	0

Gauging Time	09:54
Is Well Dry?	No
Is Product Present?	No
Was product removed?	No
Static Water Level (ft-bmp)	10.33
Static Water Level (Fixed)	10.33
DTW QC Check	QC Pass
Total Depth (ft-bmp)	18.7
Total Depth (Fixed)	18.7
TD QC Check	QC Pass
Water Column (ft)	8.37
Gallons in Well	1.36

Evacuation

Method details, purge/no-purge information, and field parameters.

Evacuation Details

Method Details

Purge Method	Low-Flow
Purge Equipment	Peristaltic
Water Quality Meter Make/Model (Select One or More)	YSI Pro Plus
Water Quality Meter ID(s)	4278
Decontamination Method	2 Stage Rinse

No-Purge: PDB/Hydrasleeve

Note: Selecting "Both" assumes details regarding the same Hydrasleeve/PDB

Deployment Details

PDB Details

A modified Trip Blank must be taken at time of deployment.

A modified Equipment Blank of fill water must be taken at time of deployment.

Purge Details

Purge Depth (ft-bmp) (e.g. Pump Intake)	14
Purge Start	10:00
Purge End (Before Sample Collection)	10:20
Purge Measurement Units	Milliliters
Total Milliliters Purged	4500
Well Volumes Purged (total)	0.87

Volumetric Details

Borehole Volume Multiplier: _____ CD | BD Multiplier 2" | 8" 0.8 2" | 10" 1.1 4" | 8" 1.1 4" | 10" 1.5 4" | 12" 2.0 6" | 10" 2.1 6" | 12" 2.6 _____ BD = Borehole Diameter CD = Casing Diameter " = inches

One Borehole Volume (gallons)	0
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Specified Volumes	1.5
Calculated Volume (gallons)	0

Enter purging and final field parameters in the Field Parameters section below.

@10:00, DTW:10.45, pH6.33, temp:13.9, cond:0.329,turb:33.4, DO:0.43, redox:4.3

Site ID, Well ID	97502, MW-10
Reading Time	10:00
Rate (mL/min)	150
Depth to Water (ft)	10.45
Total Volume Purged (mL)	0
pH	6.33
pH 2 decimals	6.33
Conductivity (mS/cm)	0.329
cond sig figs	0.329

Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).

Turbidity (NTU)	33.4
turbidity sig figs	33.4
Dissolved Oxygen (mg/L)	0.43
DO 2 decimals	0.43
Temperature (Degrees Celcius)	13.9
temp 2 decimals	13.90
Redox (ORP mV)	4.3
Color	Clear
Notable Odors	None

parameters @10:00, DTW:10.45, pH6.33, temp:13.9, cond:0.329,turb:33.4, DO:0.43, redox:4.3

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@10:05, DTW:10.54, pH6.53, temp:14, cond:0.329,turb:10.8, DO:0.33, redox:-22.1

Site ID, Well ID	97502, MW-10
Reading Time	10:05
Minutes Elapsed between readings	5
Total Elapsed Minutes	5
Rate (mL/min)	150
Depth to Water (ft)	10.54
Total Volume Purged (mL)	750
pH	6.53
pH 2 decimals	6.53
Conductivity (mS/cm)	0.329
cond sig figs	0.329

Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).

Turbidity (NTU)	10.8
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turbidity sig figs	10.8
Dissolved Oxygen (mg/L)	0.33
DO 2 decimals	0.33
Temperature (Degrees Celcius)	14
temp 2 decimals	14.00
Redox (ORP mV)	-22.1
Color	Clear
Notable Odors	None
parameters	@10:05, DTW:10.54, pH6.53, temp:14, cond:0.329,turb:10.8, DO:0.33, redox:-22.1
Stabilization Calculation - TGI	Continue purging, the parameters are not stable: pH is not stable ; conductivity is not stable ; turbidity is not stable ; DO is not stable ; temperature is not stable ; ORP is not stable ; time elapsed is 5 minutes
Stabilization Calculation - site 775040	Continue purging, the parameters are not stable: pH is not stable ; conductivity is not stable ; turbidity is not stable ; DO is not stable ; temperature is not stable ; ORP is not stable ; time elapsed is 5 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@10:10, DTW:10.58, pH6.63, temp:14.1, cond:0.33,turb:4.39, DO:0.26, redox:-32.1

Site ID, Well ID	97502, MW-10
Reading Time	10:10
Minutes Elapsed between readings	5
Total Elapsed Minutes	10
Rate (mL/min)	150
Depth to Water (ft)	10.58
Total Volume Purged (mL)	1500
pH	6.63
pH 2 decimals	6.63
Conductivity (mS/cm)	0.33
cond sig figs	0.330

Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).

Turbidity (NTU)	4.39
turbidity sig figs	4.4
Dissolved Oxygen (mg/L)	0.26
DO 2 decimals	0.26
Temperature (Degrees Celcius)	14.1
temp 2 decimals	14.10
Redox (ORP mV)	-32.1
Color	Clear
Notable Odors	None
parameters	@10:10, DTW:10.58, pH6.63, temp:14.1, cond:0.33,turb:4.39, DO:0.26, redox:-32.1

Stabilization Calculation - TGI

Continue purging, the parameters are not stable: pH is not stable ; conductivity is stable ; turbidity is not stable ; DO is stable ; temperature is stable ; ORP is not stable ; time elapsed is 10 minutes

Stabilization Calculation - site 775040

Continue purging, the parameters are not stable: pH is not stable ; conductivity is stable ; turbidity is not stable ; DO is not stable ; temperature is stable ; ORP is not stable ; time elapsed is 10 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@10:15, DTW:10.61, pH6.7, temp:14.3, cond:0.333,turb:2.94, DO:0.22, redox:-37.2

Site ID, Well ID	97502, MW-10
Reading Time	10:15
Minutes Elapsed between readings	5
Total Elapsed Minutes	15
Rate (mL/min)	150
Depth to Water (ft)	10.61
Total Volume Purged (mL)	2250
pH	6.7
pH 2 decimals	6.70
Conductivity (mS/cm)	0.333
cond sig figs	0.333
Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).	
Turbidity (NTU)	2.94
turbidity sig figs	2.9
Dissolved Oxygen (mg/L)	0.22
DO 2 decimals	0.22
Temperature (Degrees Celcius)	14.3
temp 2 decimals	14.30
Redox (ORP mV)	-37.2
Color	Clear
Notable Odors	None
parameters	@10:15, DTW:10.61, pH6.7, temp:14.3, cond:0.333,turb:2.94, DO:0.22, redox:-37.2

Stabilization Calculation - TGI

Continue purging, the parameters are not stable: pH is not stable ; conductivity is stable ; turbidity is not stable ; DO is stable ; temperature is stable ; ORP is not stable ; time elapsed is 15 minutes

Stabilization Calculation - site 775040

Continue purging, the parameters are not stable: pH is not stable ; conductivity is stable ; turbidity is not stable ; DO is not stable ; temperature is stable ; ORP is not stable ; time elapsed is 15 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@10:20, DTW:10.62, pH6.73, temp:14.4, cond:0.331,turb:3.16, DO:0.2, redox:-36.5

Site ID, Well ID	97502, MW-10
Reading Time	10:20
Minutes Elapsed between readings	5
Total Elapsed Minutes	20
Rate (mL/min)	150
Depth to Water (ft)	10.62
Total Volume Purged (mL)	3000
pH	6.73
pH 2 decimals	6.73
Conductivity (mS/cm)	0.331
cond sig figs	0.331
Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).	
Turbidity (NTU)	3.16
turbidity sig figs	3.2
Dissolved Oxygen (mg/L)	0.2
DO 2 decimals	0.20
Temperature (Degrees Celcius)	14.4
temp 2 decimals	14.40
Redox (ORP mV)	-36.5
Color	Clear
Notable Odors	None
parameters	@10:20, DTW:10.62, pH6.73, temp:14.4, cond:0.331,turb:3.16, DO:0.2, redox:-36.5
Stabilization Calculation - TGI	You may sample the well.
Stabilization Calculation - site 775040	Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is not stable ; DO is not stable ; temperature is stable ; ORP is stable ; time elapsed is 20 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

Sampling

Are you able to sample this location?	Yes
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Sample Information

Sample ID	MW-10-20210929
Duplicate ID	DUP-2-092921
Sample Time	10:30
Sample Type	Grab
Sample Equipment	Peristaltic
Field Filtered Sample?	No
Sample Depth (ft-bmp) (e.g. pump intake)	14
Color	Clear

Notable Odors	Mild
Analytes and Methods	See Chain-of-Custody.

Well Inspection

Well inspection completed?	No
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Close Out

General Comments	None
Is this record complete?	Yes

97502, MW-11, 2021-09-29, 10:42, GW Sampling

Created	2021-09-29 17:07:42 UTC by Michael Andrews
Updated	2021-09-29 18:38:25 UTC by Michael Andrews
Location	48.5054161906683, -122.238904242812
Status	■ Ready for QC

Note: Before you begin, have you synced?

Project Details

Chevron	Chevron
Site ID	97502, Retail Outlet 97502
Site ID	97502
Site Location City	Sedro Woolley
Site Location State	Washington
Site Location	Sedro Woolley, Washington
Project Number	30064310, Hamilton, Ada
Project Number	30064310
Date	2021-09-29
Sampling Event	Quarterly
Weather	Raining
Sampler Name	Michael Andrews
Additional field staff?	No

Well (Location) Details

IMPORTANT! You must create a SEPARATE groundwater sampling record after creating a gauging record. Do not change your gauging record into a groundwater sampling record. If you have questions, ask your TM!

Well ID	MW-11
Well ID	MW-11
Turboscope Database ID	3603
Are you able to locate this well?	Yes
Work Performed at Location	GW Sampling

Well Information

Top of Screen (ft-bgs)	7.0
Bottom of Screen (ft-bgs)	20.0
Casing Diameter (in)	2.0
Well Casing Material	PVC
Measuring Point Description	Top of Casing
Historic Average DTW (ft-bmp)	9.0

Gauging

Are you able to gauge this well?	Yes
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Gauging Details

Type of Gauging Equipment	Water Level Meter
Well Head PID Reading (ppm)	0.3
Gauging Time	10:08

Is Well Dry?	No
Is Product Present?	No
Was product removed?	No
Static Water Level (ft-bmp)	10.78
Static Water Level (Fixed)	10.78
DTW QC Check	QC Pass
Total Depth (ft-bmp)	18.93
Total Depth (Fixed)	18.93
TD QC Check	QC Pass
Water Column (ft)	8.15
Gallons in Well	1.32

Evacuation

Method details, purge/no-purge information, and field parameters.

Evacuation Details

Method Details

Purge Method	Low-Flow
Purge Equipment	Peristaltic
Water Quality Meter Make/Model (Select One or More)	YSI Pro Plus

No-Purge: PDB/Hydrasleeve

Note: Selecting "Both" assumes details regarding the same Hydrasleeve/PDB

Deployment Details

PDB Details

A modified Trip Blank must be taken at time of deployment.

A modified Equipment Blank of fill water must be taken at time of deployment.

Purge Details

Purge Depth (ft-bmp) (e.g. Pump Intake)	15
Purge Start	10:10
Purge End (Before Sample Collection)	10:41
Purge Measurement Units	Milliliters
Total Milliliters Purged	6000
Well Volumes Purged (total)	1.20

Volumetric Details

Borehole Volume Multiplier: _____ CD | BD Multiplier 2" | 8" 0.8 2" | 10" 1.1 4" | 8" 1.1 4" | 10" 1.5 4" | 12" 2.0 6" | 10" 2.1 6" | 12" 2.6 _____ BD = Borehole Diameter CD = Casing Diameter
" = inches

One Borehole Volume (gallons)	0
Specified Volumes	1.5
Calculated Volume (gallons)	0

Enter purging and final field parameters in the Field Parameters section below.

@10:11, DTW:10.79, pH6.36, temp:13.2, cond:0.382,turb:0.02, DO:0.61, redox:44.8

Site ID, Well ID	97502, MW-11
Reading Time	10:11
Rate (mL/min)	200
Depth to Water (ft)	10.79
Total Volume Purged (mL)	0
pH	6.36
pH 2 decimals	6.36
Conductivity (mS/cm)	0.382
cond sig figs	0.382
Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).	
Turbidity (NTU)	0.02
turbidity sig figs	0.02
Dissolved Oxygen (mg/L)	0.61
DO 2 decimals	0.61
Temperature (Degrees Celcius)	13.2
temp 2 decimals	13.20
Redox (ORP mV)	44.8
Color	Clear
Notable Odors	Mild
parameters	@10:11, DTW:10.79, pH6.36, temp:13.2, cond:0.382,turb:0.02, DO:0.61, redox:44.8

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@10:16, DTW:11.18, pH6.34, temp:13.4, cond:0.382,turb:0.03, DO:0.27, redox:15.8

Site ID, Well ID	97502, MW-11
Reading Time	10:16
Minutes Elapsed between readings	5
Total Elapsed Minutes	5
Rate (mL/min)	200
Depth to Water (ft)	11.18
Total Volume Purged (mL)	1000
pH	6.34
pH 2 decimals	6.34
Conductivity (mS/cm)	0.382
cond sig figs	0.382
Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).	
Turbidity (NTU)	0.03
turbidity sig figs	0.03
Dissolved Oxygen (mg/L)	0.27
DO 2 decimals	0.27

Temperature (Degrees Celcius)	13.4
temp 2 decimals	13.40
Redox (ORP mV)	15.8
Color	Clear
Notable Odors	Mild
parameters	@10:16, DTW:11.18, pH6.34, temp:13.4, cond:0.382,turb:0.03, DO:0.27, redox:15.8
Stabilization Calculation - TGI	Continue purging, the parameters are not stable: pH is not stable ; conductivity is not stable ; turbidity is not stable ; DO is not stable ; temperature is not stable ; ORP is not stable ; time elapsed is 5 minutes
Stabilization Calculation - site 775040	Continue purging, the parameters are not stable: pH is not stable ; conductivity is not stable ; turbidity is not stable ; DO is not stable ; temperature is not stable ; ORP is not stable ; time elapsed is 5 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@10:21, DTW:11.3, pH6.37, temp:13.6, cond:0.381,turb:0.02, DO:0.21, redox:0.7

Site ID, Well ID	97502, MW-11
Reading Time	10:21
Minutes Elapsed between readings	5
Total Elapsed Minutes	10
Rate (mL/min)	200
Depth to Water (ft)	11.3
Total Volume Purged (mL)	2000
pH	6.37
pH 2 decimals	6.37
Conductivity (mS/cm)	0.381
cond sig figs	0.381

Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).

Turbidity (NTU)	0.02
turbidity sig figs	0.02
Dissolved Oxygen (mg/L)	0.21
DO 2 decimals	0.21
Temperature (Degrees Celcius)	13.6
temp 2 decimals	13.60
Redox (ORP mV)	0.7
Color	Clear
Notable Odors	Mild
parameters	@10:21, DTW:11.3, pH6.37, temp:13.6, cond:0.381,turb:0.02, DO:0.21, redox:0.7
Stabilization Calculation - TGI	Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is stable ; DO is not stable ; temperature is not stable ; ORP is not stable ; time elapsed is 10 minutes
Stabilization Calculation - site 775040	Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is stable ; DO is not stable ; temperature is not stable ; ORP is not stable ; time elapsed is 10 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@10:26, DTW:11.27, pH6.33, temp:13.1, cond:0.379,turb:0.02, DO:0.22, redox:-9

Site ID, Well ID	97502, MW-11
Reading Time	10:26
Minutes Elapsed between readings	5
Total Elapsed Minutes	15
Rate (mL/min)	200
Depth to Water (ft)	11.27
Total Volume Purged (mL)	3000
pH	6.33
pH 2 decimals	6.33
Conductivity (mS/cm)	0.379
cond sig figs	0.379

Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).

Turbidity (NTU)	0.02
turbidity sig figs	0.02
Dissolved Oxygen (mg/L)	0.22
DO 2 decimals	0.22
Temperature (Degrees Celcius)	13.1
temp 2 decimals	13.10
Redox (ORP mV)	-9
Color	Clear
Notable Odors	Mild

parameters @10:26, DTW:11.27, pH6.33, temp:13.1, cond:0.379,turb:0.02, DO:0.22, redox:-9

Stabilization Calculation - TGI Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is stable ; DO is stable ; temperature is not stable ; ORP is not stable ; time elapsed is 15 minutes

Stabilization Calculation - site 775040 Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is stable ; DO is not stable ; temperature is not stable ; ORP is not stable ; time elapsed is 15 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@10:31, DTW:11.25, pH6.34, temp:13.4, cond:0.385,turb:0.02, DO:0.22, redox:-15.7

Site ID, Well ID	97502, MW-11
Reading Time	10:31
Minutes Elapsed between readings	5
Total Elapsed Minutes	20

Rate (mL/min)	200
Depth to Water (ft)	11.25
Total Volume Purged (mL)	4000
pH	6.34
pH 2 decimals	6.34
Conductivity (mS/cm)	0.385
cond sig figs	0.385
Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).	
Turbidity (NTU)	0.02
turbidity sig figs	0.02
Dissolved Oxygen (mg/L)	0.22
DO 2 decimals	0.22
Temperature (Degrees Celcius)	13.4
temp 2 decimals	13.40
Redox (ORP mV)	-15.7
Color	Clear
Notable Odors	Mild
parameters	@10:31, DTW:11.25, pH6.34, temp:13.4, cond:0.385,turb:0.02, DO:0.22, redox:-15.7
Stabilization Calculation - TGI	Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is stable ; DO is stable ; temperature is not stable ; ORP is not stable ; time elapsed is 20 minutes
Stabilization Calculation - site 775040	Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is stable ; DO is stable ; temperature is not stable ; ORP is not stable ; time elapsed is 20 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@10:36, DTW:11.25, pH6.35, temp:13.3, cond:0.386,turb:0.02, DO:0.21, redox:-20

Site ID, Well ID	97502, MW-11
Reading Time	10:36
Minutes Elapsed between readings	5
Total Elapsed Minutes	25
Rate (mL/min)	200
Depth to Water (ft)	11.25
Total Volume Purged (mL)	5000
pH	6.35
pH 2 decimals	6.35
Conductivity (mS/cm)	0.386
cond sig figs	0.386
Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).	
Turbidity (NTU)	0.02
turbidity sig figs	0.02
Dissolved Oxygen (mg/L)	0.21

DO 2 decimals	0.21
Temperature (Degrees Celcius)	13.3
temp 2 decimals	13.30
Redox (ORP mV)	-20
Color	Clear
Notable Odors	Mild
parameters	@10:36, DTW:11.25, pH6.35, temp:13.3, cond:0.386,turb:0.02, DO:0.21, redox:-20
Stabilization Calculation - TGI	Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is stable ; DO is stable ; temperature is stable ; ORP is not stable ; time elapsed is 25 minutes
Stabilization Calculation - site 775040	Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is stable ; DO is stable ; temperature is stable ; ORP is not stable ; time elapsed is 25 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@10:41, DTW:11.25, pH6.33, temp:13.4, cond:0.386,turb:0.02, DO:0.2, redox:-22

Site ID, Well ID	97502, MW-11
Reading Time	10:41
Minutes Elapsed between readings	5
Total Elapsed Minutes	30
Rate (mL/min)	200
Depth to Water (ft)	11.25
Total Volume Purged (mL)	6000
pH	6.33
pH 2 decimals	6.33
Conductivity (mS/cm)	0.386
cond sig figs	0.386
Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).	
Turbidity (NTU)	0.02
turbidity sig figs	0.02
Dissolved Oxygen (mg/L)	0.2
DO 2 decimals	0.20
Temperature (Degrees Celcius)	13.4
temp 2 decimals	13.40
Redox (ORP mV)	-22
Color	Clear
Notable Odors	Mild
parameters	@10:41, DTW:11.25, pH6.33, temp:13.4, cond:0.386,turb:0.02, DO:0.2, redox:-22
Stabilization Calculation - TGI	You may sample the well.
Stabilization Calculation - site 775040	You may sample the well.

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

Sampling

Are you able to sample this location?	Yes
---------------------------------------	-----

Sample Information

Sample ID	MW-11-20210929
Sample Time	10:42
Sample Type	Grab
Sample Equipment	Peristaltic
Field Filtered Sample?	No
Sample Depth (ft-bmp) (e.g. pump intake)	15
Color	Clear
Notable Odors	Moderate
Analytes and Methods	See Chain-of-Custody.

Well Inspection

Well inspection completed?	No
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Close Out

General Comments	None
Is this record complete?	Yes

97502, MW-12, 2021-09-28, 14:26, GW Sampling

Created	2021-09-28 20:54:44 UTC by Michael Andrews
Updated	2021-09-28 21:48:17 UTC by Michael Andrews
Location	48.5055515030851, -122.238845117504
Status	■ Ready for QC
Note: Before you begin, have you synced?	

Project Details

Chevron	Chevron
Site ID	97502, Retail Outlet 97502
Site ID	97502
Site Location City	Sedro Woolley
Site Location State	Washington
Site Location	Sedro Woolley, Washington
Project Number	30064310, Hamilton, Ada
Project Number	30064310
Date	2021-09-28
Sampling Event	Quarterly
Weather	Cloudy
Sampler Name	Michael Andrews
Additional field staff?	No

Well (Location) Details

IMPORTANT! You must create a SEPARATE groundwater sampling record after creating a gauging record. Do not change your gauging record into a groundwater sampling record. If you have questions, ask your TM!

Well ID	MW-12
Well ID	MW-12
Turboscope Database ID	3604
Are you able to locate this well?	Yes
Work Performed at Location	GW Sampling

Well Information

Top of Screen (ft-bgs)	5.0
Bottom of Screen (ft-bgs)	20.0
Casing Diameter (in)	4.0
Well Casing Material	PVC
Measuring Point Description	Top of Casing
Historic Average DTW (ft-bmp)	8.5

Gauging

Are you able to gauge this well?	Yes
----------------------------------	-----

Gauging Details

Type of Gauging Equipment	Water Level Meter
Well Head PID Reading (ppm)	0.1
Gauging Time	13:55

Is Well Dry?	No
Is Product Present?	No
Was product removed?	No
Static Water Level (ft-bmp)	10.28
Static Water Level (Fixed)	10.28
DTW QC Check	QC Pass
Total Depth (ft-bmp)	18.75
Total Depth (Fixed)	18.75
TD QC Check	QC Pass
Water Column (ft)	8.47
Gallons in Well	5.51

Evacuation

Method details, purge/no-purge information, and field parameters.

Evacuation Details

Method Details

Purge Method	Low-Flow
Purge Equipment	Peristaltic
Water Quality Meter Make/Model (Select One or More)	YSI Pro Plus

No-Purge: PDB/Hydrasleeve

Note: Selecting "Both" assumes details regarding the same Hydrasleeve/PDB

Deployment Details

PDB Details

A modified Trip Blank must be taken at time of deployment.

A modified Equipment Blank of fill water must be taken at time of deployment.

Purge Details

Purge Depth (ft-bmp) (e.g. Pump Intake)	15
Purge Start	13:55
Purge End (Before Sample Collection)	14:25
Purge Measurement Units	Milliliters
Total Milliliters Purged	6000
Well Volumes Purged (total)	0.29

Volumetric Details

Borehole Volume Multiplier: _____ CD | BD Multiplier 2" | 8" 0.8 2" | 10" 1.1 4" | 8" 1.1 4" | 10" 1.5 4" | 12" 2.0 6" | 10" 2.1 6" | 12" 2.6 _____ BD = Borehole Diameter CD = Casing Diameter " = inches

One Borehole Volume (gallons)	0
Specified Volumes	1.5
Calculated Volume (gallons)	0

Enter purging and final field parameters in the Field Parameters section below.

@13:55, DTW:10.28, pH6.2, temp:16.3, cond:0.348,turb:37.9, DO:0.89, redox:13.3

Site ID, Well ID	97502, MW-12
Reading Time	13:55
Rate (mL/min)	200
Depth to Water (ft)	10.28
Total Volume Purged (mL)	0
pH	6.2
pH 2 decimals	6.20
Conductivity (mS/cm)	0.348
cond sig figs	0.348
Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).	
Turbidity (NTU)	37.9
turbidity sig figs	37.9
Dissolved Oxygen (mg/L)	0.89
DO 2 decimals	0.89
Temperature (Degrees Celcius)	16.3
temp 2 decimals	16.30
Redox (ORP mV)	13.3
Color	Clear
Notable Odors	Mild
parameters	@13:55, DTW:10.28, pH6.2, temp:16.3, cond:0.348,turb:37.9, DO:0.89, redox:13.3

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@14:00, DTW:10.49, pH6.14, temp:15.9, cond:0.339,turb:31, DO:0.72, redox:11.6

Site ID, Well ID	97502, MW-12
Reading Time	14:00
Minutes Elapsed between readings	5
Total Elapsed Minutes	5
Rate (mL/min)	200
Depth to Water (ft)	10.49
Total Volume Purged (mL)	1000
pH	6.14
pH 2 decimals	6.14
Conductivity (mS/cm)	0.339
cond sig figs	0.339
Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).	
Turbidity (NTU)	31
turbidity sig figs	31.0
Dissolved Oxygen (mg/L)	0.72
DO 2 decimals	0.72

Temperature (Degrees Celcius)	15.9
temp 2 decimals	15.90
Redox (ORP mV)	11.6
Color	Clear
Notable Odors	Mild
parameters	@14:00, DTW:10.49, pH6.14, temp:15.9, cond:0.339,turb:31, DO:0.72, redox:11.6
Stabilization Calculation - TGI	Continue purging, the parameters are not stable: pH is not stable ; conductivity is not stable ; turbidity is not stable ; DO is not stable ; temperature is not stable ; ORP is not stable ; time elapsed is 5 minutes
Stabilization Calculation - site 775040	Continue purging, the parameters are not stable: pH is not stable ; conductivity is not stable ; turbidity is not stable ; DO is not stable ; temperature is not stable ; ORP is not stable ; time elapsed is 5 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@14:05, DTW:10.53, pH6.15, temp:15.8, cond:0.326,turb:21.4, DO:0.32, redox:10.6

Site ID, Well ID	97502, MW-12
Reading Time	14:05
Minutes Elapsed between readings	5
Total Elapsed Minutes	10
Rate (mL/min)	200
Depth to Water (ft)	10.53
Total Volume Purged (mL)	2000
pH	6.15
pH 2 decimals	6.15
Conductivity (mS/cm)	0.326
cond sig figs	0.326
Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).	
Turbidity (NTU)	21.4
turbidity sig figs	21.4
Dissolved Oxygen (mg/L)	0.32
DO 2 decimals	0.32
Temperature (Degrees Celcius)	15.8
temp 2 decimals	15.80
Redox (ORP mV)	10.6
Color	Clear
Notable Odors	Mild
parameters	@14:05, DTW:10.53, pH6.15, temp:15.8, cond:0.326,turb:21.4, DO:0.32, redox:10.6
Stabilization Calculation - TGI	Continue purging, the parameters are not stable: pH is stable ; conductivity is not stable ; turbidity is not stable ; DO is not stable ; temperature is not stable ; ORP is stable ; time elapsed is 10 minutes
Stabilization Calculation - site 775040	Continue purging, the parameters are not stable: pH is stable ; conductivity is not stable ; turbidity is not stable ; DO is not stable ; temperature is not stable ; ORP is stable ; time elapsed is 10 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@14:10, DTW:20.53, pH6.14, temp:15.7, cond:0.32,turb:17.6, DO:0.23, redox:9.7

Site ID, Well ID	97502, MW-12
Reading Time	14:10
Minutes Elapsed between readings	5
Total Elapsed Minutes	15
Rate (mL/min)	200
Depth to Water (ft)	20.53
Total Volume Purged (mL)	3000
pH	6.14
pH 2 decimals	6.14
Conductivity (mS/cm)	0.32
cond sig figs	0.320

Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).

Turbidity (NTU)	17.6
turbidity sig figs	17.6
Dissolved Oxygen (mg/L)	0.23
DO 2 decimals	0.23
Temperature (Degrees Celcius)	15.7
temp 2 decimals	15.70
Redox (ORP mV)	9.7
Color	Clear
Notable Odors	Mild

parameters @14:10, DTW:20.53, pH6.14, temp:15.7, cond:0.32,turb:17.6, DO:0.23, redox:9.7

Stabilization Calculation - TGI Continue purging, the parameters are not stable: pH is stable ; conductivity is not stable ; turbidity is not stable ; DO is not stable ; temperature is stable ; ORP is stable ; time elapsed is 15 minutes

Stabilization Calculation - site 775040 Continue purging, the parameters are not stable: pH is stable ; conductivity is not stable ; turbidity is not stable ; DO is not stable ; temperature is stable ; ORP is stable ; time elapsed is 15 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@14:15, DTW:10.53, pH6.14, temp:15.7, cond:0.312,turb:15.4, DO:0.2, redox:9

Site ID, Well ID	97502, MW-12
Reading Time	14:15
Minutes Elapsed between readings	5
Total Elapsed Minutes	20

Rate (mL/min)	200
Depth to Water (ft)	10.53
Total Volume Purged (mL)	4000
pH	6.14
pH 2 decimals	6.14
Conductivity (mS/cm)	0.312
cond sig figs	0.312
Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).	
Turbidity (NTU)	15.4
turbidity sig figs	15.4
Dissolved Oxygen (mg/L)	0.2
DO 2 decimals	0.20
Temperature (Degrees Celcius)	15.7
temp 2 decimals	15.70
Redox (ORP mV)	9
Color	Clear
Notable Odors	Mild
parameters	@14:15, DTW:10.53, pH6.14, temp:15.7, cond:0.312,turb:15.4, DO:0.2, redox:9
Stabilization Calculation - TGI	Continue purging, the parameters are not stable: pH is stable ; conductivity is not stable ; turbidity is not stable ; DO is stable ; temperature is stable ; ORP is stable ; time elapsed is 20 minutes
Stabilization Calculation - site 775040	Continue purging, the parameters are not stable: pH is stable ; conductivity is not stable ; turbidity is not stable ; DO is not stable ; temperature is stable ; ORP is stable ; time elapsed is 20 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@14:20, DTW:10.54, pH6.17, temp:15.7, cond:0.309,turb:15.8, DO:0.2, redox:6.9

Site ID, Well ID	97502, MW-12
Reading Time	14:20
Minutes Elapsed between readings	5
Total Elapsed Minutes	25
Rate (mL/min)	200
Depth to Water (ft)	10.54
Total Volume Purged (mL)	5000
pH	6.17
pH 2 decimals	6.17
Conductivity (mS/cm)	0.309
cond sig figs	0.309
Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).	
Turbidity (NTU)	15.8
turbidity sig figs	15.8
Dissolved Oxygen (mg/L)	0.2

DO 2 decimals	0.20
Temperature (Degrees Celcius)	15.7
temp 2 decimals	15.70
Redox (ORP mV)	6.9
Color	Clear
Notable Odors	Mild
parameters	@14:20, DTW:10.54, pH6.17, temp:15.7, cond:0.309,turb:15.8, DO:0.2, redox:6.9
Stabilization Calculation - TGI	Continue purging, the parameters are not stable: pH is stable ; conductivity is not stable ; turbidity is not stable ; DO is stable ; temperature is stable ; ORP is stable ; time elapsed is 25 minutes
Stabilization Calculation - site 775040	Continue purging, the parameters are not stable: pH is stable ; conductivity is not stable ; turbidity is not stable ; DO is not stable ; temperature is stable ; ORP is stable ; time elapsed is 25 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@14:25, DTW:10.54, pH6.16, temp:15.7, cond:0.305,turb:14.3, DO:0.19, redox:7.3

Site ID, Well ID	97502, MW-12
Reading Time	14:25
Minutes Elapsed between readings	5
Total Elapsed Minutes	30
Rate (mL/min)	200
Depth to Water (ft)	10.54
Total Volume Purged (mL)	6000
pH	6.16
pH 2 decimals	6.16
Conductivity (mS/cm)	0.305
cond sig figs	0.305
Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).	
Turbidity (NTU)	14.3
turbidity sig figs	14.3
Dissolved Oxygen (mg/L)	0.19
DO 2 decimals	0.19
Temperature (Degrees Celcius)	15.7
temp 2 decimals	15.70
Redox (ORP mV)	7.3
Color	Clear
Notable Odors	Mild
parameters	@14:25, DTW:10.54, pH6.16, temp:15.7, cond:0.305,turb:14.3, DO:0.19, redox:7.3
Stabilization Calculation - TGI	You may sample the well.
Stabilization Calculation - site 775040	Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is not stable ; DO is stable ; temperature is stable ; ORP is stable ; time elapsed is 30 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

Sampling

Are you able to sample this location?	Yes
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Sample Information

Sample ID	MW-12-20210928
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Sample Time	14:26
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Sample Type	Grab
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Sample Equipment	Peristaltic
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Field Filtered Sample?	No
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Sample Depth (ft-bmp) (e.g. pump intake)	16
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Color	Clear
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Notable Odors	Mild
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Analytes and Methods	See Chain-of-Custody.
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Well Inspection

Well inspection completed?	No
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Close Out

General Comments	None
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Is this record complete?	Yes
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97502, MW-13, 2021-09-28, 12:52, GW Sampling

Created	2021-09-28 19:22:10 UTC by Michael Andrews
Updated	2021-09-28 20:33:22 UTC by Michael Andrews
Location	48.5054407362347, -122.238924410308
Status	■ Ready for QC

Note: Before you begin, have you synced?

Project Details

Chevron	Chevron
Site ID	97502, Retail Outlet 97502
Site ID	97502
Site Location City	Sedro Woolley
Site Location State	Washington
Site Location	Sedro Woolley, Washington
Project Number	30064310, Hamilton, Ada
Project Number	30064310
Date	2021-09-28
Sampling Event	Quarterly
Weather	Cloudy
Sampler Name	Michael Andrews
Additional field staff?	No

Well (Location) Details

IMPORTANT! You must create a SEPARATE groundwater sampling record after creating a gauging record. Do not change your gauging record into a groundwater sampling record. If you have questions, ask your TM!

Well ID	MW-13
Well ID	MW-13
Turboscope Database ID	3605
Are you able to locate this well?	Yes
Work Performed at Location	GW Sampling

Well Information

Top of Screen (ft-bgs)	5.0
Bottom of Screen (ft-bgs)	20.0
Casing Diameter (in)	4.0
Well Casing Material	Stainless Steel
Measuring Point Description	Top of Casing
Historic Average DTW (ft-bmp)	8.0

Gauging

Are you able to gauge this well?	Yes
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Gauging Details

Type of Gauging Equipment	Water Level Meter
Well Head PID Reading (ppm)	0.6
Gauging Time	12:22

Is Well Dry?	No
Is Product Present?	No
Was product removed?	No
Static Water Level (ft-bmp)	10.73
Static Water Level (Fixed)	10.73
DTW QC Check	QC Pass
Total Depth (ft-bmp)	18.89
Total Depth (Fixed)	18.89
TD QC Check	QC Pass
Water Column (ft)	8.16
Gallons in Well	5.3

Evacuation

Method details, purge/no-purge information, and field parameters.

Evacuation Details

Method Details

Purge Method	Low-Flow
Purge Equipment	Peristaltic
Water Quality Meter Make/Model (Select One or More)	YSI Pro Plus

No-Purge: PDB/Hydrasleeve

Note: Selecting "Both" assumes details regarding the same Hydrasleeve/PDB

Deployment Details

PDB Details

A modified Trip Blank must be taken at time of deployment.

A modified Equipment Blank of fill water must be taken at time of deployment.

Purge Details

Purge Depth (ft-bmp) (e.g. Pump Intake)	14
Purge Start	12:36
Purge End (Before Sample Collection)	12:51
Purge Measurement Units	Milliliters
Total Milliliters Purged	300
Well Volumes Purged (total)	0.01

Volumetric Details

Borehole Volume Multiplier: _____ CD | BD Multiplier 2" | 8" 0.8 2" | 10" 1.1 4" | 8" 1.1 4" | 10" 1.5 4" | 12" 2.0 6" | 10" 2.1 6" | 12" 2.6 _____ BD = Borehole Diameter CD = Casing Diameter
" = inches

One Borehole Volume (gallons)	0
Specified Volumes	1.5
Calculated Volume (gallons)	0

Enter purging and final field parameters in the Field Parameters section below.

@12:36, DTW:10.73, pH6.25, temp:15.5, cond:0.345,turb:30.7, DO:0.38, redox:1.5

Site ID, Well ID	97502, MW-13
Reading Time	12:36
Total Elapsed Minutes	0
Rate (mL/min)	200
Depth to Water (ft)	10.73
Total Volume Purged (mL)	0
pH	6.25
pH 2 decimals	6.25
Conductivity (mS/cm)	0.345
cond sig figs	0.345

Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).

Turbidity (NTU)	30.7
turbidity sig figs	30.7
Dissolved Oxygen (mg/L)	0.38
DO 2 decimals	0.38
Temperature (Degrees Celcius)	15.5
temp 2 decimals	15.50
Redox (ORP mV)	1.5
Color	Clear
Notable Odors	Mild
parameters	@12:36, DTW:10.73, pH6.25, temp:15.5, cond:0.345,turb:30.7, DO:0.38, redox:1.5

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@12:41, DTW:11.24, pH6.13, temp:15.5, cond:0.341,turb:4.53, DO:0.34, redox:1.7

Site ID, Well ID	97502, MW-13
Reading Time	12:41
Minutes Elapsed between readings	5
Total Elapsed Minutes	5
Rate (mL/min)	200
Depth to Water (ft)	11.24
Total Volume Purged (mL)	1000
pH	6.13
pH 2 decimals	6.13
Conductivity (mS/cm)	0.341
cond sig figs	0.341

Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).

Turbidity (NTU)	4.53
turbidity sig figs	4.5
Dissolved Oxygen (mg/L)	0.34

DO 2 decimals	0.34
Temperature (Degrees Celcius)	15.5
temp 2 decimals	15.50
Redox (ORP mV)	1.7
Color	Clear
Notable Odors	Mild
parameters	@12:41, DTW:11.24, pH6.13, temp:15.5, cond:0.341,turb:4.53, DO:0.34, redox:1.7
Stabilization Calculation - TGI	Continue purging, the parameters are not stable: pH is not stable ; conductivity is not stable ; turbidity is not stable ; DO is not stable ; temperature is not stable ; ORP is not stable ; time elapsed is 5 minutes
Stabilization Calculation - site 775040	Continue purging, the parameters are not stable: pH is not stable ; conductivity is not stable ; turbidity is not stable ; DO is not stable ; temperature is not stable ; ORP is not stable ; time elapsed is 5 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@12:46, DTW:11.32, pH6.14, temp:15.5, cond:0.341,turb:3.38, DO:0.4, redox:-1.4

Site ID, Well ID	97502, MW-13
Reading Time	12:46
Minutes Elapsed between readings	5
Total Elapsed Minutes	10
Rate (mL/min)	200
Depth to Water (ft)	11.32
Total Volume Purged (mL)	2000
pH	6.14
pH 2 decimals	6.14
Conductivity (mS/cm)	0.341
cond sig figs	0.341
Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).	
Turbidity (NTU)	3.38
turbidity sig figs	3.4
Dissolved Oxygen (mg/L)	0.4
DO 2 decimals	0.40
Temperature (Degrees Celcius)	15.5
temp 2 decimals	15.50
Redox (ORP mV)	-1.4
Color	Clear
Notable Odors	Mild
parameters	@12:46, DTW:11.32, pH6.14, temp:15.5, cond:0.341,turb:3.38, DO:0.4, redox:-1.4
Stabilization Calculation - TGI	Continue purging, the parameters are not stable: pH is not stable ; conductivity is stable ; turbidity is not stable ; DO is stable ; temperature is stable ; ORP is stable ; time elapsed is 10 minutes

Stabilization Calculation - site 775040

Continue purging, the parameters are not stable: pH is not stable ; conductivity is stable ; turbidity is not stable ; DO is not stable ; temperature is stable ; ORP is stable ; time elapsed is 10 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@12:51, DTW:11.34, pH6.15, temp:15.5, cond:0.34,turb:0.98, DO:0.33, redox:-4

Site ID, Well ID	97502, MW-13
Reading Time	12:51
Minutes Elapsed between readings	5
Total Elapsed Minutes	15
Rate (mL/min)	200
Depth to Water (ft)	11.34
Total Volume Purged (mL)	3000
pH	6.15
pH 2 decimals	6.15
Conductivity (mS/cm)	0.34
cond sig figs	0.340

Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).

Turbidity (NTU)	0.98
turbidity sig figs	0.98
Dissolved Oxygen (mg/L)	0.33
DO 2 decimals	0.33
Temperature (Degrees Celcius)	15.5
temp 2 decimals	15.50
Redox (ORP mV)	-4
Color	Clear
Notable Odors	Mild
parameters	@12:51, DTW:11.34, pH6.15, temp:15.5, cond:0.34,turb:0.98, DO:0.33, redox:-4

Stabilization Calculation - TGI	You may sample the well.
Stabilization Calculation - site 775040	Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is not stable ; DO is not stable ; temperature is stable ; ORP is stable ; time elapsed is 15 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

Sampling

Are you able to sample this location?	Yes
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Sample Information

Sample ID	MW-13-20210928
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Duplicate ID	DUP-1-092821
Sample Time	12:52
Sample Type	Grab
Sample Equipment	Peristaltic
Field Filtered Sample?	No
Sample Depth (ft-bmp) (e.g. pump intake)	15
Color	Clear
Notable Odors	Moderate
Analytes and Methods	See Chain-of-Custody.

Well Inspection

Well inspection completed?	Yes
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Well Inspection Details

Is well easy to locate?	Yes
Well Type	Flushmount
Is well in an area prone to flooding?	No
Are well labels present on the outside of the well?	No
Are bolts missing?	No
Are well labels present on the inside of the well?	No
Lock present?	Yes
Lock Functioning?	No
Well Locked at Arrival?	Yes
Well housing pad in good shape?	Yes

Close Out

General Comments	None
Is this record complete?	Yes

97502, MW-14, 2021-09-28, 16:06, GW Sampling

Created	2021-09-28 22:13:44 UTC by Michael Andrews
Updated	2021-09-28 23:27:35 UTC by Michael Andrews
Location	48.505297795815, -122.238614662477
Status	■ Ready for QC

Note: Before you begin, have you synced?

Project Details

Chevron	Chevron
Site ID	97502, Retail Outlet 97502
Site ID	97502
Site Location City	Sedro Woolley
Site Location State	Washington
Site Location	Sedro Woolley, Washington
Project Number	30064310, Hamilton, Ada
Project Number	30064310
Date	2021-09-28
Sampling Event	Quarterly
Weather	Cloudy
Sampler Name	Michael Andrews
Additional field staff?	No

Well (Location) Details

IMPORTANT! You must create a SEPARATE groundwater sampling record after creating a gauging record. Do not change your gauging record into a groundwater sampling record. If you have questions, ask your TM!

Well ID	MW-14
Well ID	MW-14
Turboscope Database ID	3606
Are you able to locate this well?	Yes
Work Performed at Location	GW Sampling

Well Information

Top of Screen (ft-bgs)	5.0
Bottom of Screen (ft-bgs)	20.0
Casing Diameter (in)	4.0
Well Casing Material	PVC
Measuring Point Description	Top of Casing
Historic Average DTW (ft-bmp)	8.5

Gauging

Are you able to gauge this well?	Yes
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Gauging Details

Type of Gauging Equipment	Water Level Meter
Well Head PID Reading (ppm)	0.3
Gauging Time	15:15

Is Well Dry?	No
Is Product Present?	No
Was product removed?	No
Static Water Level (ft-bmp)	10.62
Static Water Level (Fixed)	10.62
DTW QC Check	QC Pass
Total Depth (ft-bmp)	12.4
Total Depth (Fixed)	12.4
TD QC Check	QC Pass
Water Column (ft)	1.78
Gallons in Well	1.16

Evacuation

Method details, purge/no-purge information, and field parameters.

Evacuation Details

Method Details

Purge Method	Low-Flow
Purge Equipment	Peristaltic
Water Quality Meter Make/Model (Select One or More)	YSI Pro Plus

No-Purge: PDB/Hydrasleeve

Note: Selecting "Both" assumes details regarding the same Hydrasleeve/PDB

Deployment Details

PDB Details

A modified Trip Blank must be taken at time of deployment.

A modified Equipment Blank of fill water must be taken at time of deployment.

Purge Details

Purge Depth (ft-bmp) (e.g. Pump Intake)	11.5
Purge Start	15:35
Purge End (Before Sample Collection)	16:05
Purge Measurement Units	Milliliters
Total Milliliters Purged	6000
Well Volumes Purged (total)	1.37

Volumetric Details

Borehole Volume Multiplier: _____ CD | BD Multiplier 2" | 8" 0.8 2" | 10" 1.1 4" | 8" 1.1 4" | 10" 1.5 4" | 12" 2.0 6" | 10" 2.1 6" | 12" 2.6 _____ BD = Borehole Diameter CD = Casing Diameter
" = inches

One Borehole Volume (gallons)	0
Specified Volumes	1.5
Calculated Volume (gallons)	0

Enter purging and final field parameters in the Field Parameters section below.

@15:35, DTW:10.89, pH5.93, temp:15, cond:0.355,turb:203, DO:0.71, redox:26.2

Site ID, Well ID	97502, MW-14
Reading Time	15:35
Rate (mL/min)	200
Depth to Water (ft)	10.89
Total Volume Purged (mL)	0
pH	5.93
pH 2 decimals	5.93
Conductivity (mS/cm)	0.355
cond sig figs	0.355
Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).	
Turbidity (NTU)	203
turbidity sig figs	203
Dissolved Oxygen (mg/L)	0.71
DO 2 decimals	0.71
Temperature (Degrees Celcius)	15
temp 2 decimals	15.00
Redox (ORP mV)	26.2
Color	Clear
Notable Odors	Mild
parameters	@15:35, DTW:10.89, pH5.93, temp:15, cond:0.355,turb:203, DO:0.71, redox:26.2

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@15:40, DTW:10.89, pH5.94, temp:15, cond:0.365,turb:127, DO:0.31, redox:13

Site ID, Well ID	97502, MW-14
Reading Time	15:40
Minutes Elapsed between readings	5
Total Elapsed Minutes	5
Rate (mL/min)	200
Depth to Water (ft)	10.89
Total Volume Purged (mL)	1000
pH	5.94
pH 2 decimals	5.94
Conductivity (mS/cm)	0.365
cond sig figs	0.365
Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).	
Turbidity (NTU)	127
turbidity sig figs	127
Dissolved Oxygen (mg/L)	0.31
DO 2 decimals	0.31

Temperature (Degrees Celcius)	15
temp 2 decimals	15.00
Redox (ORP mV)	13
Color	Clear
Notable Odors	Mild
parameters	@15:40, DTW:10.89, pH5.94, temp:15, cond:0.365,turb:127, DO:0.31, redox:13
Stabilization Calculation - TGI	Continue purging, the parameters are not stable: pH is not stable ; conductivity is not stable ; turbidity is not stable ; DO is not stable ; temperature is not stable ; ORP is not stable ; time elapsed is 5 minutes
Stabilization Calculation - site 775040	Continue purging, the parameters are not stable: pH is not stable ; conductivity is not stable ; turbidity is not stable ; DO is not stable ; temperature is not stable ; ORP is not stable ; time elapsed is 5 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@15:45, DTW:10.9, pH5.94, temp:14.8, cond:0.366,turb:104, DO:0.25, redox:0.6

Site ID, Well ID	97502, MW-14
Reading Time	15:45
Minutes Elapsed between readings	5
Total Elapsed Minutes	10
Rate (mL/min)	200
Depth to Water (ft)	10.9
Total Volume Purged (mL)	2000
pH	5.94
pH 2 decimals	5.94
Conductivity (mS/cm)	0.366
cond sig figs	0.366
Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).	
Turbidity (NTU)	104
turbidity sig figs	104
Dissolved Oxygen (mg/L)	0.25
DO 2 decimals	0.25
Temperature (Degrees Celcius)	14.8
temp 2 decimals	14.80
Redox (ORP mV)	0.6
Color	Clear
Notable Odors	Mild
parameters	@15:45, DTW:10.9, pH5.94, temp:14.8, cond:0.366,turb:104, DO:0.25, redox:0.6
Stabilization Calculation - TGI	Continue purging, the parameters are not stable: pH is stable ; conductivity is not stable ; turbidity is not stable ; DO is not stable ; temperature is stable ; ORP is not stable ; time elapsed is 10 minutes
Stabilization Calculation - site 775040	Continue purging, the parameters are not stable: pH is stable ; conductivity is not stable ; turbidity is not stable ; DO is not stable ; temperature is stable ; ORP is not stable ; time elapsed is 10 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@15:50, DTW:10.91, pH5.94, temp:14.9, cond:0.367,turb:92.5, DO:0.25, redox:-4.9

Site ID, Well ID	97502, MW-14
Reading Time	15:50
Minutes Elapsed between readings	5
Total Elapsed Minutes	15
Rate (mL/min)	200
Depth to Water (ft)	10.91
Total Volume Purged (mL)	3000
pH	5.94
pH 2 decimals	5.94
Conductivity (mS/cm)	0.367
cond sig figs	0.367

Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).

Turbidity (NTU)	92.5
turbidity sig figs	92.5
Dissolved Oxygen (mg/L)	0.25
DO 2 decimals	0.25
Temperature (Degrees Celcius)	14.9
temp 2 decimals	14.90
Redox (ORP mV)	-4.9
Color	Clear
Notable Odors	Mild

parameters @15:50, DTW:10.91, pH5.94, temp:14.9, cond:0.367,turb:92.5, DO:0.25, redox:-4.9

Stabilization Calculation - TGI Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is not stable ; DO is stable ; temperature is stable ; ORP is not stable ; time elapsed is 15 minutes

Stabilization Calculation - site 775040 Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is not stable ; DO is not stable ; temperature is stable ; ORP is not stable ; time elapsed is 15 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@15:55, DTW:10.92, pH5.94, temp:14.9, cond:0.368,turb:38.9, DO:0.23, redox:-19.7

Site ID, Well ID	97502, MW-14
Reading Time	15:55
Minutes Elapsed between readings	5
Total Elapsed Minutes	20

Rate (mL/min)	200
Depth to Water (ft)	10.92
Total Volume Purged (mL)	4000
pH	5.94
pH 2 decimals	5.94
Conductivity (mS/cm)	0.368
cond sig figs	0.368
Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).	
Turbidity (NTU)	38.9
turbidity sig figs	38.9
Dissolved Oxygen (mg/L)	0.23
DO 2 decimals	0.23
Temperature (Degrees Celcius)	14.9
temp 2 decimals	14.90
Redox (ORP mV)	-19.7
Color	Clear
Notable Odors	Mild
parameters	@15:55, DTW:10.92, pH5.94, temp:14.9, cond:0.368,turb:38.9, DO:0.23, redox:-19.7
Stabilization Calculation - TGI	Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is not stable ; DO is stable ; temperature is stable ; ORP is not stable ; time elapsed is 20 minutes
Stabilization Calculation - site 775040	Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is not stable ; DO is stable ; temperature is stable ; ORP is not stable ; time elapsed is 20 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@16:00, DTW:10.91, pH5.99, temp:14.9, cond:0.379,turb:39.4, DO:0.2, redox:-18.5

Site ID, Well ID	97502, MW-14
Reading Time	16:00
Minutes Elapsed between readings	5
Total Elapsed Minutes	25
Rate (mL/min)	200
Depth to Water (ft)	10.91
Total Volume Purged (mL)	5000
pH	5.99
pH 2 decimals	5.99
Conductivity (mS/cm)	0.379
cond sig figs	0.379
Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).	
Turbidity (NTU)	39.4
turbidity sig figs	39.4
Dissolved Oxygen (mg/L)	0.2

DO 2 decimals	0.20
Temperature (Degrees Celcius)	14.9
temp 2 decimals	14.90
Redox (ORP mV)	-18.5
Color	Clear
Notable Odors	Mild
parameters	@16:00, DTW:10.91, pH5.99, temp:14.9, cond:0.379,turb:39.4, DO:0.2, redox:-18.5
Stabilization Calculation - TGI	Continue purging, the parameters are not stable: pH is stable ; conductivity is not stable ; turbidity is not stable ; DO is stable ; temperature is stable ; ORP is not stable ; time elapsed is 25 minutes
Stabilization Calculation - site 775040	Continue purging, the parameters are not stable: pH is stable ; conductivity is not stable ; turbidity is not stable ; DO is not stable ; temperature is stable ; ORP is not stable ; time elapsed is 25 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@16:05, DTW:10.91, pH6.01, temp:14.9, cond:0.37,turb:36.7, DO:0.2, redox:-22.2

Site ID, Well ID	97502, MW-14
Reading Time	16:05
Minutes Elapsed between readings	5
Total Elapsed Minutes	30
Rate (mL/min)	200
Depth to Water (ft)	10.91
Total Volume Purged (mL)	6000
pH	6.01
pH 2 decimals	6.01
Conductivity (mS/cm)	0.37
cond sig figs	0.370
Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).	
Turbidity (NTU)	36.7
turbidity sig figs	36.7
Dissolved Oxygen (mg/L)	0.2
DO 2 decimals	0.20
Temperature (Degrees Celcius)	14.9
temp 2 decimals	14.90
Redox (ORP mV)	-22.2
Color	Clear
Notable Odors	Mild
parameters	@16:05, DTW:10.91, pH6.01, temp:14.9, cond:0.37,turb:36.7, DO:0.2, redox:-22.2
Stabilization Calculation - TGI	You may sample the well.
Stabilization Calculation - site 775040	Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is not stable ; DO is not stable ; temperature is stable ; ORP is stable ; time elapsed is 30 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

Sampling

Are you able to sample this location?	Yes
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Sample Information

Sample ID	MW-14-20210928
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Sample Time	16:06
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Sample Type	Grab
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Sample Equipment	Peristaltic
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Field Filtered Sample?	No
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Sample Depth (ft-bmp) (e.g. pump intake)	11.5
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Color	Clear
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Notable Odors	Mild
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Analytes and Methods	See Chain-of-Custody.
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Well Inspection

Well inspection completed?	Yes
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Well Inspection Details

Is well easy to locate?	Yes
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Well Type	Flushmount
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Is well in an area prone to flooding?	No
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Are well labels present on the outside of the well?	No
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Are bolts missing?	No
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Are well labels present on the inside of the well?	No
--	----

Lock present?	No
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Well housing pad in good shape?	Yes
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Close Out

General Comments	None
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Is this record complete?	Yes
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97502, MW-15, 2021-09-27, 16:15, GW Sampling

Created	2021-09-27 22:51:46 UTC by Brian Pauley
Updated	2021-09-27 23:34:38 UTC by Brian Pauley
Location	48.5055779898991, -122.238986352572
Status	■ Ready for QC

Note: Before you begin, have you synced?

Project Details

Chevron	Chevron
Site ID	97502, Retail Outlet 97502
Site ID	97502
Site Location City	Sedro Woolley
Site Location State	Washington
Site Location	Sedro Woolley, Washington
Project Number	30064310, Hamilton, Ada
Project Number	30064310
Date	2021-09-27
Sampling Event	Quarterly
Weather	Raining
Sampler Name	Brian Pauley
Additional field staff?	No

Well (Location) Details

IMPORTANT! You must create a SEPARATE groundwater sampling record after creating a gauging record. Do not change your gauging record into a groundwater sampling record. If you have questions, ask your TM!

Well ID	MW-15
Well ID	MW-15
Turboscope Database ID	10755
Are you able to locate this well?	Yes
Work Performed at Location	GW Sampling

Well Information

Top of Screen (ft-bgs)	5.0
Bottom of Screen (ft-bgs)	20.0
Casing Diameter (in)	2
Well Casing Material	PVC
Measuring Point Description	Top of Casing

Gauging

Are you able to gauge this well?	Yes
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Gauging Details

Type of Gauging Equipment	Interface Probe
Gauging Time	15:52
Is Well Dry?	No
Is Product Present?	No

Was product removed?	No
Static Water Level (ft-bmp)	10.09
Static Water Level (Fixed)	10.09
DTW QC Check	QC Pass
Total Depth (ft-bmp)	19.55
Total Depth (Fixed)	19.55
TD QC Check	QC Pass
Water Column (ft)	9.46
Gallons in Well	1.54

Evacuation

Method details, purge/no-purge information, and field parameters.

Evacuation Details

Method Details

Purge Method	Low-Flow
Purge Equipment	Peristaltic
Water Quality Meter Make/Model (Select One or More)	YSI Pro Plus
Decontamination Method	2 Stage Rinse

No-Purge: PDB/Hydrasleeve

Note: Selecting "Both" assumes details regarding the same Hydrasleeve/PDB

Deployment Details

PDB Details

A modified Trip Blank must be taken at time of deployment.

A modified Equipment Blank of fill water must be taken at time of deployment.

Purge Details

Purge Depth (ft-bmp) (e.g. Pump Intake)	15
Purge Start	15:52
Purge End (Before Sample Collection)	16:10
Purge Measurement Units	Gallons
Total Gallons Purged	1
Well Volumes Purged (total)	0.65

Volumetric Details

Borehole Volume Multiplier: _____ CD | BD Multiplier 2" | 8" 0.8 2" | 10" 1.1 4" | 8" 1.1 4" | 10" 1.5 4" | 12" 2.0 6" | 10" 2.1 6" | 12" 2.6 _____ BD = Borehole Diameter CD = Casing Diameter " = inches

One Borehole Volume (gallons)	0
Specified Volumes	1.5
Calculated Volume (gallons)	0

Enter purging and final field parameters in the Field Parameters section below.

@15:56, DTW:10.2, pH6.32, temp:16.4, cond:205.2,turb:0.02, DO:0.69, redox:9.4

Site ID, Well ID	97502, MW-15
Reading Time	15:56
Rate (mL/min)	150
Depth to Water (ft)	10.2
Total Volume Purged (mL)	100
pH	6.32
pH 2 decimals	6.32
Conductivity (mS/cm)	205.2
cond sig figs	205
Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).	
Turbidity (NTU)	0.02
turbidity sig figs	0.02
Dissolved Oxygen (mg/L)	0.69
DO 2 decimals	0.69
Temperature (Degrees Celcius)	16.4
temp 2 decimals	16.40
Redox (ORP mV)	9.4
Color	Clear
Notable Odors	None
parameters	@15:56, DTW:10.2, pH6.32, temp:16.4, cond:205.2,turb:0.02, DO:0.69, redox:9.4

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@16:00, DTW:10.11, pH6.35, temp:16.4, cond:205.2,turb:0.02, DO:0.34, redox:3.2

Site ID, Well ID	97502, MW-15
Reading Time	16:00
Minutes Elapsed between readings	4
Total Elapsed Minutes	4
Rate (mL/min)	150
Depth to Water (ft)	10.11
Total Volume Purged (mL)	600
pH	6.35
pH 2 decimals	6.35
Conductivity (mS/cm)	205.2
cond sig figs	205
Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).	
Turbidity (NTU)	0.02
turbidity sig figs	0.02
Dissolved Oxygen (mg/L)	0.34
DO 2 decimals	0.34
Temperature (Degrees Celcius)	16.4

temp 2 decimals	16.40
Redox (ORP mV)	3.2
Color	Clear
Notable Odors	None
parameters	@16:00, DTW:10.11, pH6.35, temp:16.4, cond:205.2,turb:0.02, DO:0.34, redox:3.2
Stabilization Calculation - TGI	Continue purging, the parameters are not stable: pH is not stable ; conductivity is not stable ; turbidity is not stable ; DO is not stable ; temperature is not stable ; ORP is not stable ; time elapsed is 4 minutes
Stabilization Calculation - site 775040	Continue purging, the parameters are not stable: pH is not stable ; conductivity is not stable ; turbidity is not stable ; DO is not stable ; temperature is not stable ; ORP is not stable ; time elapsed is 4 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@16:04, DTW:10.1, pH6.41, temp:16.5, cond:205.8,turb:0.02, DO:0.36, redox:-3.9

Site ID, Well ID	97502, MW-15
Reading Time	16:04
Minutes Elapsed between readings	4
Total Elapsed Minutes	8
Rate (mL/min)	150
Depth to Water (ft)	10.1
Total Volume Purged (mL)	1800
pH	6.41
pH 2 decimals	6.41
Conductivity (mS/cm)	205.8
cond sig figs	206
Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).	
Turbidity (NTU)	0.02
turbidity sig figs	0.02
Dissolved Oxygen (mg/L)	0.36
DO 2 decimals	0.36
Temperature (Degrees Celcius)	16.5
temp 2 decimals	16.50
Redox (ORP mV)	-3.9
Color	Clear
Notable Odors	None
parameters	@16:04, DTW:10.1, pH6.41, temp:16.5, cond:205.8,turb:0.02, DO:0.36, redox:-3.9
Stabilization Calculation - TGI	Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is stable ; DO is not stable ; temperature is stable ; ORP is not stable ; time elapsed is 8 minutes
Stabilization Calculation - site 775040	Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is stable ; DO is not stable ; temperature is stable ; ORP is not stable ; time elapsed is 8 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@16:08, DTW:10.15, pH6.33, temp:16.5, cond:205.2,turb:0.02, DO:0.26, redox:-1.2

Site ID, Well ID	97502, MW-15
Reading Time	16:08
Minutes Elapsed between readings	4
Total Elapsed Minutes	12
Rate (mL/min)	150
Depth to Water (ft)	10.15
Total Volume Purged (mL)	2400
pH	6.33
pH 2 decimals	6.33
Conductivity (mS/cm)	205.2
cond sig figs	205
Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).	
Turbidity (NTU)	0.02
turbidity sig figs	0.02
Dissolved Oxygen (mg/L)	0.26
DO 2 decimals	0.26
Temperature (Degrees Celcius)	16.5
temp 2 decimals	16.50
Redox (ORP mV)	-1.2
Color	Clear
Notable Odors	None
parameters	@16:08, DTW:10.15, pH6.33, temp:16.5, cond:205.2,turb:0.02, DO:0.26, redox:-1.2
Stabilization Calculation - TGI	You may sample the well.
Stabilization Calculation - site 775040	Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is stable ; DO is not stable ; temperature is stable ; ORP is stable ; time elapsed is 12 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

Sampling

Are you able to sample this location?	Yes
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Sample Information

Sample ID	MW-15-20210927
Sample Time	16:15
Sample Type	Composite

Sample Equipment	Peristaltic
Field Filtered Sample?	No
Sample Depth (ft-bmp) (e.g. pump intake)	15
Color	Clear
Notable Odors	Mild
Analytes and Methods	See Chain-of-Custody.

Well Inspection

Well inspection completed?	No
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Close Out

General Comments	None
Is this record complete?	Yes

97502, MW-16, 2021-09-27, 15:15, GW Sampling

Created	2021-09-27 21:34:52 UTC by Brian Pauley
Updated	2021-09-27 22:50:37 UTC by Brian Pauley
Location	48.5053089642922, -122.23883162736
Status	■ Ready for QC

Note: Before you begin, have you synced?

Project Details

Chevron	Chevron
Site ID	97502, Retail Outlet 97502
Site ID	97502
Site Location City	Sedro Woolley
Site Location State	Washington
Site Location	Sedro Woolley, Washington
Project Number	30064310, Hamilton, Ada
Project Number	30064310
Date	2021-09-27
Weather	Raining
Sampler Name	Brian Pauley
Additional field staff?	No

Well (Location) Details

IMPORTANT! You must create a SEPARATE groundwater sampling record after creating a gauging record. Do not change your gauging record into a groundwater sampling record. If you have questions, ask your TM!

Well ID	MW-16
Well ID	MW-16
Turboscope Database ID	10756
Are you able to locate this well?	Yes
Work Performed at Location	GW Sampling

Well Information

Top of Screen (ft-bgs)	5.0
Bottom of Screen (ft-bgs)	10.0
Casing Diameter (in)	2.0
Measuring Point Description	Top of Casing

Gauging

Are you able to gauge this well?	Yes
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Gauging Details

Type of Gauging Equipment	Interface Probe
Well Head PID Reading (ppm)	162.8
Gauging Time	14:35
Is Well Dry?	No
Is Product Present?	No
Was product removed?	No

Static Water Level (ft-bmp)	9.75
Static Water Level (Fixed)	9.75
DTW QC Check	QC Pass
Total Depth (ft-bmp)	20
Total Depth (Fixed)	20.0
TD QC Check	QC Pass
Water Column (ft)	10.25
Gallons in Well	1.67

Evacuation

Method details, purge/no-purge information, and field parameters.

Evacuation Details

Method Details

Purge Method	Low-Flow
Purge Equipment	Peristaltic
Water Quality Meter Make/Model (Select One or More)	YSI Pro Plus
Decontamination Method	2 Stage Rinse

No-Purge: PDB/Hydrasleeve

Note: Selecting "Both" assumes details regarding the same Hydrasleeve/PDB

Deployment Details

PDB Details

A modified Trip Blank must be taken at time of deployment.

A modified Equipment Blank of fill water must be taken at time of deployment.

Purge Details

Purge Depth (ft-bmp) (e.g. Pump Intake)	14
Purge Start	14:36
Purge End (Before Sample Collection)	15:14
Purge Measurement Units	Gallons
Total Gallons Purged	2.5
Well Volumes Purged (total)	1.50

Volumetric Details

Borehole Volume Multiplier: _____ CD | BD Multiplier 2" | 8" 0.8 2" | 10" 1.1 4" | 8" 1.1 4" | 10" 1.5 4" | 12" 2.0 6" | 10" 2.1 6" | 12" 2.6 _____ BD = Borehole Diameter CD = Casing Diameter
" = inches

One Borehole Volume (gallons)	0
Specified Volumes	1.5
Calculated Volume (gallons)	0

Enter purging and final field parameters in the Field Parameters section below.

@14:36, DTW:9.75, pH6.01, temp:16, cond:251.8,turb:40.5, DO:0.95, redox:12.4

Site ID, Well ID	97502, MW-16
Reading Time	14:36
Rate (mL/min)	150
Depth to Water (ft)	9.75
Total Volume Purged (mL)	100
pH	6.01
pH 2 decimals	6.01
Conductivity (mS/cm)	251.8
cond sig figs	252
Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).	
Turbidity (NTU)	40.5
turbidity sig figs	40.5
Dissolved Oxygen (mg/L)	0.95
DO 2 decimals	0.95
Temperature (Degrees Celcius)	16
temp 2 decimals	16.00
Redox (ORP mV)	12.4
Color	Clear
Notable Odors	None
parameters	@14:36, DTW:9.75, pH6.01, temp:16, cond:251.8,turb:40.5, DO:0.95, redox:12.4

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@14:44, DTW:9.75, pH6.05, temp:16.2, cond:252.5,turb:40.7, DO:0.35, redox:0.6

Site ID, Well ID	97502, MW-16
Reading Time	14:44
Minutes Elapsed between readings	8
Total Elapsed Minutes	8
Rate (mL/min)	150
Depth to Water (ft)	9.75
Total Volume Purged (mL)	600
pH	6.05
pH 2 decimals	6.05
Conductivity (mS/cm)	252.5
cond sig figs	253
Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).	
Turbidity (NTU)	40.7
turbidity sig figs	40.7
Dissolved Oxygen (mg/L)	0.35
DO 2 decimals	0.35
Temperature (Degrees Celcius)	16.2
temp 2 decimals	16.20

Redox (ORP mV)	0.6
Color	Clear
Notable Odors	None
parameters	@14:44, DTW:9.75, pH6.05, temp:16.2, cond:252.5,turb:40.7, DO:0.35, redox:0.6
Stabilization Calculation - TGI	Continue purging, the parameters are not stable: pH is not stable ; conductivity is not stable ; turbidity is not stable ; DO is not stable ; temperature is not stable ; ORP is not stable ; time elapsed is 8 minutes
Stabilization Calculation - site 775040	Continue purging, the parameters are not stable: pH is not stable ; conductivity is not stable ; turbidity is not stable ; DO is not stable ; temperature is not stable ; ORP is not stable ; time elapsed is 8 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@14:47, DTW:9.75, pH6.09, temp:16.2, cond:252.4,turb:43.2, DO:0.3, redox:-4.3

Site ID, Well ID	97502, MW-16
Reading Time	14:47
Minutes Elapsed between readings	3
Total Elapsed Minutes	11
Rate (mL/min)	150
Depth to Water (ft)	9.75
Total Volume Purged (mL)	1200
pH	6.09
pH 2 decimals	6.09
Conductivity (mS/cm)	252.4
cond sig figs	252
Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).	
Turbidity (NTU)	43.2
turbidity sig figs	43.2
Dissolved Oxygen (mg/L)	0.3
DO 2 decimals	0.30
Temperature (Degrees Celcius)	16.2
temp 2 decimals	16.20
Redox (ORP mV)	-4.3
Color	Clear
Notable Odors	None
parameters	@14:47, DTW:9.75, pH6.09, temp:16.2, cond:252.4,turb:43.2, DO:0.3, redox:-4.3
Stabilization Calculation - TGI	Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is stable ; DO is not stable ; temperature is stable ; ORP is not stable ; time elapsed is 11 minutes
Stabilization Calculation - site 775040	Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is not stable ; DO is not stable ; temperature is stable ; ORP is not stable ; time elapsed is 11 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@14:50, DTW:9.75, pH6.09, temp:16.3, cond:251.8,turb:41.5, DO:0.26, redox:-8.1

Site ID, Well ID	97502, MW-16
Reading Time	14:50
Minutes Elapsed between readings	3
Total Elapsed Minutes	14
Rate (mL/min)	150
Depth to Water (ft)	9.75
Total Volume Purged (mL)	1800
pH	6.09
pH 2 decimals	6.09
Conductivity (mS/cm)	251.8
cond sig figs	252
Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).	
Turbidity (NTU)	41.5
turbidity sig figs	41.5
Dissolved Oxygen (mg/L)	0.26
DO 2 decimals	0.26
Temperature (Degrees Celcius)	16.3
temp 2 decimals	16.30
Redox (ORP mV)	-8.1
Color	Clear
Notable Odors	None
parameters	@14:50, DTW:9.75, pH6.09, temp:16.3, cond:251.8,turb:41.5, DO:0.26, redox:-8.1
Stabilization Calculation - TGI	You may sample the well.
Stabilization Calculation - site 775040	Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is not stable ; DO is not stable ; temperature is stable ; ORP is stable ; time elapsed is 14 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@14:53, DTW:9.75, pH6.09, temp:16.4, cond:256,turb:25.5, DO:0.24, redox:-9.4

Site ID, Well ID	97502, MW-16
Reading Time	14:53
Minutes Elapsed between readings	3
Total Elapsed Minutes	17
Rate (mL/min)	150
Depth to Water (ft)	9.75

Total Volume Purged (mL)	2400
pH	6.09
pH 2 decimals	6.09
Conductivity (mS/cm)	256
cond sig figs	256
Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).	
Turbidity (NTU)	25.5
turbidity sig figs	25.5
Dissolved Oxygen (mg/L)	0.24
DO 2 decimals	0.24
Temperature (Degrees Celcius)	16.4
temp 2 decimals	16.40
Redox (ORP mV)	-9.4
Color	Clear
Notable Odors	None
parameters	@14:53, DTW:9.75, pH6.09, temp:16.4, cond:256,turb:25.5, DO:0.24, redox:-9.4
Stabilization Calculation - TGI	Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is not stable ; DO is stable ; temperature is stable ; ORP is stable ; time elapsed is 17 minutes
Stabilization Calculation - site 775040	Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is not stable ; DO is not stable ; temperature is stable ; ORP is stable ; time elapsed is 17 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@14:56, DTW:9.75, pH6.07, temp:16.5, cond:255.4,turb:25.5, DO:0.24, redox:-8.8

Site ID, Well ID	97502, MW-16
Reading Time	14:56
Minutes Elapsed between readings	3
Total Elapsed Minutes	20
Rate (mL/min)	150
Depth to Water (ft)	9.75
Total Volume Purged (mL)	3000
pH	6.07
pH 2 decimals	6.07
Conductivity (mS/cm)	255.4
cond sig figs	255
Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).	
Turbidity (NTU)	25.5
turbidity sig figs	25.5
Dissolved Oxygen (mg/L)	0.24
DO 2 decimals	0.24
Temperature (Degrees Celcius)	16.5

temp 2 decimals	16.50
Redox (ORP mV)	-8.8
Color	Clear
Notable Odors	None
parameters	@14:56, DTW:9.75, pH6.07, temp:16.5, cond:255.4,turb:25.5, DO:0.24, redox:-8.8
Stabilization Calculation - TGI	Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is not stable ; DO is stable ; temperature is stable ; ORP is stable ; time elapsed is 20 minutes
Stabilization Calculation - site 775040	Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is not stable ; DO is stable ; temperature is stable ; ORP is stable ; time elapsed is 20 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@15:01, DTW:9.75, pH6.04, temp:16.4, cond:254.1,turb:6.36, DO:0.22, redox:-6.6

Site ID, Well ID	97502, MW-16
Reading Time	15:01
Minutes Elapsed between readings	5
Total Elapsed Minutes	25
Rate (mL/min)	150
Depth to Water (ft)	9.75
Total Volume Purged (mL)	3600
pH	6.04
pH 2 decimals	6.04
Conductivity (mS/cm)	254.1
cond sig figs	254
Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).	
Turbidity (NTU)	6.36
turbidity sig figs	6.4
Dissolved Oxygen (mg/L)	0.22
DO 2 decimals	0.22
Temperature (Degrees Celcius)	16.4
temp 2 decimals	16.40
Redox (ORP mV)	-6.6
Color	Clear
Notable Odors	None
parameters	@15:01, DTW:9.75, pH6.04, temp:16.4, cond:254.1,turb:6.36, DO:0.22, redox:-6.6
Stabilization Calculation - TGI	Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is not stable ; DO is stable ; temperature is stable ; ORP is stable ; time elapsed is 25 minutes
Stabilization Calculation - site 775040	Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is not stable ; DO is stable ; temperature is stable ; ORP is stable ; time elapsed is 25 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@15:05, DTW:9.75, pH6.02, temp:16.5, cond:251.9,turb:2.6, DO:0.23, redox:-5.2

Site ID, Well ID	97502, MW-16
Reading Time	15:05
Minutes Elapsed between readings	4
Total Elapsed Minutes	29
Rate (mL/min)	150
Depth to Water (ft)	9.75
Total Volume Purged (mL)	4200
pH	6.02
pH 2 decimals	6.02
Conductivity (mS/cm)	251.9
cond sig figs	252
Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).	
Turbidity (NTU)	2.6
turbidity sig figs	2.6
Dissolved Oxygen (mg/L)	0.23
DO 2 decimals	0.23
Temperature (Degrees Celcius)	16.5
temp 2 decimals	16.50
Redox (ORP mV)	-5.2
Color	Clear
Notable Odors	None
parameters	@15:05, DTW:9.75, pH6.02, temp:16.5, cond:251.9,turb:2.6, DO:0.23, redox:-5.2
Stabilization Calculation - TGI	Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is not stable ; DO is stable ; temperature is stable ; ORP is stable ; time elapsed is 29 minutes
Stabilization Calculation - site 775040	Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is not stable ; DO is stable ; temperature is stable ; ORP is stable ; time elapsed is 29 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@15:09, DTW:9.75, pH6, temp:16.4, cond:249,turb:3.72, DO:0.21, redox:-3.4

Site ID, Well ID	97502, MW-16
Reading Time	15:09
Minutes Elapsed between readings	4
Total Elapsed Minutes	33

Rate (mL/min)	150
Depth to Water (ft)	9.75
Total Volume Purged (mL)	5000
pH	6
pH 2 decimals	6.00
Conductivity (mS/cm)	249
cond sig figs	249
Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).	
Turbidity (NTU)	3.72
turbidity sig figs	3.7
Dissolved Oxygen (mg/L)	0.21
DO 2 decimals	0.21
Temperature (Degrees Celcius)	16.4
temp 2 decimals	16.40
Redox (ORP mV)	-3.4
Color	Clear
Notable Odors	None
parameters	@15:09, DTW:9.75, pH6, temp:16.4, cond:249,turb:3.72, DO:0.21, redox:-3.4
Stabilization Calculation - TGI	Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is not stable ; DO is stable ; temperature is stable ; ORP is stable ; time elapsed is 33 minutes
Stabilization Calculation - site 775040	Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is not stable ; DO is stable ; temperature is stable ; ORP is stable ; time elapsed is 33 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@15:12, DTW:9.75, pH6.01, temp:16.3, cond:249,turb:1.44, DO:0.2, redox:-2.4

Site ID, Well ID	97502, MW-16
Reading Time	15:12
Minutes Elapsed between readings	3
Total Elapsed Minutes	36
Rate (mL/min)	150
Depth to Water (ft)	9.75
Total Volume Purged (mL)	5600
pH	6.01
pH 2 decimals	6.01
Conductivity (mS/cm)	249
cond sig figs	249
Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).	
Turbidity (NTU)	1.44
turbidity sig figs	1.4
Dissolved Oxygen (mg/L)	0.2

DO 2 decimals	0.20
Temperature (Degrees Celcius)	16.3
temp 2 decimals	16.30
Redox (ORP mV)	-2.4
Color	Clear
Notable Odors	None
parameters	@15:12, DTW:9.75, pH6.01, temp:16.3, cond:249,turb:1.44, DO:0.2, redox:-2.4
Stabilization Calculation - TGI	You may sample the well.
Stabilization Calculation - site 775040	Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is not stable ; DO is not stable ; temperature is stable ; ORP is stable ; time elapsed is 36 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

Sampling

Are you able to sample this location?	Yes
---------------------------------------	-----

Sample Information

Sample ID	MW-16
Sample Time	15:15
Sample Type	Composite
Sample Equipment	Peristaltic
Field Filtered Sample?	No
Sample Depth (ft-bmp) (e.g. pump intake)	14
Color	Clear
Notable Odors	None
Analytes and Methods	See Chain-of-Custody.

Well Inspection

Well inspection completed?	No
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Close Out

General Comments	None
Is this record complete?	Yes

97502, MW-17, 2021-09-28, 11:31, GW Sampling

Created	2021-09-28 18:01:45 UTC by Michael Andrews
Updated	2021-09-28 19:22:08 UTC by Michael Andrews
Location	48.5053494573091, -122.238754425312
Status	■ Ready for QC

Note: Before you begin, have you synced?

Project Details

Chevron	Chevron
Site ID	97502, Retail Outlet 97502
Site ID	97502
Site Location City	Sedro Woolley
Site Location State	Washington
Site Location	Sedro Woolley, Washington
Project Number	30064310, Hamilton, Ada
Project Number	30064310
Date	2021-09-28
Sampling Event	Quarterly
Weather	Cloudy
Sampler Name	Michael Andrews
Additional field staff?	Yes
List Additional Field Staff	Joseph spell

Well (Location) Details

IMPORTANT! You must create a SEPARATE groundwater sampling record after creating a gauging record. Do not change your gauging record into a groundwater sampling record. If you have questions, ask your TM!

Well ID	MW-17
Well ID	MW-17
Turboscope Database ID	10757
Are you able to locate this well?	Yes
Work Performed at Location	GW Sampling

Well Information

Top of Screen (ft-bgs)	5.0
Bottom of Screen (ft-bgs)	20.0
Casing Diameter (in)	2
Well Casing Material	PVC
Measuring Point Description	Top of Casing

Gauging

Are you able to gauge this well?	Yes
----------------------------------	-----

Gauging Details

Type of Gauging Equipment	Water Level Meter
Well Head PID Reading (ppm)	0.02
Gauging Time	11:02

Is Well Dry?	No
Is Product Present?	No
Was product removed?	No
Static Water Level (ft-bmp)	10.34
Static Water Level (Fixed)	10.34
DTW QC Check	QC Pass
Total Depth (ft-bmp)	19.64
Total Depth (Fixed)	19.64
TD QC Check	QC Pass
Water Column (ft)	9.3
Gallons in Well	1.51

Evacuation

Method details, purge/no-purge information, and field parameters.

Evacuation Details

Method Details

Purge Method	Low-Flow
Purge Equipment	Peristaltic
Water Quality Meter Make/Model (Select One or More)	YSI Pro Plus

No-Purge: PDB/Hydrasleeve

Note: Selecting "Both" assumes details regarding the same Hydrasleeve/PDB

Deployment Details

PDB Details

A modified Trip Blank must be taken at time of deployment.

A modified Equipment Blank of fill water must be taken at time of deployment.

Purge Details

Purge Depth (ft-bmp) (e.g. Pump Intake)	15
Purge Start	11:10
Purge End (Before Sample Collection)	11:30
Purge Measurement Units	Milliliters
Total Milliliters Purged	4000
Well Volumes Purged (total)	0.70

Volumetric Details

Borehole Volume Multiplier: _____ CD | BD Multiplier 2" | 8" 0.8 2" | 10" 1.1 4" | 8" 1.1 4" | 10" 1.5 4" | 12" 2.0 6" | 10" 2.1 6" | 12" 2.6 _____ BD = Borehole Diameter CD = Casing Diameter " = inches

One Borehole Volume (gallons)	0
Specified Volumes	1.5
Calculated Volume (gallons)	0

Enter purging and final field parameters in the Field Parameters section below.

@11:10, DTW:10.34, pH6.36, temp:15.9, cond:0.255,turb:4.09, DO:0.5, redox:-10.9

Site ID, Well ID	97502, MW-17
Reading Time	11:10
Rate (mL/min)	200
Depth to Water (ft)	10.34
Total Volume Purged (mL)	0
pH	6.36
pH 2 decimals	6.36
Conductivity (mS/cm)	0.255
cond sig figs	0.255
Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).	
Turbidity (NTU)	4.09
turbidity sig figs	4.1
Dissolved Oxygen (mg/L)	0.5
DO 2 decimals	0.50
Temperature (Degrees Celcius)	15.9
temp 2 decimals	15.90
Redox (ORP mV)	-10.9
Color	Clear
Notable Odors	Moderate
parameters	@11:10, DTW:10.34, pH6.36, temp:15.9, cond:0.255,turb:4.09, DO:0.5, redox:-10.9

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@11:15, DTW:10.55, pH6.29, temp:15.9, cond:0.254,turb:1.28, DO:0.37, redox:-19.9

Site ID, Well ID	97502, MW-17
Reading Time	11:15
Minutes Elapsed between readings	5
Total Elapsed Minutes	5
Rate (mL/min)	200
Depth to Water (ft)	10.55
Total Volume Purged (mL)	1000
pH	6.29
pH 2 decimals	6.29
Conductivity (mS/cm)	0.254
cond sig figs	0.254
Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).	
Turbidity (NTU)	1.28
turbidity sig figs	1.3
Dissolved Oxygen (mg/L)	0.37
DO 2 decimals	0.37

Temperature (Degrees Celcius)	15.9
temp 2 decimals	15.90
Redox (ORP mV)	-19.9
Color	Clear
Notable Odors	Moderate
parameters	@11:15, DTW:10.55, pH6.29, temp:15.9, cond:0.254,turb:1.28, DO:0.37, redox:-19.9
Stabilization Calculation - TGI	Continue purging, the parameters are not stable: pH is not stable ; conductivity is not stable ; turbidity is not stable ; DO is not stable ; temperature is not stable ; ORP is not stable ; time elapsed is 5 minutes
Stabilization Calculation - site 775040	Continue purging, the parameters are not stable: pH is not stable ; conductivity is not stable ; turbidity is not stable ; DO is not stable ; temperature is not stable ; ORP is not stable ; time elapsed is 5 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@11:20, DTW:10.56, pH6.32, temp:15.5, cond:0.255,turb:1.01, DO:0.28, redox:-28.3

Site ID, Well ID	97502, MW-17
Reading Time	11:20
Minutes Elapsed between readings	5
Total Elapsed Minutes	10
Rate (mL/min)	200
Depth to Water (ft)	10.56
Total Volume Purged (mL)	2000
pH	6.32
pH 2 decimals	6.32
Conductivity (mS/cm)	0.255
cond sig figs	0.255

Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).

Turbidity (NTU)	1.01
turbidity sig figs	1.0
Dissolved Oxygen (mg/L)	0.28
DO 2 decimals	0.28
Temperature (Degrees Celcius)	15.5
temp 2 decimals	15.50
Redox (ORP mV)	-28.3
Color	Clear
Notable Odors	Moderate
parameters	@11:20, DTW:10.56, pH6.32, temp:15.5, cond:0.255,turb:1.01, DO:0.28, redox:-28.3
Stabilization Calculation - TGI	Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is stable ; DO is stable ; temperature is stable ; ORP is not stable ; time elapsed is 10 minutes
Stabilization Calculation - site 775040	Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is not stable ; DO is not stable ; temperature is stable ; ORP is not stable ; time elapsed is 10 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@11:25, DTW:10.56, pH6.31, temp:15.2, cond:0.254,turb:0.41, DO:0.28, redox:-30.1

Site ID, Well ID	97502, MW-17
Reading Time	11:25
Minutes Elapsed between readings	5
Total Elapsed Minutes	15
Rate (mL/min)	200
Depth to Water (ft)	10.56
Total Volume Purged (mL)	3000
pH	6.31
pH 2 decimals	6.31
Conductivity (mS/cm)	0.254
cond sig figs	0.254

Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).

Turbidity (NTU)	0.41
turbidity sig figs	0.41
Dissolved Oxygen (mg/L)	0.28
DO 2 decimals	0.28
Temperature (Degrees Celcius)	15.2
temp 2 decimals	15.20
Redox (ORP mV)	-30.1
Color	Clear
Notable Odors	Moderate

parameters @11:25, DTW:10.56, pH6.31, temp:15.2, cond:0.254,turb:0.41, DO:0.28, redox:-30.1

Stabilization Calculation - TGI Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is stable ; DO is stable ; temperature is not stable ; ORP is not stable ; time elapsed is 15 minutes

Stabilization Calculation - site 775040 Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is stable ; DO is not stable ; temperature is not stable ; ORP is not stable ; time elapsed is 15 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@11:30, DTW:10.57, pH6.33, temp:15.4, cond:0.257,turb:0.45, DO:0.23, redox:-35.1

Site ID, Well ID	97502, MW-17
Reading Time	11:30
Minutes Elapsed between readings	5
Total Elapsed Minutes	20

Rate (mL/min)	200
Depth to Water (ft)	10.57
Total Volume Purged (mL)	4000
pH	6.33
pH 2 decimals	6.33
Conductivity (mS/cm)	0.257
cond sig figs	0.257
Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).	
Turbidity (NTU)	0.45
turbidity sig figs	0.45
Dissolved Oxygen (mg/L)	0.23
DO 2 decimals	0.23
Temperature (Degrees Celcius)	15.4
temp 2 decimals	15.40
Redox (ORP mV)	-35.1
Color	Clear
Notable Odors	Moderate
parameters	@11:30, DTW:10.57, pH6.33, temp:15.4, cond:0.257,turb:0.45, DO:0.23, redox:-35.1
Stabilization Calculation - TGI	You may sample the well.
Stabilization Calculation - site 775040	Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is stable ; DO is not stable ; temperature is stable ; ORP is stable ; time elapsed is 20 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

Sampling

Are you able to sample this location?	Yes
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Sample Information

Sample ID	MW-17-20210928
Sample Time	11:31
Sample Type	Grab
Sample Equipment	Peristaltic
Field Filtered Sample?	No
Sample Depth (ft-bmp) (e.g. pump intake)	15
Color	Clear
Notable Odors	Strong
Analytes and Methods	See Chain-of-Custody.

Well Inspection

Well inspection completed?	No
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Close Out

General Comments	None
Is this record complete?	Yes

97502, MW-18, 2021-09-28, 10:21, GW Sampling

Created	2021-09-28 16:43:45 UTC by Michael Andrews
Updated	2021-09-28 18:01:43 UTC by Michael Andrews
Location	48.5054345755358, -122.239132700602
Status	■ Ready for QC

Note: Before you begin, have you synced?

Project Details

Chevron	Chevron
Site ID	97502, Retail Outlet 97502
Site ID	97502
Site Location City	Sedro Woolley
Site Location State	Washington
Site Location	Sedro Woolley, Washington
Project Number	30064310, Hamilton, Ada
Project Number	30064310
Date	2021-09-28
Sampling Event	Quarterly
Weather	Cloudy
Sampler Name	Michael Andrews
Additional field staff?	No

Well (Location) Details

IMPORTANT! You must create a SEPARATE groundwater sampling record after creating a gauging record. Do not change your gauging record into a groundwater sampling record. If you have questions, ask your TM!

Well ID	MW-18
Well ID	MW-18
Turboscope Database ID	10758
Are you able to locate this well?	Yes
Work Performed at Location	GW Sampling

Well Information

Top of Screen (ft-bgs)	5.0
Bottom of Screen (ft-bgs)	20.0
Casing Diameter (in)	2
Well Casing Material	PVC
Measuring Point Description	Top of Casing

Gauging

Are you able to gauge this well?	Yes
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Gauging Details

Type of Gauging Equipment	Water Level Meter
Well Head PID Reading (ppm)	0.4
Gauging Time	09:46
Is Well Dry?	No

Is Product Present?	No
Was product removed?	No
Static Water Level (ft-bmp)	15.1
Static Water Level (Fixed)	15.1
DTW QC Check	QC Pass
Total Depth (ft-bmp)	19.74
Total Depth (Fixed)	19.74
TD QC Check	QC Pass
Water Column (ft)	4.64
Gallons in Well	0.75

Evacuation

Method details, purge/no-purge information, and field parameters.

Evacuation Details

Method Details

Purge Method	Low-Flow
Purge Equipment	Peristaltic
Water Quality Meter Make/Model (Select One or More)	YSI Pro Plus

No-Purge: PDB/Hydrasleeve

Note: Selecting "Both" assumes details regarding the same Hydrasleeve/PDB

Deployment Details

PDB Details

A modified Trip Blank must be taken at time of deployment.

A modified Equipment Blank of fill water must be taken at time of deployment.

Purge Details

Purge Depth (ft-bmp) (e.g. Pump Intake)	18
Purge Start	09:49
Purge End (Before Sample Collection)	10:19
Purge Measurement Units	Milliliters
Total Milliliters Purged	5000
Well Volumes Purged (total)	1.76

Volumetric Details

Borehole Volume Multiplier: _____ CD | BD Multiplier 2" | 8" 0.8 2" | 10" 1.1 4" | 8" 1.1 4" | 10" 1.5 4" | 12" 2.0 6" | 10" 2.1 6" | 12" 2.6 _____ BD = Borehole Diameter CD = Casing Diameter " = inches

One Borehole Volume (gallons)	0
Specified Volumes	1.5
Calculated Volume (gallons)	0

Enter purging and final field parameters in the Field Parameters section below.

@09:49, DTW:15.1, pH6.03, temp:15.3, cond:0.221,turb:19.1, DO:1.61, redox:58.1

Site ID, Well ID	97502, MW-18
Reading Time	09:49
Total Elapsed Minutes	0
Rate (mL/min)	200
Depth to Water (ft)	15.1
Total Volume Purged (mL)	0
pH	6.03
pH 2 decimals	6.03
Conductivity (mS/cm)	0.221
cond sig figs	0.221
Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).	
Turbidity (NTU)	19.1
turbidity sig figs	19.1
Dissolved Oxygen (mg/L)	1.61
DO 2 decimals	1.61
Temperature (Degrees Celcius)	15.3
temp 2 decimals	15.30
Redox (ORP mV)	58.1
Color	Clear
Notable Odors	None
parameters	@09:49, DTW:15.1, pH6.03, temp:15.3, cond:0.221,turb:19.1, DO:1.61, redox:58.1

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@09:54, DTW:15.49, pH5.83, temp:15.2, cond:0.219,turb:3.24, DO:1.65, redox:45.1

Site ID, Well ID	97502, MW-18
Reading Time	09:54
Minutes Elapsed between readings	5
Total Elapsed Minutes	5
Rate (mL/min)	200
Depth to Water (ft)	15.49
Total Volume Purged (mL)	1000
pH	5.83
pH 2 decimals	5.83
Conductivity (mS/cm)	0.219
cond sig figs	0.219
Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).	
Turbidity (NTU)	3.24
turbidity sig figs	3.2
Dissolved Oxygen (mg/L)	1.65
DO 2 decimals	1.65

Temperature (Degrees Celcius)	15.2
temp 2 decimals	15.20
Redox (ORP mV)	45.1
Color	Clear
Notable Odors	None
parameters	@09:54, DTW:15.49, pH5.83, temp:15.2, cond:0.219,turb:3.24, DO:1.65, redox:45.1
Stabilization Calculation - TGI	Continue purging, the parameters are not stable: pH is not stable ; conductivity is not stable ; turbidity is not stable ; DO is not stable ; temperature is not stable ; ORP is not stable ; time elapsed is 5 minutes
Stabilization Calculation - site 775040	Continue purging, the parameters are not stable: pH is not stable ; conductivity is not stable ; turbidity is not stable ; DO is not stable ; temperature is not stable ; ORP is not stable ; time elapsed is 5 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@09:59, DTW:15.51, pH5.85, temp:15.2, cond:0.219,turb:2.34, DO:1.65, redox:34.1

Site ID, Well ID	97502, MW-18
Reading Time	09:59
Minutes Elapsed between readings	5
Total Elapsed Minutes	10
Rate (mL/min)	200
Depth to Water (ft)	15.51
Total Volume Purged (mL)	2000
pH	5.85
pH 2 decimals	5.85
Conductivity (mS/cm)	0.219
cond sig figs	0.219
Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).	
Turbidity (NTU)	2.34
turbidity sig figs	2.3
Dissolved Oxygen (mg/L)	1.65
DO 2 decimals	1.65
Temperature (Degrees Celcius)	15.2
temp 2 decimals	15.20
Redox (ORP mV)	34.1
Color	Clear
Notable Odors	None
parameters	@09:59, DTW:15.51, pH5.85, temp:15.2, cond:0.219,turb:2.34, DO:1.65, redox:34.1
Stabilization Calculation - TGI	Continue purging, the parameters are not stable: pH is not stable ; conductivity is stable ; turbidity is not stable ; DO is stable ; temperature is stable ; ORP is not stable ; time elapsed is 10 minutes
Stabilization Calculation - site 775040	Continue purging, the parameters are not stable: pH is not stable ; conductivity is stable ; turbidity is not stable ; DO is stable ; temperature is stable ; ORP is not stable ; time elapsed is 10 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@10:04, DTW:15.52, pH5.79, temp:15.2, cond:0.219,turb:0.04, DO:1.66, redox:30.5

Site ID, Well ID	97502, MW-18
Reading Time	10:04
Minutes Elapsed between readings	5
Total Elapsed Minutes	15
Rate (mL/min)	200
Depth to Water (ft)	15.52
Total Volume Purged (mL)	3000
pH	5.79
pH 2 decimals	5.79
Conductivity (mS/cm)	0.219
cond sig figs	0.219

Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).

Turbidity (NTU)	0.04
turbidity sig figs	0.04
Dissolved Oxygen (mg/L)	1.66
DO 2 decimals	1.66
Temperature (Degrees Celcius)	15.2
temp 2 decimals	15.20
Redox (ORP mV)	30.5
Color	Clear
Notable Odors	None

parameters @10:04, DTW:15.52, pH5.79, temp:15.2, cond:0.219,turb:0.04, DO:1.66, redox:30.5

Stabilization Calculation - TGI Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is stable ; DO is stable ; temperature is stable ; ORP is not stable ; time elapsed is 15 minutes

Stabilization Calculation - site 775040 Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is not stable ; DO is stable ; temperature is stable ; ORP is not stable ; time elapsed is 15 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@10:09, DTW:15.51, pH5.82, temp:15.5, cond:0.22,turb:0.04, DO:1.6, redox:20.4

Site ID, Well ID	97502, MW-18
Reading Time	10:09
Minutes Elapsed between readings	5
Total Elapsed Minutes	20

Rate (mL/min)	200
Depth to Water (ft)	15.51
Total Volume Purged (mL)	4000
pH	5.82
pH 2 decimals	5.82
Conductivity (mS/cm)	0.22
cond sig figs	0.220
Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).	
Turbidity (NTU)	0.04
turbidity sig figs	0.04
Dissolved Oxygen (mg/L)	1.6
DO 2 decimals	1.60
Temperature (Degrees Celcius)	15.5
temp 2 decimals	15.50
Redox (ORP mV)	20.4
Color	Clear
Notable Odors	None
parameters	@10:09, DTW:15.51, pH5.82, temp:15.5, cond:0.22,turb:0.04, DO:1.6, redox:20.4
Stabilization Calculation - TGI	Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is stable ; DO is stable ; temperature is stable ; ORP is not stable ; time elapsed is 20 minutes
Stabilization Calculation - site 775040	Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is not stable ; DO is stable ; temperature is stable ; ORP is not stable ; time elapsed is 20 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@10:14, DTW:15.52, pH5.88, temp:15.2, cond:0.218,turb:0.03, DO:1.73, redox:12.2

Site ID, Well ID	97502, MW-18
Reading Time	10:14
Minutes Elapsed between readings	5
Total Elapsed Minutes	25
Rate (mL/min)	200
Depth to Water (ft)	15.52
Total Volume Purged (mL)	5000
pH	5.88
pH 2 decimals	5.88
Conductivity (mS/cm)	0.218
cond sig figs	0.218
Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).	
Turbidity (NTU)	0.03
turbidity sig figs	0.03
Dissolved Oxygen (mg/L)	1.73

DO 2 decimals	1.73
Temperature (Degrees Celcius)	15.2
temp 2 decimals	15.20
Redox (ORP mV)	12.2
Color	Clear
Notable Odors	None
parameters	@10:14, DTW:15.52, pH5.88, temp:15.2, cond:0.218,turb:0.03, DO:1.73, redox:12.2
Stabilization Calculation - TGI	Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is stable ; DO is stable ; temperature is stable ; ORP is not stable ; time elapsed is 25 minutes
Stabilization Calculation - site 775040	Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is stable ; DO is stable ; temperature is stable ; ORP is not stable ; time elapsed is 25 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@10:19, DTW:15.52, pH5.89, temp:15.1, cond:0.218,turb:0.02, DO:1.73, redox:10.4

Site ID, Well ID	97502, MW-18
Reading Time	10:19
Minutes Elapsed between readings	5
Total Elapsed Minutes	30
Rate (mL/min)	200
Depth to Water (ft)	15.52
Total Volume Purged (mL)	6009
pH	5.89
pH 2 decimals	5.89
Conductivity (mS/cm)	0.218
cond sig figs	0.218
Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).	
Turbidity (NTU)	0.02
turbidity sig figs	0.02
Dissolved Oxygen (mg/L)	1.73
DO 2 decimals	1.73
Temperature (Degrees Celcius)	15.1
temp 2 decimals	15.10
Redox (ORP mV)	10.4
Color	Clear
Notable Odors	None
parameters	@10:19, DTW:15.52, pH5.89, temp:15.1, cond:0.218,turb:0.02, DO:1.73, redox:10.4
Stabilization Calculation - TGI	You may sample the well.
Stabilization Calculation - site 775040	You may sample the well.

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

Sampling

Are you able to sample this location?	Yes
---------------------------------------	-----

Sample Information

Sample ID	MW-18-20210928
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Sample Time	10:21
-------------	-------

Sample Type	Grab
-------------	------

Sample Equipment	Peristaltic
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Field Filtered Sample?	No
------------------------	----

Sample Depth (ft-bmp) (e.g. pump intake)	18
--	----

Color	Clear
-------	-------

Notable Odors	None
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Analytes and Methods	See Chain-of-Custody.
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Well Inspection

Well inspection completed?	Yes
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Well Inspection Details

Is well easy to locate?	Yes
-------------------------	-----

Well Type	Flushmount
-----------	------------

Is well in an area prone to flooding?	No
---------------------------------------	----

Are well labels present on the outside of the well?	No
---	----

Are bolts missing?	No
--------------------	----

Are well labels present on the inside of the well?	Yes
--	-----

Lock present?	No
---------------	----

Well housing pad in good shape?	Yes
---------------------------------	-----

Close Out

General Comments	None
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Is this record complete?	Yes
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97502, MW-21, 2021-09-28, 10:35, GW Sampling

Created	2021-09-28 16:32:02 UTC by Joe Sepiol
Updated	2021-10-01 15:50:20 UTC by Joe Sepiol
Location	48.5056266887565, -122.238886272649
Status	■ QC Complete
Note: Before you begin, have you synced?	

Project Details

Chevron	Chevron
Site ID	97502, Retail Outlet 97502
Site ID	97502
Site Location City	Sedro Woolley
Site Location State	Washington
Site Location	Sedro Woolley, Washington
Project Number	30064310, Hamilton, Ada
Project Number	30064310
Date	2021-09-28
Sampling Event	Quarterly
Weather	Cloudy
Sampler Name	Joe Sepiol
Additional field staff?	No

Well (Location) Details

IMPORTANT! You must create a SEPARATE groundwater sampling record after creating a gauging record. Do not change your gauging record into a groundwater sampling record. If you have questions, ask your TM!

Well ID	MW-21
Well ID	MW-21
Turboscope Database ID	10761
Are you able to locate this well?	Yes
Work Performed at Location	GW Sampling

Well Information

Top of Screen (ft-bgs)	5.0
Bottom of Screen (ft-bgs)	20.0
Casing Diameter (in)	2
Well Casing Material	PVC
Measuring Point Description	Top of Casing

Gauging

Are you able to gauge this well?	Yes
----------------------------------	-----

Gauging Details

Type of Gauging Equipment	Interface Probe
Gauging Equipment ID	3000
Well Head PID Reading (ppm)	16.9
Gauging Time	09:34

Is Well Dry?	No
Is Product Present?	No
Was product removed?	No
Static Water Level (ft-bmp)	9.18
Static Water Level (Fixed)	9.18
DTW QC Check	QC Pass
Total Depth (ft-bmp)	19.49
Total Depth (Fixed)	19.49
TD QC Check	QC Pass
Water Column (ft)	10.31
Gallons in Well	1.68

Evacuation

Method details, purge/no-purge information, and field parameters.

Evacuation Details

Method Details

Purge Method	Low-Flow
Purge Equipment	Peristaltic
Water Quality Meter Make/Model (Select One or More)	YSI Pro Plus
Water Quality Meter ID(s)	4278
Decontamination Method	2 Stage Rinse

No-Purge: PDB/Hydrasleeve

Note: Selecting "Both" assumes details regarding the same Hydrasleeve/PDB

Deployment Details

PDB Details

A modified Trip Blank must be taken at time of deployment.

A modified Equipment Blank of fill water must be taken at time of deployment.

Purge Details

Purge Depth (ft-bmp) (e.g. Pump Intake)	15
Purge Start	09:50
Purge End (Before Sample Collection)	10:40
Purge Measurement Units	Milliliters
Total Milliliters Purged	7500
Well Volumes Purged (total)	1.18

Volumetric Details

Borehole Volume Multiplier: _____ CD | BD Multiplier 2" | 8" 0.8 2" | 10" 1.1 4" | 8" 1.1 4" | 10" 1.5 4" | 12" 2.0 6" | 10" 2.1 6" | 12" 2.6 _____ BD = Borehole Diameter CD = Casing Diameter " = inches

One Borehole Volume (gallons)	0
Specified Volumes	1.5

Calculated Volume (gallons) 0

Enter purging and final field parameters in the Field Parameters section below.

@09:50, DTW:9.19, pH5.88, temp:16.1, cond:0.299,turb:7.85, DO:0.92, redox:38.1

Site ID, Well ID	97502, MW-21
Reading Time	09:50
Total Elapsed Minutes	0
Rate (mL/min)	150
Depth to Water (ft)	9.19
Total Volume Purged (mL)	0
pH	5.88
pH 2 decimals	5.88
Conductivity (mS/cm)	0.299
cond sig figs	0.299

Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).

Turbidity (NTU)	7.85
turbidity sig figs	7.8
Dissolved Oxygen (mg/L)	0.92
DO 2 decimals	0.92
Temperature (Degrees Celcius)	16.1
temp 2 decimals	16.10
Redox (ORP mV)	38.1
Color	Clear
Notable Odors	None

parameters @09:50, DTW:9.19, pH5.88, temp:16.1, cond:0.299,turb:7.85, DO:0.92, redox:38.1

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@09:55, DTW:9.19, pH6.18, temp:16, cond:0.299,turb:4.86, DO:0.43, redox:5

Site ID, Well ID	97502, MW-21
Reading Time	09:55
Minutes Elapsed between readings	5
Total Elapsed Minutes	5
Rate (mL/min)	150
Depth to Water (ft)	9.19
Total Volume Purged (mL)	750
pH	6.18
pH 2 decimals	6.18
Conductivity (mS/cm)	0.299
cond sig figs	0.299

Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).

Turbidity (NTU)	4.86
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turbidity sig figs	4.9
Dissolved Oxygen (mg/L)	0.43
DO 2 decimals	0.43
Temperature (Degrees Celcius)	16
temp 2 decimals	16.00
Redox (ORP mV)	5
Color	Clear
Notable Odors	None
parameters	@09:55, DTW:9.19, pH6.18, temp:16, cond:0.299,turb:4.86, DO:0.43, redox:5
Stabilization Calculation - TGI	Continue purging, the parameters are not stable: pH is not stable ; conductivity is not stable ; turbidity is not stable ; DO is not stable ; temperature is not stable ; ORP is not stable ; time elapsed is 5 minutes
Stabilization Calculation - site 775040	Continue purging, the parameters are not stable: pH is not stable ; conductivity is not stable ; turbidity is not stable ; DO is not stable ; temperature is not stable ; ORP is not stable ; time elapsed is 5 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@10:00, DTW:9.19, pH6.28, temp:16.3, cond:0.295,turb:12.3, DO:0.3, redox:-1.1

Site ID, Well ID	97502, MW-21
Reading Time	10:00
Minutes Elapsed between readings	5
Total Elapsed Minutes	10
Rate (mL/min)	150
Depth to Water (ft)	9.19
Total Volume Purged (mL)	1500
pH	6.28
pH 2 decimals	6.28
Conductivity (mS/cm)	0.295
cond sig figs	0.295
Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).	
Turbidity (NTU)	12.3
turbidity sig figs	12.3
Dissolved Oxygen (mg/L)	0.3
DO 2 decimals	0.30
Temperature (Degrees Celcius)	16.3
temp 2 decimals	16.30
Redox (ORP mV)	-1.1
Color	Clear
Notable Odors	None
parameters	@10:00, DTW:9.19, pH6.28, temp:16.3, cond:0.295,turb:12.3, DO:0.3, redox:-1.1

Stabilization Calculation - TGI

Continue purging, the parameters are not stable: pH is not stable ; conductivity is stable ; turbidity is not stable ; DO is not stable ; temperature is stable ; ORP is not stable ; time elapsed is 10 minutes

Stabilization Calculation - site 775040

Continue purging, the parameters are not stable: pH is not stable ; conductivity is stable ; turbidity is not stable ; DO is not stable ; temperature is stable ; ORP is not stable ; time elapsed is 10 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@10:05, DTW:9.19, pH6.33, temp:16.6, cond:0.29,turb:19, DO:0.32, redox:-4.2

Site ID, Well ID	97502, MW-21
Reading Time	10:05
Minutes Elapsed between readings	5
Total Elapsed Minutes	15
Rate (mL/min)	150
Depth to Water (ft)	9.19
Total Volume Purged (mL)	2250
pH	6.33
pH 2 decimals	6.33
Conductivity (mS/cm)	0.29
cond sig figs	0.290
Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).	
Turbidity (NTU)	19
turbidity sig figs	19.0
Dissolved Oxygen (mg/L)	0.32
DO 2 decimals	0.32
Temperature (Degrees Celcius)	16.6
temp 2 decimals	16.60
Redox (ORP mV)	-4.2
Color	Clear
Notable Odors	None
parameters	@10:05, DTW:9.19, pH6.33, temp:16.6, cond:0.29,turb:19, DO:0.32, redox:-4.2

Stabilization Calculation - TGI

Continue purging, the parameters are not stable: pH is not stable ; conductivity is not stable ; turbidity is not stable ; DO is stable ; temperature is not stable ; ORP is stable ; time elapsed is 15 minutes

Stabilization Calculation - site 775040

Continue purging, the parameters are not stable: pH is not stable ; conductivity is not stable ; turbidity is not stable ; DO is not stable ; temperature is not stable ; ORP is stable ; time elapsed is 15 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@10:10, DTW:9.19, pH6.36, temp:16.7, cond:0.29,turb:15.9, DO:0.28, redox:-7

Site ID, Well ID	97502, MW-21
Reading Time	10:10
Minutes Elapsed between readings	5
Total Elapsed Minutes	20
Rate (mL/min)	150
Depth to Water (ft)	9.19
Total Volume Purged (mL)	3000
pH	6.36
pH 2 decimals	6.36
Conductivity (mS/cm)	0.29
cond sig figs	0.290
Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).	
Turbidity (NTU)	15.9
turbidity sig figs	15.9
Dissolved Oxygen (mg/L)	0.28
DO 2 decimals	0.28
Temperature (Degrees Celcius)	16.7
temp 2 decimals	16.70
Redox (ORP mV)	-7
Color	Clear
Notable Odors	None
parameters	@10:10, DTW:9.19, pH6.36, temp:16.7, cond:0.29,turb:15.9, DO:0.28, redox:-7
Stabilization Calculation - TGI	Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is not stable ; DO is stable ; temperature is stable ; ORP is stable ; time elapsed is 20 minutes
Stabilization Calculation - site 775040	Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is not stable ; DO is not stable ; temperature is stable ; ORP is stable ; time elapsed is 20 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@10:15, DTW:9.19, pH6.36, temp:17, cond:0.293,turb:4.03, DO:0.33, redox:-3.3

Site ID, Well ID	97502, MW-21
Reading Time	10:15
Minutes Elapsed between readings	5
Total Elapsed Minutes	25
Rate (mL/min)	150
Depth to Water (ft)	9.19
Total Volume Purged (mL)	3750
pH	6.36
pH 2 decimals	6.36
Conductivity (mS/cm)	0.293

cond sig figs	0.293
Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).	
Turbidity (NTU)	4.03
turbidity sig figs	4.0
Dissolved Oxygen (mg/L)	0.33
DO 2 decimals	0.33
Temperature (Degrees Celcius)	17
temp 2 decimals	17.00
Redox (ORP mV)	-3.3
Color	Clear
Notable Odors	None
parameters	@10:15, DTW:9.19, pH6.36, temp:17, cond:0.293,turb:4.03, DO:0.33, redox:-3.3
Stabilization Calculation - TGI	Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is not stable ; DO is stable ; temperature is stable ; ORP is stable ; time elapsed is 25 minutes
Stabilization Calculation - site 775040	Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is not stable ; DO is not stable ; temperature is stable ; ORP is stable ; time elapsed is 25 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@10:20, DTW:9.19, pH6.36, temp:17, cond:0.294,turb:0.02, DO:0.28, redox:-3.4

Site ID, Well ID	97502, MW-21
Reading Time	10:20
Minutes Elapsed between readings	5
Total Elapsed Minutes	30
Rate (mL/min)	150
Depth to Water (ft)	9.19
Total Volume Purged (mL)	4500
pH	6.36
pH 2 decimals	6.36
Conductivity (mS/cm)	0.294
cond sig figs	0.294
Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).	
Turbidity (NTU)	0.02
turbidity sig figs	0.02
Dissolved Oxygen (mg/L)	0.28
DO 2 decimals	0.28
Temperature (Degrees Celcius)	17
temp 2 decimals	17.00
Redox (ORP mV)	-3.4
Color	Clear
Notable Odors	None

parameters	@10:20, DTW:9.19, pH6.36, temp:17, cond:0.294,turb:0.02, DO:0.28, redox:-3.4
Stabilization Calculation - TGI	Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is not stable ; DO is stable ; temperature is stable ; ORP is stable ; time elapsed is 30 minutes
Stabilization Calculation - site 775040	Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is not stable ; DO is not stable ; temperature is stable ; ORP is stable ; time elapsed is 30 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

@10:25, DTW:9.19, pH6.35, temp:17.2, cond:0.295,turb:0.02, DO:0.27, redox:-1.5

Site ID, Well ID	97502, MW-21
Reading Time	10:25
Minutes Elapsed between readings	5
Total Elapsed Minutes	35
Rate (mL/min)	150
Depth to Water (ft)	9.19
Total Volume Purged (mL)	5250
pH	6.35
pH 2 decimals	6.35
Conductivity (mS/cm)	0.295
cond sig figs	0.295

Check your Units! Verify your water quality meter is set to read conductivity in mS/cm (not uS/cm).

Turbidity (NTU)	0.02
turbidity sig figs	0.02
Dissolved Oxygen (mg/L)	0.27
DO 2 decimals	0.27
Temperature (Degrees Celcius)	17.2
temp 2 decimals	17.20
Redox (ORP mV)	-1.5
Color	Clear
Notable Odors	None

parameters	@10:25, DTW:9.19, pH6.35, temp:17.2, cond:0.295,turb:0.02, DO:0.27, redox:-1.5
Stabilization Calculation - TGI	You may sample the well.
Stabilization Calculation - site 775040	Continue purging, the parameters are not stable: pH is stable ; conductivity is stable ; turbidity is not stable ; DO is not stable ; temperature is stable ; ORP is stable ; time elapsed is 35 minutes

Well is considered stabilized and ready for sample collection when the following is met for three consecutive readings collected at 3 to 5 minute intervals: -Turbidity remains within 10% (or if three values are <5 NTUs) -Specific conductance and temp remain within 3% -ORP within + or - 10 mV -DO within 10% (or if three DO values are <0.5 mg/L) -pH within 0.1 unit From TGI updated on May 8, 2020

At site 775040: Collect parameter readings every 2-5 minutes. Purge at 200 to 500 mL/min. Well is considered stable when three consecutive readings are within: 0.1 pH units 3% specific conductivity 3% temperature +/- 10 mV ORP 10% dissolved oxygen <5 NTU and does not vary by more than 1.0 NTU

Sampling

Are you able to sample this location? Yes

Sample Information

Sample ID MW-21-20210928
Sample Time 10:35
Sample Type Grab
Sample Equipment Peristaltic
Field Filtered Sample? No
Sample Depth (ft-bmp) (e.g. pump intake) 15
Color Clear
Notable Odors None
Analytes and Methods See Chain-of-Custody.

Well Inspection

Well inspection completed? Yes

Well Inspection Details

Is well easy to locate? Yes
Well Type Flushmount
Is well in an area prone to flooding? No
Are well labels present on the outside of the well? No
Are bolts missing? No
Are well labels present on the inside of the well? No
Lock present? No
Well housing pad in good shape? Yes

Photo of Secured Well



Close Out

General Comments None

Photos



Is this record complete?

Yes



Groundwater Gauging Log

Project Number		30064310						
Client:		Chevron						
Site ID:		97502						
Site Location:		Sedro Woolley, Washington						
Measuring Point:		Top of Casing						
Date(s):		12/14/2021						
Sampler(s):		Shad Brooks						
Gauging Equipment:		Interface Probe						
Well ID	Date	Gauging Time	Static Water Level (ft bmp)	Depth to Product (ft bmp)	Total Depth (ft bmp)	PID Reading (ppm)	LNAPL Removed (gal)	Comments
MW-4	12/14/2021	11:06	7.39	ND	15.72	0	--	--
MW-5	12/14/2021	09:44	7.52	ND	15.95	0	--	--
MW-6	12/14/2021	11:14	7.69	ND	19.83	0	--	--
MW-7	12/14/2021	10:03	10.07	ND	21.43	1.2	--	--
MW-8	12/14/2021	09:55	7.83	ND	17.09	0.4	--	--
MW-10	12/14/2021	10:34	8.02	ND	18.75	0	--	Slight odor, no visible sheen
MW-11	12/14/2021	10:47	8.15	ND	19.01	0	--	--
MW-12	12/14/2021	09:09	7.83	ND	18.60	0	--	--
MW-13	12/14/2021	09:24	7.89	ND	19.05	0	--	Slight odor on probe
MW-14	12/14/2021	10:40	8.36	ND	12.44	0	--	--
MW-15	12/14/2021	08:46	7.55	ND	19.55	18.9	--	Odor present on probe
MW-16	12/14/2021	08:37	7.38	ND	19.74	3.5	--	--
MW-17	12/14/2021	09:18	7.99	ND	19.69	0	--	--
MW-18	12/14/2021	09:31	8.18	ND	19.71	0	--	--
MW-19	12/14/2021	10:55	8.68	ND	19.72	0	--	--
MW-20	12/14/2021	11:00	9.75	ND	19.84	0.3	--	--
MW-21	12/14/2021	08:57	6.72	ND	19.50	2	--	--

ft-bmp = feet below measuring point

ND = Not Detected

PID = Photoionization Detector Reading



ppm = parts per million

-- = Not Recorded

Well Inspection Log



Client:	Chevron											
Site ID:	97502											
Site Location:	Sedro Woolley, Washington											
Date(s):	12/14/2021											
Inspector(s):	Shad Brooks											
Well ID	Date	Easy to Locate?	Area Prone to Flooding ?	Well Type	Well Housing/ Pad in Good Condition ?	Well Labels Present Outside Well?	Well Labels Present Inside Well?	Lock Present ?	Lock Functioning ?	Well Locked at Arrival?	Photos Taken?	Comments
MW-4	12/14/2021	yes	no	flushm out	yes	no	yes	no	--	--	No	--
MW-5	12/14/2021	yes	no	flushm out	yes	no	no	no	--	--	No	--
MW-6	12/14/2021	yes	no	flushm out	yes	no	yes	no	--	--	No	--
MW-7	12/14/2021	yes	no	flushm out	yes	no	no	no	--	--	No	--
MW-8	12/14/2021	yes	no	flushm out	yes	no	no	no	--	--	No	--
MW-10	12/14/2021	yes	no	flushm out	yes	no	no	no	--	--	No	--
MW-11	12/14/2021	yes	no	flushm out	yes	no	no	no	--	--	No	--
MW-12	12/14/2021	yes	no	flushm out	yes	no	no	no	--	--	No	--
MW-13	12/14/2021	yes	no	flushm out	yes	no	no	no	--	--	No	--
MW-14	12/14/2021	yes	no	flushm out	yes	no	no	no	--	--	No	--
MW-15	12/14/2021	yes	no	flushm out	yes	no	no	no	--	--	Yes	--
MW-16	12/14/2021	yes	no	flushm out	yes	no	no	no	--	--	Yes	--
MW-17	12/14/2021	yes	no	flushm out	yes	no	no	no	--	--	No	--
MW-18	12/14/2021	yes	no	flushm out	yes	no	no	no	--	--	No	--
MW-19	12/14/2021	yes	no	flushm out	yes	no	yes	no	--	--	No	--
MW-20	12/14/2021	yes	no	flushm out	yes	no	yes	no	--	--	No	--
MW-21	12/14/2021	yes	no	flushm out	yes	no	no	no	--	--	No	--

Well ID	Date	Photo	Description
MW-15	12/14/2021		--
MW-16	12/14/2021		--

Groundwater Sampling Form



Project Number	30064310	Well ID	MW-4	Date	12/14/2021
Project Name/Location	COP5_West_97502_WA_Sedro Woolley		Weather(°F)	41.0 degrees F and Cloudy. The wind is blowing at 6.9 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation		Casing Diameter (in)	4
				Well Casing Material	PVC
Static Water Level (ft-bmp)	7.46	Total Depth (ft-bmp)	30	Water Column (ft)	22.54
				Gallons in Well	14.65
Purge Start	13:52	Pump Intake (ft-bmp)	20	Purge Method	Low-Flow
				Purge Equipment	Peristaltic
Purge End	14:50	Volumes Purged	0.18	Sample ID	MW-4-W-20211214
				Sampled by	Joe Sepiol
Sample Time	14:40	Gallons Purged	2.64	Replicate/ Code No.	NA
				Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
13:54	0	0	200	7.46	0.11	6.32	0.25	0	5.4	14.4	43.5	--	--
13:59	5	5	200	7.63	0.37	6.43	0.257	0	5.79	14.5	69.1	--	--
14:04	5	10	200	7.63	0.63	6.39	0.257	0	5.46	14.6	94.3	--	--
14:09	5	15	200	7.82	0.90	6.37	0.257	0	5.36	14.6	86.1	--	--
14:14	5	20	200	7.82	1.16	6.37	0.259	0	5.17	14.6	24.1	--	--
14:19	5	25	200	7.90	1.43	6.36	0.265	0	4.92	14.6	-50.9	--	--
14:24	5	30	200	7.91	1.69	6.38	0.272	0	4.59	14.7	-72	--	--
14:29	5	35	200	7.91	1.96	6.37	0.278	0	4.47	14.7	-78.5	--	--
14:34	5	40	200	7.91	2.22	6.37	0.282	0	4.34	14.7	-81.3	--	--
14:39	5	45	200	7.91	2.48	6.37	0.283	0	4.17	14.6	-82.6	Clear	Mild

Constituent Sampled	Container	Number	Preservative

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04; 1.5 = 0.09; 2.5 = 0.26; 3.5 = 0.50; 6 = 1.47
 1.25 = 0.06; 2 = 0.16; 3 = 0.37; 4 = 0.65

Well Information

Well Location: _____	Well Locked at Arrival: <input type="checkbox"/> yes
Condition of Well: _____	Well Locked at Departure: <input type="checkbox"/> yes
Well Completion: NA	Key Number To Well: NA

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30064310	Well ID	MW-5	Date	12/16/2021
Project Name/Location	COP5_West_97502_WA_Sedro Woolley		Weather(°F)		
Measuring Pt. Description	Top of Inner Casing	MP Elevation	Casing Diameter (in)	Well Casing Material	NA
Static Water Level (ft-bmp)	7.55	Total Depth (ft-bmp)	16.36	Water Column (ft)	8.81
Purge Start	08:24	Pump Intake (ft-bmp)		Purge Method	Low-Flow
Purge End		Volumes Purged		Sample ID	MW-5-W-20211216
Sample Time	09:15	Gallons Purged		Replicate/Code No.	NA
				Sampled by	Shad Brooks
				Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
08:25	0	0	150	7.55	--	7.53	0.4	72.5	7.93	11.6	85.6	--	--
08:30	5	5	150	7.55	--	6.85	0.399	23.92	7.16	12.3	119.9	--	--
08:35	5	10	150	7.55	--	6.83	0.398	20.39	7.11	12.3	125.8	--	--
08:40	5	15	150	7.55	--	6.82	0.399	19.82	7.09	12.5	132.2	--	--
08:45	5	20	150	7.89	--	6.81	0.399	14.8	7.02	12.6	138.6	--	--
08:50	5	25	150	7.89	--	6.81	0.399	15.61	7.01	12.5	143.8	--	--
08:55	5	30	150	7.89	--	6.81	0.399	12.02	6.97	12.7	147.7	--	--
09:00	5	35	150	8.06	--	6.81	0.4	14	6.91	12.5	151.7	--	--
09:05	5	40	150	8.06	--	6.81	0.399	13.2	6.92	12.5	153.9	--	--
09:10	5	45	150	8.06	--	6.8	0.4	12.25	6.77	12.3	156.1	--	--
09:52	42	87	150	8.06	--							Clear	None

Constituent Sampled	Container	Number	Preservative

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04; 1.5 = 0.09; 2.5 = 0.26; 3.5 = 0.50; 6 = 1.47
 1.25 = 0.06; 2 = 0.16; 3 = 0.37; 4 = 0.65

Well Information

Well Location: _____	Well Locked at Arrival: _____
Condition of Well: _____	Well Locked at Departure: _____
Well Completion: NA	Key Number To Well: NA

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30064310	Well ID	MW-6	Date	12/14/2021
Project Name/Location	COP5_West_97502_WA_Sedro Woolley		Weather(°F)	41.0 degrees F and Cloudy. The wind is blowing SE at 6.9 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	Casing Diameter (in)	Well Casing Material	PVC
Static Water Level (ft-bmp)	7.76	Total Depth (ft-bmp)	18.85	Water Column (ft)	11.09
Purge Start	13:30	Pump Intake (ft-bmp)		Purge Method	Low-Flow
Purge End		Volumes Purged		Sample ID	MW-6-W-20211214
Sample Time	14:15	Gallons Purged		Replicate/ Code No.	NA
				Sampled by	Shad Brooks
				Purge Equipment	Peristaltic
				Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
13:43	0	0	150	7.76	--	6.12	0.092	0	0.82	12.5	48.2	--	--
13:55	12	12	150	8.11	--	6.13	0.092	0	0.94	11.3	55.3	--	--
14:00	5	17	150	8.11	--	5.94	0.09	0	0.94	11.3	71.2	--	--
14:05	5	22	150	8.11	0.87	5.88	0.09	0	0.89	11.2	76.9	--	--
14:10	5	27	150	8.11	--	5.9	0.091	0	0.88	11.1	77.8	Orange	None

Constituent Sampled	Container	Number	Preservative

Comments: Large orange colored material coming from well. Waited for the majority to clear before starting purge.

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04; 1.5 = 0.09; 2.5 = 0.26; 3.5 = 0.50; 6 = 1.47
 1.25 = 0.06; 2 = 0.16; 3 = 0.37; 4 = 0.65

Well Information

Well Location: _____	Well Locked at Arrival: _____
Condition of Well: _____	Well Locked at Departure: _____
Well Completion: NA _____	Key Number To Well: NA _____

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30064310	Well ID	MW-7	Date	12/15/2021
Project Name/Location	COP5_West_97502_WA_Sedro Woolley		Weather(°F)	44.6 degrees F and Mostly Clear.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation		Casing Diameter (in)	2
				Well Casing Material	PVC
Static Water Level (ft-bmp)	10.04	Total Depth (ft-bmp)	25	Water Column (ft)	14.96
				Gallons in Well	2.43
Purge Start	14:10	Pump Intake (ft-bmp)	18	Purge Method	Low-Flow
				Purge Equipment	Peristaltic
Purge End		Volumes Purged	0.87	Sample ID	MW-7-W-20211215
				Sampled by	Joe Sepiol
Sample Time	14:45	Gallons Purged	2.11	Replicate/ Code No.	NA
				Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
14:12	0	0	200	10.04	0.11	7.07	0.686	12.13	8.19	12.5	-78.3	--	--
14:17	5	5	200	10.04	0.37	7.02	0.709	4.31	7.15	13	-75.7	--	--
14:22	5	10	200	10.05	0.63	7.03	0.712	4.23	6.99	13.1	-75.9	--	--
14:27	5	15	200	10.05	0.90	7.04	0.718	8.6	6.94	13.1	-76.1	--	--
14:32	5	20	200	10.05	1.16	7.04	0.717	2.85	6.95	13.1	-75.6	--	--
14:37	5	25	200	10.05	1.43	7.04	0.716	2.53	6.96	13.1	-74.8	--	--
14:42	5	30	200	10.05	1.69	7.04	0.717	2.39	6.93	13.1	-74.7	Clear	None

Constituent Sampled	Container	Number	Preservative

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04; 1.5 = 0.09; 2.5 = 0.26; 3.5 = 0.50; 6 = 1.47
 1.25 = 0.06; 2 = 0.16; 3 = 0.37; 4 = 0.65

Well Information

Well Location: _____	Well Locked at Arrival: <input type="checkbox"/> yes
Condition of Well: _____	Well Locked at Departure: <input type="checkbox"/> yes
Well Completion: NA _____	Key Number To Well: NA _____

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30064310	Well ID	MW-8	Date	12/15/2021		
Project Name/Location	COP5_West_97502_WA_Sedro Woolley		Weather(°F)	42.8 degrees F and Clear. The wind is blowing undefined at 0.0 mph.			
Measuring Pt. Description	Top of Inner Casing	MP Elevation	Casing Diameter (in)	2	Well Casing Material	PVC	
Static Water Level (ft-bmp)	7.79	Total Depth (ft-bmp)	17.07	Water Column (ft)	9.28	Gallons in Well	1.51
Purge Start		Pump Intake (ft-bmp)		Purge Method	Low-Flow	Purge Equipment	Peristaltic
Purge End		Volumes Purged		Sample ID	MW-8-W-20211215	Sampled by	Shad Brooks
Sample Time	15:35	Gallons Purged		Replicate/Code No.	NA	Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
14:45	0	0	150	7.90	--	6.59	0.448	21.87	0.84	11.2	-56.9	--	--
14:50	5	5	150	7.90	--	6.59	0.443	20.11	0.76	11.2	-57.7	--	--
14:55	5	10	150	7.90	--	6.61	0.436	19.24	0.66	11.4	-61	--	--
15:00	5	15	150	7.91	--	6.62	0.428	15.19	0.49	12.2	-69.9	--	--
15:05	5	20	150	7.92	--	6.64	0.423	13.37	0.46	12	-74.6	--	--
15:10	5	25	150	7.92	--	6.64	0.421	12.14	0.44	12	-77.4	--	--
15:15	5	30	150	7.92	--	6.65	0.419	10.9	0.4	11.9	-82.9	--	--
15:20	5	35	150	7.92	--	6.65	0.417	9.58	0.39	11.9	-86	--	--
15:25	5	40	150	7.92	--	6.67	0.413	8.57	0.38	12	-89.8	--	--
15:30	5	45	150	7.92	--	6.68	0.413	7.85	0.38	12.1	-92.9	Black	Medium

Constituent Sampled	Container	Number	Preservative

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04; 1.5 = 0.09; 2.5 = 0.26; 3.5 = 0.50; 6 = 1.47
 1.25 = 0.06; 2 = 0.16; 3 = 0.37; 4 = 0.65

Well Information

Well Location: _____	Well Locked at Arrival: _____
Condition of Well: _____	Well Locked at Departure: _____
Well Completion: NA	Key Number To Well: NA

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30064310	Well ID	MW-10	Date	12/15/2021
Project Name/Location	COP5_West_97502_WA_Sedro Woolley		Weather(°F)	39.2 degrees F and Clear.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation		Casing Diameter (in)	2
				Well Casing Material	Stainless Steel
Static Water Level (ft-bmp)	7.97	Total Depth (ft-bmp)	30	Water Column (ft)	22.03
				Gallons in Well	3.58
Purge Start	11:05	Pump Intake (ft-bmp)	20	Purge Method	Low-Flow
				Purge Equipment	Peristaltic
Purge End		Volumes Purged	0.77	Sample ID	MW-10-W20211215
				Sampled by	Joe Sepiol
Sample Time	11:55	Gallons Purged	2.77	Replicate/ Code No.	NA
				Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
11:08	0	0	200	8.04	0.16	6.67	0.457	23.9	2.07	11.4	-95.3	--	--
11:13	5	5	200	8.03	0.42	6.59	0.47	7.32	0.73	12.3	138.8	--	--
11:18	5	10	200	8.03	0.69	6.58	0.472	16.55	0.58	12.6	-150.8	--	--
11:23	5	15	200	8.03	0.95	6.59	0.473	16.39	0.55	12.3	-154.3	--	--
11:28	5	20	200	8.03	1.22	6.6	0.475	10.7	0.7	12.3	-143.1	--	--
11:33	5	25	200	8.03	1.48	6.61	0.479	8.9	0.92	12.3	-131.9	--	--
11:38	5	30	200	8.04	1.74	6.59	0.483	5.23	1.76	12.1	-113.8	--	--
11:43	5	35	200	8.04	2.01	6.57	0.484	4.08	2.24	12	-112.6	--	--
11:48	5	40	200	8.04	2.27	6.56	0.484	4.04	2.3	12.1	-113.1	--	--
11:55	7	47	200	8.04	2.48	6.56	0.484	3.66	2.34	12.1	-113.4	Yellow	Medium

Constituent Sampled	Container	Number	Preservative

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04; 1.5 = 0.09; 2.5 = 0.26; 3.5 = 0.50; 6 = 1.47
 1.25 = 0.06; 2 = 0.16; 3 = 0.37; 4 = 0.65

Well Information

Well Location: _____	Well Locked at Arrival: <input type="checkbox"/> yes
Condition of Well: _____	Well Locked at Departure: <input type="checkbox"/> yes
Well Completion: NA	Key Number To Well: NA

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30064310	Well ID	MW-11	Date	12/15/2021
Project Name/Location	COP5_West_97502_WA_Sedro Woolley		Weather(°F)		
Measuring Pt. Description	Top of Inner Casing	MP Elevation	Casing Diameter (in)	Well Casing Material	NA
Static Water Level (ft-bmp)	8.09	Total Depth (ft-bmp)	19.03	Water Column (ft)	10.94
Purge Start	10:25	Pump Intake (ft-bmp)	Purge Method	Low-Flow	Purge Equipment
Purge End	Volumes Purged		Sample ID	MW-11-W-20211215	Sampled by
Sample Time	11:30	Gallons Purged	Replicate/Code No.	MS-1-121521	Sample Type
					Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
10:35	0	0	150	8.09	--	6.07	0.564	33.85	1.56	10.6	90.8	--	--
10:40	5	5	150	8.15	--	6.1	0.573	27.39	1.33	10	88.8	--	--
10:45	5	10	150	8.17	--	6.12	0.566	26.45	1.23	10.5	80.4	--	--
10:50	5	15	150	8.18	--	6.13	0.579	17.63	1.1	11	71.8	--	--
10:55	5	20	150	8.18	--	6.16	0.582	13.7	1.07	11.2	52.9	--	--
11:00	5	25	150	8.18	--	6.17	0.58	10.06	1.12	11.1	47.6	--	--
11:05	5	30	150	8.18	--	6.18	0.578	7.42	1.09	11.1	43.7	--	--
11:11	6	36	150	8.18	--	6.19	0.58	6.2	1.21	10.4	39.2	--	--
11:15	4	40	150	8.18	--	6.19	0.58	5.82	1.22	10.2	39.2	--	--
11:20	5	45	150	8.18	--	6.19	0.575	6.12	1.24	10.3	40.3	--	--
11:25	5	50	150	8.18	--	6.19	0.573	6.46	1.33	10.5	41	Clear	None

Constituent Sampled	Container	Number	Preservative

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04; 1.5 = 0.09; 2.5 = 0.26; 3.5 = 0.50; 6 = 1.47
 1.25 = 0.06; 2 = 0.16; 3 = 0.37; 4 = 0.65

Well Information

Well Location: _____	Well Locked at Arrival: _____
Condition of Well: _____	Well Locked at Departure: _____
Well Completion: NA	Key Number To Well: NA

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30064310	Well ID	MW-12	Date	12/16/2021
Project Name/Location	COP5_West_97502_WA_Sedro Woolley		Weather(°F)		
Measuring Pt. Description	Top of Inner Casing	MP Elevation		Casing Diameter (in)	4
				Well Casing Material	PVC
Static Water Level (ft-bmp)	7.85	Total Depth (ft-bmp)	25	Water Column (ft)	17.15
				Gallons in Well	11.15
Purge Start	09:42	Pump Intake (ft-bmp)	20	Purge Method	Low-Flow
				Purge Equipment	Peristaltic
Purge End	10:32	Volumes Purged	0.20	Sample ID	MW-12-W-20211216
				Sampled by	Joe Sepiol
Sample Time	10:28	Gallons Purged	2.25	Replicate/Code No.	NA
				Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
09:45	0	0	200	7.92	0.16	6.81	0.468	60.29	7.51	9.6	-52	--	--
09:50	5	5	200	7.92	0.42	6.66	0.479	31.37	6.12	10.6	-49.1	--	--
09:55	5	10	200	8.00	0.69	6.65	0.483	25.82	6.03	10.7	-62.3	--	--
10:00	5	15	200	8.02	0.95	6.64	0.482	27.06	6.04	11.1	-65.9	--	--
10:05	5	20	200	8.02	1.22	6.64	0.483	29.13	6.01	11.5	-74.6	--	--
10:10	5	25	200	8.04	1.48	6.64	0.484	22.8	5.99	10.9	-79.4	--	--
10:15	5	30	200	8.04	1.74	6.64	0.482	22.05	5.98	10.9	-82.6	--	--
10:20	5	35	200	8.05	2.01	6.64	0.483	20.75	6	10.8	-84.8	Clear	None

Constituent Sampled	Container	Number	Preservative

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04; 1.5 = 0.09; 2.5 = 0.26; 3.5 = 0.50; 6 = 1.47
 1.25 = 0.06; 2 = 0.16; 3 = 0.37; 4 = 0.65

Well Information

Well Location: _____	Well Locked at Arrival: <input type="checkbox"/> yes
Condition of Well: _____	Well Locked at Departure: <input type="checkbox"/> yes
Well Completion: NA	Key Number To Well: NA

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30064310	Well ID	MW-13	Date	12/15/2021
Project Name/Location	COP5_West_97502_WA_Sedro Woolley		Weather(°F)	42.8 degrees F and Clear. The wind is blowing undefined at 0.0 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	Casing Diameter (in)	Well Casing Material	NA
Static Water Level (ft-bmp)	7.86	Total Depth (ft-bmp)	19.01	Water Column (ft)	11.15
Purge Start		Pump Intake (ft-bmp)		Purge Method	Low-Flow
				Purge Equipment	Peristaltic
Purge End		Volumes Purged		Sample ID	MW-13-W-20211215
				Sampled by	Shad Brooks
Sample Time	14:00	Gallons Purged		Replicate/Code No.	DUP-1-121521
				Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
13:25	0	0	150	8.05	--	6.77	0.546	9.75	8.97	12.2	109.8	--	--
13:30	5	5	150	8.05	--	6.76	0.549	7.19	8.88	12.3	119.1	--	--
13:35	5	10	150	8.13	--	6.75	0.544	5.78	8.89	12.3	127.1	--	--
13:40	5	15	150	8.13	--	6.76	0.544	4.86	8.92	12.3	131.8	--	--
13:45	5	20	150	8.13	--	6.76	0.544	5.02	8.88	12.4	134.7	Clear	None

Constituent Sampled	Container	Number	Preservative

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04; 1.5 = 0.09; 2.5 = 0.26; 3.5 = 0.50; 6 = 1.47
 1.25 = 0.06; 2 = 0.16; 3 = 0.37; 4 = 0.65

Well Information

Well Location: _____	Well Locked at Arrival: _____
Condition of Well: _____	Well Locked at Departure: _____
Well Completion: NA _____	Key Number To Well: NA _____

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30064310	Well ID	MW-14	Date	12/16/2021		
Project Name/Location	COP5_West_97502_WA_Sedro Woolley	Weather(°F)	Rain. 40 F				
Measuring Pt. Description	Top of Inner Casing	MP Elevation	Casing Diameter (in)	4	Well Casing Material	PVC	
Static Water Level (ft-bmp)	8.34	Total Depth (ft-bmp)	25	Water Column (ft)	16.66	Gallons in Well	10.83
Purge Start	08:23	Pump Intake (ft-bmp)	18	Purge Method	Low-Flow	Purge Equipment	Peristaltic
Purge End	09:28	Volumes Purged	0.29	Sample ID	MW-14-W-20211216	Sampled by	Joe Sepiol
Sample Time	09:25	Gallons Purged	3.17	Replicate/Code No.	NA	Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
08:26	0	0	200	8.36	0.16	6.71	0.485	9.3	1.92	12.4	-144.2	--	--
08:31	5	5	200	8.42	0.42	6.63	0.493	7.6	0.68	12.6	-175.3	--	--
08:36	5	10	200	8.43	0.69	6.63	0.491	8.44	0.47	13	-191	--	--
08:41	5	15	200	8.43	0.95	6.62	0.491	9.42	0.43	13	-195.8	--	--
08:46	5	20	200	8.44	1.22	6.61	0.49	9.02	0.42	13.1	-196.4	--	--
08:51	5	25	200	8.44	1.48	6.59	0.491	7.77	0.48	13.2	-190.4	--	--
08:56	5	30	200	8.45	1.74	6.59	0.492	7.08	0.49	12.9	-191.4	--	--
09:01	5	35	200	8.45	2.01	6.6	0.491	6.7	0.46	13.1	-194	--	--
09:06	5	40	200	8.45	2.27	6.6	0.492	6.16	0.51	13.1	-190.5	--	--
09:11	5	45	200	8.45	2.54	6.59	0.492	5.6	0.53	13.1	-185.4	Yellow	Strong

Constituent Sampled	Container	Number	Preservative

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04; 1.5 = 0.09; 2.5 = 0.26; 3.5 = 0.50; 6 = 1.47
 1.25 = 0.06; 2 = 0.16; 3 = 0.37; 4 = 0.65

Well Information

Well Location: _____	Well Locked at Arrival: <input type="checkbox"/> yes
Condition of Well: _____	Well Locked at Departure: <input type="checkbox"/> yes
Well Completion: NA	Key Number To Well: NA

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30064310	Well ID	MW-15	Date	12/14/2021		
Project Name/Location	COP5_West_97502_WA_Sedro Woolley		Weather(°F)	41.0 degrees F and Cloudy. The wind is blowing SE at 6.9 mph.			
Measuring Pt. Description	Top of Inner Casing	MP Elevation	Casing Diameter (in)	2	Well Casing Material	PVC	
Static Water Level (ft-bmp)	7.65	Total Depth (ft-bmp)	30	Water Column (ft)	22.35	Gallons in Well	3.63
Purge Start	12:40	Pump Intake (ft-bmp)	29	Purge Method	Low-Flow	Purge Equipment	Peristaltic
Purge End	13:30	Volumes Purged	0.69	Sample ID	MW-15-W-20211214	Sampled by	Joe Sepiol
Sample Time	13:25	Gallons Purged	2.51	Replicate/Code No.	NA	Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
12:44	0	0	200	7.65	0.13	6.36	0.278	0	0.59	13.4	52	--	--
12:49	5	5	200	7.65	0.48	6.41	0.277	0	0.47	13.9	22.6	--	--
12:54	5	10	200	7.65	0.74	7.72	0.279	0	0.43	13.9	-20.4	--	--
12:59	5	15	200	7.74	1.00	6.41	0.276	0	0.39	14.1	-66.5	--	--
13:04	5	20	200	7.80	1.27	6.42	0.265	0	0.37	14.3	-134	--	--
13:09	5	25	200	7.80	1.53	6.42	0.261	0	0.34	14.3	-152.1	--	--
13:14	5	30	200	7.81	1.80	6.41	0.257	0	0.32	14.3	-156.8	--	--
13:19	5	35	200	7.80	2.06	6.42	0.254	0	0.32	14.3	-164.1	--	--
13:24	5	40	200	7.80	2.32	6.43	0.253	0	0.31	14	-167.5	Clear	Mild

Constituent Sampled	Container	Number	Preservative

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04; 1.5 = 0.09; 2.5 = 0.26; 3.5 = 0.50; 6 = 1.47
 1.25 = 0.06; 2 = 0.16; 3 = 0.37; 4 = 0.65

Well Information

Well Location: _____	Well Locked at Arrival: no _____
Condition of Well: _____	Well Locked at Departure: no _____
Well Completion: NA _____	Key Number To Well: NA _____

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Project Number	30064310	Well ID	MW-16	Date	12/14/2021		
Site Location	Sedro Woolley, Washington	Site ID	97502	Weather (°F)	Clear	Sampled by	Shad Brooks
Measuring Point Description	Top of Casing	Screen Depth Interval (ft-bmp)	5 to 10	Casing Diameter (in.)	2	Well Casing Material	--
Static Water Level (ft-bmp)	--	Total Depth (ft-bmp)	--	Water Column (ft)	--	Gallons in Well	0
Water Quality Meter Make/Model	YSI Pro Plus	Purge Method	Low-Flow	Sample Method	Grab		
Sample Time	12:20	Well Volumes Purged	--	Sample ID	MW-16-20211214	Evacuation Equipment	Peristaltic
Purge Start	11:50	Gallons Purged	1.50	Duplicate ID	--		
Purge End	12:19	Total Purge Time (h:m)	0:29				

Time	Rate (ml/min)	Depth to Water (ft)	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
									Color	Odor
11:50	150	7.38	6.14	0.218	0.00	0.36	11.20	18.6	Clear	None
11:56	150	7.38	6.20	--	0.00	0.35	11.40	14.9	Clear	None
12:00	150	7.38	6.23	0.215	0.00	0.33	11.40	6.9	Clear	None
12:05	150	7.36	6.30	0.214	0.00	0.33	11.80	1	Clear	None
12:10	150	7.36	6.28	0.215	0.00	0.34	11.90	0.3	Clear	None
12:15	150	7.36	6.31	0.215	0.00	0.42	11.80	0.9	Clear	None

Comments: None

Well Casing Volume Conversion

Well diameter (in.) = 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
gallons per foot 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Sample Information

Sample ID: MW-16-20211214 Sample Time: 12:20 Sample Depth (ft-bmp): 10.5
Analytes and Methods: See Chain-of-Custody.

ft-bmp = feet below measuring point
in. = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter
PVC = Polyvinyl Chloride

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius
-- = Not Recorded

Groundwater Sampling Form



Project Number	30064310	Well ID	MW-17	Date	12/15/2021		
Project Name/Location	COP5_West_97502_WA_Sedro Woolley	Weather(°F)	42.8 degrees F and .				
Measuring Pt. Description	Top of Inner Casing	MP Elevation	Casing Diameter (in)	2	Well Casing Material	PVC	
Static Water Level (ft-bmp)	7.93	Total Depth (ft-bmp)	30	Water Column (ft)	22.07	Gallons in Well	3.59
Purge Start	12:50	Pump Intake (ft-bmp)	20	Purge Method	Low-Flow	Purge Equipment	Peristaltic
Purge End	13:49	Volumes Purged	0.77	Sample ID	MW-17-W-20211215	Sampled by	Joe Sepiol
Sample Time	13:45	Gallons Purged	2.77	Replicate/Code No.	NA	Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
12:54	0	0	200	8.03	0.21	6.95	0.292	11.7	2.03	12.2	-120.6	--	--
12:59	5	5	200	8.03	0.48	6.85	0.291	9.69	1.19	11.8	-146.4	--	--
13:04	5	10	200	8.03	0.74	6.84	0.291	9.46	1.14	11.6	-151	--	--
13:09	5	15	200	8.03	1.00	6.83	0.29	8.3	1.09	11.8	-154.9	--	--
13:14	5	20	200	8.04	1.27	6.83	0.29	10.08	1.06	11.8	-158.3	--	--
13:19	5	25	200	8.04	1.53	6.82	0.29	9.5	0.93	12	-178.6	--	--
13:24	5	30	200	8.04	1.80	6.82	0.291	7.5	0.8	12.3	-188.8	--	--
13:29	5	35	200	8.04	2.06	6.83	0.292	7.8	0.7	12.2	-196.4	--	--
13:34	5	40	200	8.04	2.32	6.83	0.294	6.42	0.67	12.1	-198.7	--	--
13:39	5	45	200	8.04	2.59	6.83	0.295	4.89	0.6	12.3	-205	Clear	Strong

Constituent Sampled	Container	Number	Preservative

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04; 1.5 = 0.09; 2.5 = 0.26; 3.5 = 0.50; 6 = 1.47
 1.25 = 0.06; 2 = 0.16; 3 = 0.37; 4 = 0.65

Well Information

Well Location: _____	Well Locked at Arrival: no _____
Condition of Well: _____	Well Locked at Departure: no _____
Well Completion: NA _____	Key Number To Well: NA _____

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30064310	Well ID	MW-18	Date	12/15/2021
Project Name/Location	COP5_West_97502_WA_Sedro Woolley		Weather(°F)	39.2 degrees F and Cloudy. The wind is blowing E at 4.7 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	Casing Diameter (in)	Well Casing Material	NA
Static Water Level (ft-bmp)	8.45	Total Depth (ft-bmp)	19.76	Water Column (ft)	11.31
Purge Start	08:55	Pump Intake (ft-bmp)		Purge Method	Low-Flow
Purge End		Volumes Purged		Sample ID	MW-18-W-20211215
Sample Time	09:40	Gallons Purged		Replicate/ Code No.	NA
				Sampled by	Shad Brooks
				Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
09:05	0	0	150	8.45	--	6.39	0.269	48.32	0.76	13.3	-59.9	--	--
09:10	5	5	150	8.48	--	6.43	0.27	25.37	0.64	12.6	-61.2	--	--
09:15	5	10	150	8.48	--	6.43	0.272	14.02	0.6	12.1	-62.7	--	--
09:20	5	15	150	8.48	--	6.48	0.276	13.61	0.56	12	-63.2	--	--
09:25	5	20	150	8.38	--	6.49	0.276	10.35	0.55	12.1	-63.3	--	--
09:31	6	26	150	8.39	--	6.5	0.278	8.49	0.51	12.2	-63.8	--	--
09:35	4	30	150	8.39	--	6.49	0.277	9.1	0.52	12.2	-63.2	--	--
09:40	5	35	150	8.39	--	6.49	0.278	8.6	0.52	12.3	-62.8	Clear	Medium

Constituent Sampled	Container	Number	Preservative

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04; 1.5 = 0.09; 2.5 = 0.26; 3.5 = 0.50; 6 = 1.47
 1.25 = 0.06; 2 = 0.16; 3 = 0.37; 4 = 0.65

Well Information

Well Location: _____	Well Locked at Arrival: _____
Condition of Well: _____	Well Locked at Departure: _____
Well Completion: NA	Key Number To Well: NA

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30064310	Well ID	MW-19	Date	12/15/2021
Project Name/Location	COP5_West_97502_WA_Sedro Woolley		Weather(°F)	39.2 degrees F and Cloudy. The wind is blowing E at 4.7 mph.	
Measuring Pt. Description	Top of Inner Casing	MP Elevation		Casing Diameter (in)	2
				Well Casing Material	PVC
Static Water Level (ft-bmp)	8.73	Total Depth (ft-bmp)	30	Water Column (ft)	21.27
				Gallons in Well	3.46
Purge Start	08:42	Pump Intake (ft-bmp)	20	Purge Method	Low-Flow
				Purge Equipment	Peristaltic
Purge End	09:16	Volumes Purged	0.42	Sample ID	MW-19-W-20211215
				Sampled by	Joe Sepiol
Sample Time	09:15	Gallons Purged	1.45	Replicate/ Code No.	NA
				Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
08:44	0	0	200	8.73	0.11	5.97	0.447	10.4	5.44	10.9	-13	--	--
08:49	5	5	200	8.78	0.37	6.08	0.458	4.16	3.3	12.2	-38	--	--
08:54	5	10	200	8.81	0.63	6.12	0.466	2.91	3.27	12.2	-43.1	--	--
08:59	5	15	200	8.82	0.90	6.14	0.469	2.89	3.25	12	-45.2	--	--
09:04	5	20	200	8.81	1.16	6.15	0.471	2.86	3.15	12	-48.6	Clear	None

Constituent Sampled	Container	Number	Preservative
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04; 1.5 = 0.09; 2.5 = 0.26; 3.5 = 0.50; 6 = 1.47
 1.25 = 0.06; 2 = 0.16; 3 = 0.37; 4 = 0.65

Well Information

Well Location: Alley _____	Well Locked at Arrival: no _____
Condition of Well: Good condition _____	Well Locked at Departure: no _____
Well Completion: Flush mount _____	Key Number To Well: NA _____

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30064310	Well ID	MW-20	Date	12/15/2021
Project Name/Location	COP5_West_97502_WA_Sedro Woolley		Weather(°F)		
Measuring Pt. Description	Top of Inner Casing	MP Elevation		Casing Diameter (in)	2
				Well Casing Material	PVC
Static Water Level (ft-bmp)	9.73	Total Depth (ft-bmp)	30	Water Column (ft)	20.27
				Gallons in Well	3.29
Purge Start	09:53	Pump Intake (ft-bmp)	20	Purge Method	Low-Flow
				Purge Equipment	Peristaltic
Purge End	10:40	Volumes Purged	0.68	Sample ID	MW-20-W-20211215
				Sampled by	Joe Sepiol
Sample Time	10:35	Gallons Purged	2.25	Replicate/Code No.	NA
				Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
09:55	0	0	200	9.73	0.11	6.73	0.342	5.5	8.84	21.1	-24.2	--	--
10:00	5	5	200	9.76	0.37	6.57	0.349	2.42	7.32	12.8	-22.2	--	--
10:05	5	10	200	9.87	0.63	6.57	0.353	2.51	7.17	12.4	-22.2	--	--
10:10	5	15	200	9.87	0.90	6.57	0.349	4	7.05	12.5	-23.4	--	--
10:15	5	20	200	9.90	1.16	6.57	0.347	4.55	6.96	13.3	-23	--	--
10:20	5	25	200	9.91	1.43	6.57	0.349	2.3	7.04	13.3	-22.8	--	--
10:25	5	30	200	9.92	1.69	6.58	0.351	3.04	7.03	13.3	-23.5	--	--
10:30	5	35	200	9.92	1.96	6.58	0.351	3.21	6.99	13.2	-23.7	Clear	None

Constituent Sampled	Container	Number	Preservative

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04; 1.5 = 0.09; 2.5 = 0.26; 3.5 = 0.50; 6 = 1.47
 1.25 = 0.06; 2 = 0.16; 3 = 0.37; 4 = 0.65

Well Information

Well Location: _____	Well Locked at Arrival: no
Condition of Well: _____	Well Locked at Departure: no
Well Completion: Flush mount	Key Number To Well: NA

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30064310	Well ID	MW-21	Date	12/16/2021
Project Name/Location	COP5_West_97502_WA_Sedro Woolley		Weather(°F)	40s rain	
Measuring Pt. Description	Top of Inner Casing	MP Elevation	Casing Diameter (in)	Well Casing Material	NA
Static Water Level (ft-bmp)	6.75	Total Depth (ft-bmp)	19.5	Water Column (ft)	12.75
Purge Start		Pump Intake (ft-bmp)		Purge Method	Low-Flow
				Purge Equipment	Peristaltic
Purge End		Volumes Purged		Sample ID	NA
				Sampled by	Shad Brooks
Sample Time		Gallons Purged		Replicate/Code No.	NA
				Sample Type	

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
10:00	0	0	150	6.75	--	6.64	0.31	4.1	1.41	8.4	71.7	--	--
10:05	5	5	150	6.75	--	6.58	0.307	4.35	0.89	9	66.5	--	--
10:10	5	10	150	6.75	--	6.58	0.308	3.89	0.77	9	64.4	--	--
10:15	5	15	150	6.75	--	6.58	0.308	3.1	0.67	9	59.3	--	--
10:20	5	20	150	6.75	--	6.58	0.306	4.23	0.62	9.2	57.9	--	--
10:25	5	25	150	6.75	--	6.59	0.307	2.5	0.6	9.5	59.9	--	--
10:30	5	30	150	6.75	--	6.59	0.308	3.25	0.6	9.2	58.6	--	--
10:35	5	35	150	6.75	--	6.59	0.307	2.3	0.57	9.2	58.9	--	--
10:40	5	40	150	6.75	--	6.59	0.306	2.9	0.56	9	59.3		

Constituent Sampled	Container	Number	Preservative

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04; 1.5 = 0.09; 2.5 = 0.26; 3.5 = 0.50; 6 = 1.47
 1.25 = 0.06; 2 = 0.16; 3 = 0.37; 4 = 0.65

Well Information

Well Location: _____	Well Locked at Arrival: _____
Condition of Well: _____	Well Locked at Departure: _____
Well Completion: NA _____	Key Number To Well: NA _____

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Appendix F

Soil Vapor Sampling Collection Logs

97502, 30064310, Skagit County, , Sedro-Woolley, 98284, WA, US, Ferry St, 124

Created	2021-10-07 20:28:39 UTC by Trevor Bryant
Updated	2021-10-07 23:12:26 UTC by Trevor Bryant
Location	48.505189614415634, -122.23884914081752

Selecting "Yes" confirms your digital signature as having read the QP and/or TGI relevant to this use case.

General Information

Office Name	Seattle
Office Address	1100 Olive Waty, Suite 800, Seattle, WA 98101
Client	CEMC
Project Name	97502
Project Number	30064310
Site Address	124 Ferry St Sedro-Woolley, WA 98284
Field Manager	Alex Laws
Phone Number	111-111-1111
Special Instructions (specific analyte list, site specific instructions, specific contacts, etc.)	None
Email Address for Result Reporting	Ada.Hamilton@arcadis.com
Leak Test Method	Helium Tracer Test
Helium Detector Used	MGD-2002

Sampler Details

Sampler Name	Trevor Bryant
Sampler Phone Number	859-333-4115
Sampler Email Address	trevor.bryant@arcadis.com

Lab Sample Information

Sample Media Type	Summa
Sample Media Size	1 L
Lab	F&B

VP-1-7

Sample Collection Information

Sample Type	Regular Sample
Location ID	VP-1-7
Sample ID	VP-1-7
Sample Location Description	Western most, shorter tubing
Is Duplicate associated with this Sample ID	No
Create a separate child record to enter all the associated information related to Duplicate Sample	
Date	2021-10-07
Sampling Depth (feet)	7
Sample Media ID	3257
Flow Controller ID	101
Sample Collection Start Time	13:49

Starting Sampling Pressure (inches of Mercury)	-30
Ending Sampling Pressure (inches of Mercury)	-5
Sample Collection End Time	13:54
Notes	None

Photos



Leak/Tracer Test

Shut in Test	Pass
Pre-sample Helium Purge Reading (parts per million)	0
Shroud Helium Concentration should be at least 40% (10% in CA)	
Shroud Helium Concentration (%)	60
Helium Reading in Purged Vapor should be <10% (<5% in CA) of shroud concentration - 4% (2% in CA) for a 40% shroud concentration.	
Helium Reading in Purged Vapor (%)	0
Helium Test	Pass
Purge Method	Pump
Purge volume = $3 \times \pi \times \text{inner radius of tubing}^2 \times \text{length of tubing}$ (length of tubing depends on length of sample train, and depth of sample point (for SVMPS, for vapor pins, it only depends on sample train length))	
Purge Volume (milliliters)	600
Purge Rate (mL/min)	150
Purge Induced Vacuum	Yes
Vacuum Observations	Good vacuum

Purged Soil Gas Parameters (completed after sample collection)

Which parameter are going to be analyzed	CH4 LEL (%), O2, PID, CO2
CH4 LEL (%) (use carbon filter)	0
CO2 (%)	10.6
O2 (%)	8
PID (parts per million)	0

VP-2-7

Sample Collection Information

Sample Type	Regular Sample
Location ID	VP-2-7
Sample ID	VP-2-7
Sample Location Description	Eastern, shorter tubing
Is Duplicate associated with this Sample ID	Yes
Duplicate Sample ID	DUP-1
Create a separate child record to enter all the associated information related to Duplicate Sample	
Date	2021-10-07
Sampling Depth (feet)	7.5
Sample Media ID	8346
Flow Controller ID	108
Sample Collection Start Time	14:31
Starting Sampling Pressure (inches of Mercury)	-30
Ending Sampling Pressure (inches of Mercury)	-5
Sample Collection End Time	14:36
Notes	None

Photos



Leak/Tracer Test

Shut in Test	Pass
Pre-sample Helium Purge Reading (parts per million)	0
Shroud Helium Concentration should be at least 40% (10% in CA)	
Shroud Helium Concentration (%)	60
Helium Reading in Purged Vapor should be <10% (<5% in CA) of shroud concentration - 4% (2% in CA) for a 40% shroud concentration.	
Helium Reading in Purged Vapor (%)	0
Helium Test	Pass
Purge Method	Pump

Purge volume = $3 \times \pi \times \text{inner radius of tubing}^2 \times \text{length of tubing}$ (length of tubing depends on length of sample train, and depth of sample point (for SVMPS, for vapor pins, it only depends on sample train length)

Purge Volume (milliliters)	600
Purge Rate (mL/min)	150
Purge Induced Vacuum	Yes
Vacuum Observations	Good vacuum

Purged Soil Gas Parameters (completed after sample collection)

Which parameter are going to be analyzed	CH4 LEL (%), O2, PID, CO2
CH4 LEL (%) (use carbon filter)	0
CO2 (%)	8.7
O2 (%)	10.1
PID (parts per million)	0

DUP-1

Sample Collection Information

Sample Type	Duplicate Sample
Sample ID	DUP-1
Sample Location Description	VP-2-7
Create a separate child record to enter all the associated information related to Duplicate Sample	
Date	2021-10-07
Sampling Depth (feet)	7.5
Sample Media ID	8255
Flow Controller ID	117
Is the Start and Stop Time same as its parent sample?	No
Sample Collection Start Time	14:31
Starting Sampling Pressure (inches of Mercury)	-30
Ending Sampling Pressure (inches of Mercury)	-5
Sample Collection End Time	14:37
Notes	None

Photos



If Leak/Tracer test same as its parent sample? Yes

Leak/Tracer Test

Shroud Helium Concentration should be at least 40% (10% in CA)

Helium Reading in Purged Vapor should be <10% (<5% in CA) of shroud concentration - 4% (2% in CA) for a 40% shroud concentration.

Purge volume = $3 \times \pi \times \text{inner radius of tubing}^2 \times \text{length of tubing}$ (length of tubing depends on length of sample train, and depth of sample point (for SVMPS, for vapor pins, it only depends on sample train length)

EB-1

Sample Collection Information

Sample Type	Equipment Blank
Sample ID	EB-1
Sample Location Description	Parking spot
Create a separate child record to enter all the associated information related to Duplicate Sample	
Date	2021-10-07
Sample Media ID	7998
Flow Controller ID	106
Sample Collection Start Time	15:27
Starting Sampling Pressure (inches of Mercury)	-29
Ending Sampling Pressure (inches of Mercury)	-5
Sample Collection End Time	15:31
Notes	None

Photos



Leak/Tracer Test

Shroud Helium Concentration should be at least 40% (10% in CA)

Helium Reading in Purged Vapor should be <10% (<5% in CA) of shroud concentration - 4% (2% in CA) for a 40% shroud concentration.

Purge volume = $3 \times \pi \times \text{inner radius of tubing}^2 \times \text{length of tubing}$ (length of tubing depends on length of sample train, and depth of sample point (for SVMPS, for vapor pins, it only depends on sample train length)

VP-1-5

Sample Collection Information

Sample Type	Regular Sample
Location ID	VP-1-5
Sample ID	VP-1-5
Sample Location Description	Western most, longer tubing
Is Duplicate associated with this Sample ID	No
Create a separate child record to enter all the associated information related to Duplicate Sample	
Date	2021-10-07
Sampling Depth (feet)	5
Sample Media ID	8211
Flow Controller ID	102
Sample Collection Start Time	15:46
Starting Sampling Pressure (inches of Mercury)	-30
Ending Sampling Pressure (inches of Mercury)	-5
Sample Collection End Time	15:51
Notes	None

Photos



Leak/Tracer Test

Shut in Test	Pass
Pre-sample Helium Purge Reading (parts per million)	0
Shroud Helium Concentration should be at least 40% (10% in CA)	
Shroud Helium Concentration (%)	60
Helium Reading in Purged Vapor should be <10% (<5% in CA) of shroud concentration - 4% (2% in CA) for a 40% shroud concentration.	
Helium Reading in Purged Vapor (%)	0
Helium Test	Pass
Purge Method	Pump
Purge volume = $3 \times \pi \times \text{inner radius of tubing}^2 \times \text{length of tubing}$ (length of tubing depends on length of sample train, and depth of sample point (for SVMPS, for vapor pins, it only depends on sample train length)	
Purge Volume (milliliters)	600
Purge Rate (mL/min)	150
Purge Induced Vacuum	Yes
Vacuum Observations	Good vacuum

Purged Soil Gas Parameters (completed after sample collection)

Which parameter are going to be analyzed	CH4 LEL (%), CO2, O2, PID
CH4 LEL (%) (use carbon filter)	0
CO2 (%)	10.6
O2 (%)	8.1
PID (parts per million)	0

2021-10-07, 15:55

Meteorological Data Date	2021-10-07
Time	15:55
Outdoor Temperature (Degree F)	60
Relative Humidity (%)	67

Barometric Pressure (inches of Mercury)	30
Are you connected to the internet via data plan or WiFi?	Yes
Get weather data from National Weather Service Website for your current location?	N/A
The weather source information is captured from NWS. The data in weather field is auto-populated based on your selection "are connected to wifi" = "yes". The data auto- populated comes in below format . Example below.: Temp is 23.6 degree F and Weather Condition is clear. The wind is blowing NE at 23 mph .	
Weather	13 wmoUnit:degC and Partly Cloudy. The wind is blowing undefined at 0 wmoUnit:km_h-1.
General Notes or Observations	VP-3 is not present. Likely paved over. Was not sampled. VP-1 and VP-2 are both nested, each with one VP screened at 5 ft and the other at 8 ft.

Appendix G

Waste Manifest

Site Address: 640 Metcalf Street
Sedro-Woolley, WA 98284

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SC PPW 8/1/2021

WORK ORDER NO. DI 2106745861

DOCUMENT NO. **188036** STRAIGHT BILL OF LADING

Clean Harbors Environmental Services, Inc.

TRANSPORTER 1 _____ VEHICLE ID # _____

EPA ID # MAD039322250 TRANS. 1 PHONE (781) 792-5000

TRANSPORTER 2 R Transport VEHICLE ID # _____

EPA ID # WAH 0000 28 338 TRANS. 2 PHONE _____

DESIGNATED FACILITY Clean Harbors Grassy Mountain LLC			SHIPPER Chevron EMC - 97502		
FACILITY EPA ID # UTD991301748			SHIPPER EPA ID # NONERQUIRED		
ADDRESS 3 Miles East 7 Miles North of Knolls			ADDRESS Waste Tracking Desk P.O. BOX 6004		
CITY Grantsville		STATE UT	ZIP 84029	CITY San Ramon	
				STATE CA	ZIP 94583
CONTAINERS NO. & SIZE	TYPE	HM	DESCRIPTION OF MATERIALS	TOTAL QUANTITY	UNIT WT/VOL
3X55	DM		NON DOT REGULATED MATERIAL, (PETROLEUM IMPACTED GROUNDWATER, NON-HAZARDOUS)	900	P
4X55	DM		NON DOT REGULATED MATERIAL, (PETROLEUM IMPACTED SOIL (NON HAZARDOUS))	2000	P
			C.		
			D.		
			E.		
			F.		
			G.		
			H.		
SPECIAL HANDLING INSTRUCTIONS EMERGENCY PHONE #: (800) 483-3718 GENERATOR: Chevron EMC - 97502 A.CH1963712 B.CH1963734 <u>H132 H132</u>					

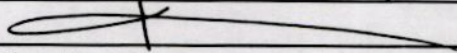
SHIPPERS CERTIFICATION: This is to certify that the above named materials are properly classified, described, packaged, marked and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

SHIPPER	PRINT <u>Charles Lutz</u>	SIGN <u>Charles Lutz</u>	DATE <u>1-27-22</u>
TRANSPORTER 1	PRINT <u>Charles Lutz</u>	SIGN <u>Charles Lutz</u>	DATE <u>1-27-22</u>
TRANSPORTER 2	PRINT <u>Tanner Beathie</u>	SIGN <u>Tanner Beathie</u>	DATE <u>1-29-22</u>
RECEIVED BY	PRINT <u>Atty Soffel</u>	SIGN <u>Atty Soffel</u>	DATE <u>2-10-22</u>

Generator acknowledges that no material change has occurred either in the characteristics or in the process generating the material.

STRAIGHT BILL OF LADING CONTINUATION FORM

DOCUMENT # 188036
Page 2 of 2

Transporter # 3
Company Name Clean Harbors Environmental Services
EPA ID # MAD039322250
Name Phil Kerbawy
Signature 
Date 2/1/2022

Transporter # _____
Company Name _____
EPA ID # _____
Name _____
Signature _____
Date ____/____/____

Transporter # _____
Company Name _____
EPA ID # _____
Name _____
Signature _____
Date ____/____/____

Transporter # _____
Company Name _____
EPA ID # _____
Name _____
Signature _____
Date ____/____/____

Clean Harbors Manifest Addendum

<u>Generator ID Number:</u>		<u>Sales Order Number:</u>	
NONEREVEREQUIRED BOL188036		2106745861	
Chevron EMC - 97502 640 Metcalf Street Sedro-Woolley, WA98284			
<u>Line #:</u>	<u>Profile No:</u>	<u>Profile Description:</u>	<u>Waste Codes:</u>
A.	CH1963712	RETAIL - IMPACTED PURGE/GROUNDWATER (NON HAZ)	
		<u>CH Container #</u>	<u>Customer Container #</u>
		C000000002	
		C000000003	
		C000000004	
B.	CH1963734	RETAIL - IMPACTED SOIL (NON HAZARDOUS)	
		<u>CH Container #</u>	<u>Customer Container #</u>
		C000000005	
		C000000006	
		C000000007	
		C000000008	

Appendix H

Soil Lab Data

Chevron - WA

DATA REVIEW

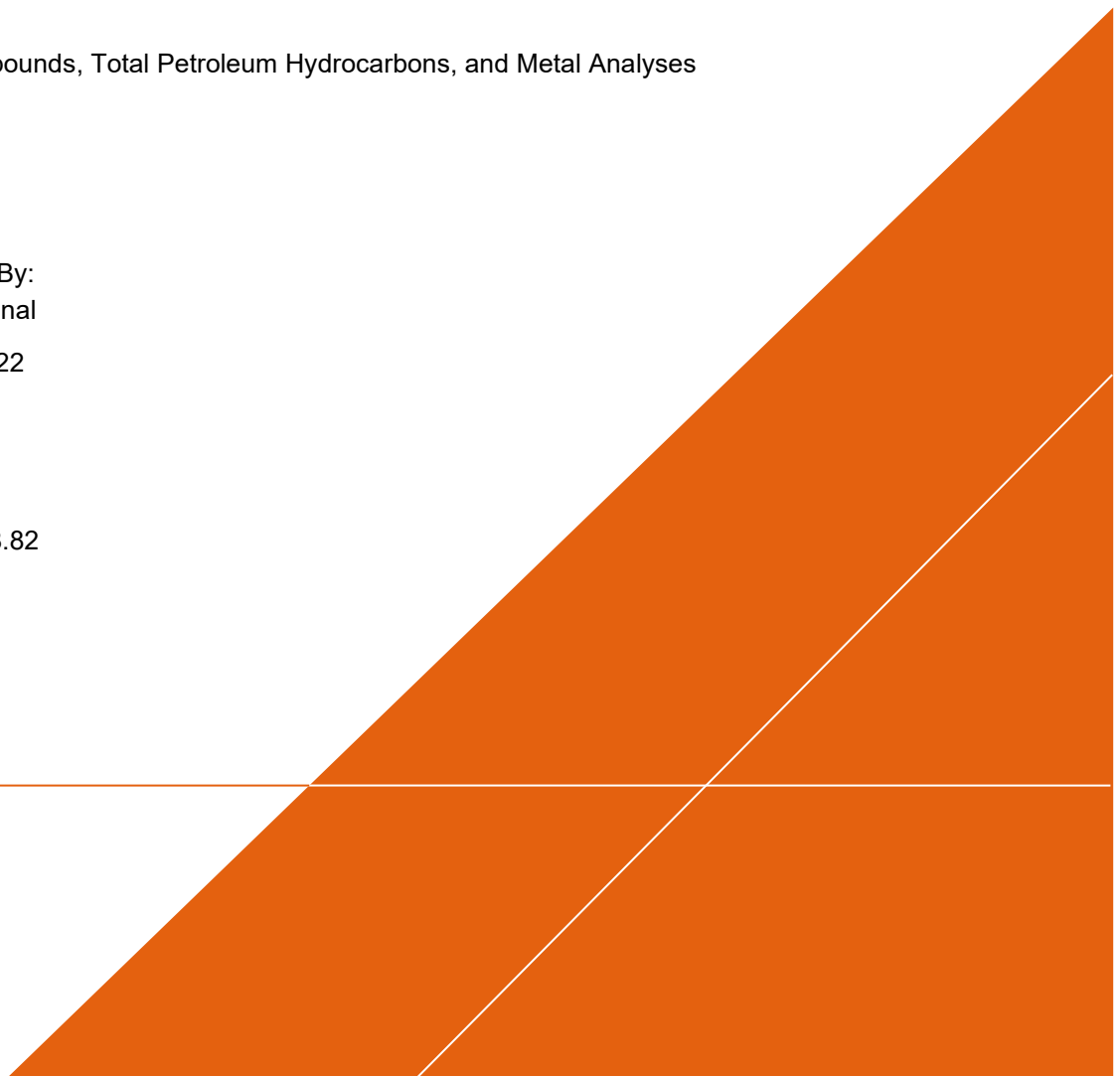
SEDRO-WOOLLEY, WA

Volatile organic compounds, Total Petroleum Hydrocarbons, and Metal Analyses

SDG# L1408057

Analyses Performed By:
Pace Analytical National
Mount Juliet, TN 37122

Report # 44126R
Review Level: Tier II
Project: 30064310.08.82



DATA REVIEW REPORT

SUMMARY

This data quality assessment summarizes the review of Sample Delivery Groups (SDG) # L1408057 for samples collected in association with the Chevron SEDRO-WOOLLEY, WA Site. The review was conducted as a Tier II evaluation and included review of data package completeness. Only analytical data associated with constituents of concern were reviewed for this validation. Field documentation was not included in this review. Included with this assessment are the validation annotated sample result sheets and chain of custody. Analyses were performed on the following samples:

Sample ID	Lab ID	Matrix	Sample Collection Date	Parent Sample	Analysis		
					VOC	TPH	MET
SB-2-10.5-11.5_210922	L1408057-01	Soil	09/22/2021		X	X	X
SB-2-15.5-16.5_210922	L1408057-02	Soil	09/22/2021		X	X	X
SB-2-18.0-19.0_210922	L1408057-03	Soil	09/22/2021		X	X	X
SB-2-6.0-7.0_210922	L1408057-04	Soil	09/22/2021		X	X	X
MW-21-11.5-12.5_210921	L1408057-05	Soil	09/21/2021		X	X	X
MW-21-14.0-15.0_210921	L1408057-06	Soil	09/21/2021		X	X	X
MW-21-9.0-10.0_210921	L1408057-07	Soil	09/21/2021		X	X	X
MW-21-2.5-3.5_210920	L1408057-08	Soil	09/20/2021		X	X	X
MW-21-19.0-20.0_210921	L1408057-09	Soil	09/21/2021		X	X	X
MW-20-7.0-8.0_210922	L1408057-11	Soil	09/22/2021		X	X	X
MW-15-6.5-7.5_210922	L1408057-12	Soil	09/22/2021		X	X	X
MW-15-14.0-15.0_210921	L1408057-13	Soil	09/21/2021		X	X	X
MW-15-19.0-20.0_210921	L1408057-14	Soil	09/21/2021		X	X	X
MW-15-10.0-11.0_210921	L1408057-15	Soil	09/21/2021		X	X	X
DUP-1-092221_210922	L1408057-16	Soil	09/22/2021	MW-20-15.0-16.0_210922	X	X	X
MW-20-15.0-16.0_210922	L1408057-17	Soil	09/22/2021		X	X	X

Notes:

VOC = volatile organic compounds.

TPH = total petroleum hydrocarbons.

MET = metals.

DATA REVIEW REPORT

ANALYTICAL DATA PACKAGE DOCUMENTATION

The table below is the evaluation of the data package completeness.

Items Reviewed	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
1. Sample receipt condition		X		X	
2. Requested analyses and sample results		X		X	
3. Master tracking list		X		X	
4. Methods of analysis		X		X	
5. Reporting limits		X		X	
6. Sample collection date		X		X	
7. Laboratory sample received date		X		X	
8. Sample preservation verification (as applicable)		X		X	
9. Sample preparation/extraction/analysis dates		X		X	
10. Fully executed Chain-of-Custody (COC) form		X		X	
11. Narrative summary of QA or sample problems provided		X		X	
12. Data Package Completeness and Compliance		X		X	

Note:

QA - Quality Assurance

DATA REVIEW REPORT

ORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) SW-846 Methods 8260D, NWTPHDX, and NWTPHGX). Validation was performed following the USEPA National Functional Guidelines NFG for Organic Superfund Methods Data Review, EPA-540-R-20-005 (November 2020), with reference to the historical (USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review, OSWER 9240.1-05A-P, October 1999, as appropriate).

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and had already been subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with USEPA National Functional Guidelines:

- Concentration (C) Qualifiers
 - U The compound was analyzed for but not detected. The associated value is the compound quantitation limit.
 - B The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.
- Quantitation (Q) Qualifiers
 - E The compound was quantitated above the calibration range.
 - D Concentration is based on a diluted sample analysis.
- Validation Qualifiers
 - J The compound was positively identified; however, the associated numerical value is an estimated concentration only.
 - UJ The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.
 - JN The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification. The associated numerical value is an estimated concentration only.
 - UB Compound considered non-detect at the listed value due to associated blank contamination.
 - N The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.
 - R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is

DATA REVIEW REPORT

that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

DATA REVIEW REPORT

VOLATILE ORGANIC COMPOUND (VOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8260D	Soil	14 days from collection to analysis	Cool to <6 °C.

Note:

s.u. Standard units

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the sample detection limit (SDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the SDL in the associated blanks; therefore, detected sample results were not associated with blank contamination.

3. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. VOC analysis requires that all surrogates associated with the analysis exhibit recoveries within the laboratory-established acceptance limits.

Sample associated with surrogates exhibiting recoveries outside of the control limits presented in the following table.

Sample ID	Surrogate	Recovery
MW-15-10.0-11.0_210921	(s)4-Bromofluorobenzene	> UL

Notes:

UL Upper I limit

The criteria used to evaluate the surrogate recoveries are presented in the following table. In the case of a surrogate deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> UL	Non-detect	No Action
	Detect	J
< LL but > 10%	Non-detect	UJ

DATA REVIEW REPORT

Control Limit	Sample Result	Qualification
	Detect	J
< 10%	Non-detect	R
	Detect	J
Surrogates diluted below the calibration curve due to the high concentration of a target compounds	Non-detect	UJ ¹
	Detect	J ¹

Note:

¹ A more concentrated analysis was not performed with surrogate compounds within the calibration range; therefore, no determination of extraction efficiency could be made.

4. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analyses

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

MS/MSD analysis was performed on sample MW-20-15.0-16.0_210922. MS/MSD analysis exhibited recoveries and RPDs within the laboratory established acceptance limits.

5. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS/LCSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All compounds associated with the LCS/LCSD analysis exhibited recoveries within the control limits.

6. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 50% for soil matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of three times the RL is applied for soil matrices.

Results for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compound	Sample Result (mg/kg)	Duplicate Result (mg/kg)	RPD
MW-20-15.0-16.0_210922 / DUP-1-092221_210922	All Compounds	U	U	AC

Notes:

AC Acceptable

The calculated RPDs between the parent sample and field duplicate were acceptable.

DATA REVIEW REPORT

7. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA REVIEW REPORT

DATA VALIDATION CHECKLIST FOR VOCs

VOCs: SW-846 8260D	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks	X				X
C. Trip blanks	X				X
Laboratory Control Sample (LCS)		X		X	
Laboratory Control Sample Duplicate (LCSD)		X		X	
LCS/LCSD Precision (RPD)		X		X	
Matrix Spike (MS)		X		X	
Matrix Spike Duplicate (MSD)		X		X	
MS/MSD Precision (RPD)		X		X	
Field/Lab Duplicate (RPD)		X		X	
Surrogate Spike Recoveries		X	X		
Dilution Factor		X		X	
Moisture Content		X		X	

Notes:

%R Percent recovery

RPD Relative percent difference

DATA REVIEW REPORT

TOTAL PETROLEUM HYDROCARBONS ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
GRO by Method NWTPHGX	Soil	14 days from collection to analysis	Cool to <6 °C
DRO by Method NWTPHDX	Soil	14 days from collection to extraction and 40 days from extraction to analysis	Cool to <6 °C

All samples were analyzed within the specified holding times.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the sample detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore, detected sample results were not associated with blank contamination.

3. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. The analysis requires surrogate compounds exhibit recoveries within the laboratory-established acceptance limits.

All surrogate recoveries were within control limits.

4. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analyses

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

MS/MSD analysis was performed on sample SB-2-15.5-16.5_210922 and MW-21-19.0-20.0_210921 for Gasoline Range Organics. MS/MSD analysis exhibited recoveries and RPDs within the laboratory established acceptance limits.

Sample locations associated with the MS/MSD exhibiting recoveries outside of the control limits are presented in the following table.

DATA REVIEW REPORT

Sample Locations	Compound	MS Recovery	MSD Recovery
SB-2-15.5-16.5_210922	Diesel Range Organics (DRO)	< LL but > 10%	< LL but > 10%%

Note:

AC = Acceptable

The criteria used to evaluate the MS/MSD recoveries are presented in the following table. In the case of an MS/MSD deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> the upper control limit (UL)	Non-detect	No Action
	Detect	J
< the lower control limit (LL) but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J
Parent sample concentration > four times the MS/MSD spiking solution concentration (D).	Detect	No Action
	Non-detect	

The MS/MSD analysis exhibited acceptable RPDs between the MS/MSD recoveries.

5. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All compounds associated with the LCS analysis exhibited recoveries within the control limits.

6. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 50% for soil matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of three times the RL is applied for soil matrices.

Results for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compound	Sample Result (mg/kg)	Duplicate Result (mg/kg)	RPD
MW-20-15.0-16.0_210922 / DUP-1-092221_210922	Gasoline Range Organics (GRO)	U	U	AC
	Diesel Range Organics (DRO)	10.5	9.60	AC
	Residual Range Organics (RRO)	28.1	36.4	AC

Notes:

AC Acceptable

The calculated RPDs between the parent sample and field duplicate were acceptable.

DATA REVIEW REPORT

7. System Performance and Overall Assessment

Sample results associated with compounds exhibiting concentrations greater than the linear range are qualified as documented in the table below when reported as the final reported sample result.

Sample ID	Compound	Original Analysis (mg/kg)	Diluted Analysis (mg/kg)	Reported Analysis
MW-15-10.0-11.0_210921	Diesel Range Organics (DRO)	--	604	604D

Note: In the instance where both the original analysis and the diluted analysis sample results exhibited a concentration greater than and/or less than the calibration linear range of the instrument; the sample result exhibiting the greatest concentration will be reported as the final result.

Reported Sample Results	Qualification
Diluted sample result within calibration range	D
Diluted sample result less than the calibration range	DJ
Diluted sample result greater than the calibration range	EDJ
Original sample result greater than the calibration range	EJ

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA REVIEW REPORT

DATA VALIDATION CHECKLIST FOR TPH

TPH: NWTPHGX and NWTPHDX	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY (GC/FID)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks	X				X
Laboratory Control Sample (LCS) %R		X		X	
Laboratory Control Sample Duplicate(LCSD) %R	X				X
LCS/LCSD Precision (RPD)	X				X
Matrix Spike (MS) %R		X	X		
Matrix Spike Duplicate (MSD) %R		X	X		
MS/MSD Precision (RPD)		X		X	
Field/Lab Duplicate (RPD)		X		X	
Surrogate Spike Recoveries		X		X	
Dilution Factor		X		X	

Notes:

%R - percent recovery

RPD - relative percent difference

DATA REVIEW REPORT

INORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) SW-846 Methods 6010D. Data were reviewed in accordance USEPA National Functional Guidelines NFG for Inorganic Superfund Methods Data Review, EPA-540-R-20-006 (November 2020), with reference to the historical (USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, OSWER 9240.1-05A-P, October 2004, as appropriate).

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and that it was already subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with the USEPA National Functional Guidelines:

- Concentration (C) Qualifiers
 - U The analyte was analyzed for but not detected. The associated value is the analyte instrument detection limit.
 - J The reported value was obtained from a reading less than the reporting limit (RL), but greater than or equal to the method detection limit (MDL).
- Quantitation (Q) Qualifiers
 - E The reported value is estimated due to the presence of interference.
 - N Spiked sample recovery is not within control limits.
 - * Duplicate analysis is not within control limits.
- Validation Qualifiers
 - J The analyte was positively identified; however, the associated numerical value is an estimated concentration only.
 - UJ The analyte was not detected above the reporting limit. However, the reported limit is approximate and may or may not represent the actual limit of detection.
 - UB Analyte considered non-detect at the listed value due to associated blank contamination.
 - R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

DATA REVIEW REPORT

METALS ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 6010D	Soil	180 days from collection to analysis	Cool to <6 °C.

All samples were analyzed within the specified holding times.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank is calculated for QA blanks containing concentrations greater than the sample detection limit (SDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

All analytes were not detected above the SDL in the associated blanks; therefore, detected sample results were not associated with blank contamination.

3. Matrix Spike/Matrix Spike Duplicate (MS/MSD)/Laboratory Duplicate Analysis

MS/MSD and laboratory duplicate data are used to assess the precision and accuracy of the analytical method.

3.1 MS/MSD Analysis

All metal analytes must exhibit a percent recovery within the established acceptance limits of 75% to 125%. The MS/MSD recovery control limits do not apply for MS performed on sample locations where the analyte's concentration detected in the parent sample exceeds the MS concentration by a factor of four or greater. In instance where this is true, the data will not be qualified even if the percent recovery does not meet the control limits and the laboratory flag will be removed.

MS/MSD analysis was performed on sample MW-15-10.0-11.0_210921. MS/MSD analysis exhibited recoveries and RPDs within control limits.

3.2 Laboratory Duplicate Analysis

The laboratory duplicates relative percent difference (RPD) criterion is applied when parent and duplicate sample concentrations are greater than or equal to 5 times the RL. A control limit of 35% for soil matrices is applied when the criteria above is true. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for soil matrices.

Laboratory duplicate analysis was not performed on any of the samples from these SDG.

DATA REVIEW REPORT

4. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 50% for soil matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of three times the RL is applied for soil matrices.

Results for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Analytes	Sample Result (mg/kg)	Duplicate Result (mg/kg)	RPD
MW-20-15.0-16.0_210922 / DUP-1-092221_210922	Lead	2.85	3.89	AC

Notes:

AC - Acceptable

The calculated RPDs between the parent sample and field duplicate were acceptable.

5. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the accuracy of the analytical method independent of matrix interferences. The analytes associated with the LCS analysis must exhibit a percent recovery between the control limits of 80% and 120%.

The LCS analysis exhibited recoveries within the control limits.

6. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA REVIEW REPORT

DATA VALIDATION CHECKLIST FOR METAL

METALS; SW-846 6010D	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Inductively Coupled Plasma-Mass Spectrometry (ICP-MS)					
Tier II Validation					
Holding Times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Instrument Blanks	X				X
B. Method Blanks		X		X	
C. Equipment/Field Blanks	X				X
Laboratory Control Sample (LCS)		X		X	
Laboratory Control Sample Duplicate (LCSD) %R	X				X
LCS/LCSD Precision (RPD)	X				X
Matrix Spike (MS) %R		X		X	
Matrix Spike Duplicate (MSD) %R		X		X	
MS/MSD Precision (RPD)		X		X	
Lab Duplicate (RPD)	X				X
Field Duplicate (RPD)		X		X	
ICP Serial Dilution %D	X				X
Reporting Limit Verification		X		X	

Notes:


%R Percent recovery

RPD Relative percent difference

%D Percent difference

DATA REVIEW REPORT

VALIDATION PERFORMED BY: Bhagyashree Fulzele

SIGNATURE: 

DATE: January 11, 2022

PEER REVIEW: Dennis Capria

DATE: January 17, 2022

**CHAIN OF CUSTODY
CORRECTED SAMPLE ANALYSIS DATA
SHEETS**



Company Name/Address:
Arcadis - Chevron - WA
 1100 Olive Way
 Suite 800
 Seattle, WA 98101

Billing Information:
 Attn: Accounts Payable
 630 Plaza Dr., Ste. 600
 Highlands Ranch, CO 80129

Report to:
Ada Hamilton/Alex Laws

Email To:
 alexander.laws@arcadis.com; Ada.Hamilton@ar

Project Description:
 97502

City/State Collected:
 Sedro-Woodley, WA

Please Circle:
 (PT) MT CT ET

Phone: 206-325-5254

Client Project #
 30064310 07.21-Plan

Lab Project #
 CHEVARCWA-97502

Collected by (print):
 M. Andrew

Site/Facility ID #
 640 METCALF ST SEDRO-

P.O. #
 Quote #
 Date Results Needed

Collected by (signature):
 [Signature]

Rush? (Lab MUST Be Notified)
 Same Day ___ Five Day ___
 Next Day ___ 5 Day (Rad Only) ___
 Two Day ___ 10 Day (Rad Only) ___
 Three Day ___

Immediately Packed on Ice N ___ Y

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	soil BTEXM 8260D 40mlAmb/MeOH10ml/Syr	soil NWTPHDX NOSGT 8ozClr-NoPres	soil NWTPHGX 40mlAmb/MeOH10ml/Syr	soil Pb 6010 8ozClr-NoPres	water BTEXM 8260D 40mlAmb-HCI	water NWTPHDX NOSGT 40mlAmb-HCI-BT	water NWTPHGX 40mlAmb HCl	water PAHs 8270ESIM 40mlAmb-NoPres-WT	water Total Pb 6010 250mlHDPE-HNO3
SB-2-10.5-11.5	Grab	SS	-	9/22/21	09:05	2	X	X	X	X					
6B-2-15.5-16.5		SS	-	9/22/21	09:09	2									
SB-2-18.0-19.0		SS	-	9/22/21	09:14	2									
SB-2-6.0-7.0		SS	-	9/22/21	09:03	2									
MW-14-11.5-12.5		SS	-	9/21/21	16:20	2									
MW-14-14.0-15.0		SS	-	09/21/21	14:25	2									
MW-14-9.0-10.0		SS	-	09/21/21	16:15	2									
MW-14-2.5-3.5		SS	-	09/20/21	14:36	2									
MW-14-19.0-20.0		SS	-	09/21/21	14:30	2	X	X	X	X					
Trip Blank		SS				2									

* Matrix:
 SS - Soil AIR - Air F - Filter
 GW - Groundwater B - Bioassay
 WW - WasteWater
 DW - Drinking Water
 OT - Other

Remarks:
 pH ___ Temp ___
 Flow ___ Other ___
 Samples returned via:
 ___ UPS ___ FedEx ___ Courier ___
 Tracking # 5217 3313/0728

Sample Receipt Checklist
 COC Seal Present/Intact: NP Y N
 COC Signed/Accurate: X N
 Bottles arrive intact: X N
 Correct bottles used: X N
 Sufficient volume sent: X N
 If Applicable
 VOA Zero Headspace: Y N
 Preservation Correct/Checked: Y N
 RAD Screen <0.5 mR/hr: Y N

Relinquished by: (Signature)
 [Signature]
 Date: 09/22/21 Time: 14:20


Received by: (Signature)
 [Signature]
 Date: 9/23/21 Time: 9:45

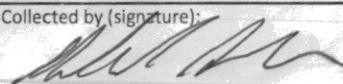
Trip Blank Received: Yes/No
 HCL/MeOH TBR
 Bottles Received: 32
 Temp 60 °C
 2.4-1.5-2.3
 If preservation required by Login: Date/Time
 Hold:
 Condition: NCF / OK

Chain of Custody Page 1 of 2

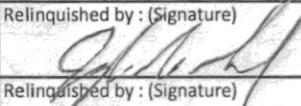
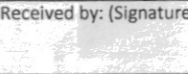
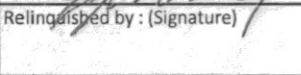
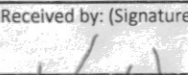
 12065 Lebanon Rd Mount Juliet, TN 37122
 Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

SPC #
C013
 11408057
 Acctnum: CHEVARCWA
 Template: T194612
 Prelogin: P871785
 PM: 110 - Brian Ford
 PB: mm9/18/21
 Shipped Via:
 Remarks | Sample # (lab only)

Company Name/Address: Arcadis - Chevron - WA 1100 Olive Way Suite 800 Seattle, WA 98101		Billing Information: Attn: Accounts Payable 630 Plaza Dr., Ste. 600 Highlands Ranch, CO 80129		Analysis / Container / Preservative							Chain of Custody Page 2 of 2		
Report to: Ada Hamilton/Alex Laws		Email To: alexander.laws@arcadis.com;Ada.Hamilton@ar		Pres Chk								 12065 Lebanon Rd Mount Juliet, TN 37122 Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf	
Project Description: 97502		City/State Collected: Sedro - Woolley, WA		Please Circle: ET MT CT ET		soil BTEXM 8260D 40mlAmb/MeOH10ml/Syr		soil NWTPHDX NOSGT 8ozClr-NoPres		soil NWTPHGX 40mlAmb/MeOH10ml/Syr			soil Pb 6010 8ozClr-NoPres

Phone: 206-325-5254	Client Project # 30064310 07.21-Plan	Lab Project # CHEVARCWA-97502	SDG # U1408057	
Collected by (print): M. Andrews	Site/Facility ID # 640 METCALF ST SEDRO-	P.O. #	Table #	
Collected by (signature): 	Rush? (Lab MUST Be Notified) Same Day ___ Five Day ___ Next Day ___ 5 Day (Rad Only) ___ Two Day ___ 10 Day (Rad Only) ___ Three Day ___	Quote #	Acctnum: CHEVARCWA	
Immediately Packed on Ice N ___ Y ___	Date Results Needed	No. of Cntrs	Template: T194612	
				Prelogin: P871785
				PM: 110 - Brian Ford
				PB: mm918121
				Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	soil BTEXM 8260D 40mlAmb/MeOH10ml/Syr	soil NWTPHDX NOSGT 8ozClr-NoPres	soil NWTPHGX 40mlAmb/MeOH10ml/Syr	soil Pb 6010 8ozClr-NoPres	water BTEXM 8260D 40mlAmb-HCl	water NWTPHDX NOSGT 40mlAmb-HCl-BT	water NWTPHGX 40mlAmb HCl	water PAHs 8270ESIM 40mlAmb-NoPres-WT	water Total Pb 6010 250mlHDPE-HNO3	Remarks	Sample # (lab only)
MW-20-7.0-8.0	Grab	SS	-	9/22/21	10:21	2	X	X	X	X							-11
MW-15-6.5-7.5		SS	-	9/22/21	11:50	2											-12
MW-15-14.0-15.0		SS	-	9/21/21	12:10	2											-13
MW-15-19.0-20.0		SS	-	9/21/21	12:15	2											-14
MW-15-10.0-11.0		SS	-	9/21/21	12:06	2											-15
DUP-1-092221		SS	-	9/22/21	-	2											-16
MW-20-15.0-16.0		SS	-	9/22/21	10:25	2	↓	↓	↓	↓							-17
		SS															
		SS															
		SS															

* Matrix: SS - Soil AIR - Air F - Filter GW - Groundwater B - Bioassay WW - WasteWater DW - Drinking Water OT - Other	Remarks:	pH _____ Temp _____ Flow _____ Other _____		Sample Receipt Checklist COC Seal Present/Intact: <input checked="" type="checkbox"/> NP <input type="checkbox"/> Y <input type="checkbox"/> N COC Signed/Accurate: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Bottles arrive intact: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Correct bottles used: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Sufficient volume sent: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N if Applicable VOA Zero Headspace: <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Preservation Correct/Checked: <input type="checkbox"/> Y <input checked="" type="checkbox"/> N RAD Screen <0.5 mR/hr: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N			
Relinquished by: (Signature) 	Date: 09/22/21	Time: 1420	Received by: (Signature) 	Trip Blank Received: (Yes/No) 2 <input checked="" type="checkbox"/> HCL/MeOH TBR	Bottles Received: 2.4-1-2.3 30	If preservation required by Login: Date/Time	
Relinquished by: (Signature) 	Date:	Time:	Received by: (Signature) 	Date: 9/23/21	Time: 9:45	Hold:	Condition: NCF / OK

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
Total Solids	76.9		1	09/29/2021 08:39	WG1747741

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Lead	0.520	J	0.271	0.650	1	09/30/2021 02:34	WG1748287

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Gasoline Range Organics-NWTPH	45.6		1.40	4.13	25	09/29/2021 21:09	WG1748296
(S) a,a,a-Trifluorotoluene(FID)	83.1			77.0-120		09/29/2021 21:09	WG1748296

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Benzene	U		0.000771	0.00165	1	09/26/2021 01:32	WG1746485
Toluene	0.00248	J	0.00215	0.00826	1	09/26/2021 01:32	WG1746485
Ethylbenzene	0.0136		0.00122	0.00413	1	09/26/2021 01:32	WG1746485
Total Xylenes	0.00182	J	0.00145	0.0107	1	09/26/2021 01:32	WG1746485
Methyl tert-butyl ether	U		0.000578	0.00165	1	09/26/2021 01:32	WG1746485
(S) Toluene-d8	112			75.0-131		09/26/2021 01:32	WG1746485
(S) 4-Bromofluorobenzene	98.3			67.0-138		09/26/2021 01:32	WG1746485
(S) 1,2-Dichloroethane-d4	118			70.0-130		09/26/2021 01:32	WG1746485

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Diesel Range Organics (DRO)	3.46	J	1.73	5.20	1	10/01/2021 12:35	WG1749435
Residual Range Organics (RRO)	U		4.33	13.0	1	10/01/2021 12:35	WG1749435
(S) o-Terphenyl	48.5			18.0-148		10/01/2021 12:35	WG1749435



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
Total Solids	76.9		1	09/29/2021 08:39	WG1747741

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Lead	3.49		0.271	0.650	1	09/30/2021 02:37	WG1748287

Volatile Organic Compounds (GC) by Method NWTPHGX

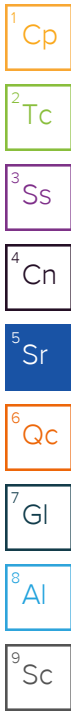
Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Gasoline Range Organics-NWTPH	3.94	J	1.39	4.09	25	09/30/2021 00:17	WG1748298
(S) a,a,a-Trifluorotoluene(FID)	89.2			77.0-120		09/30/2021 00:17	WG1748298

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Benzene	0.00185		0.000764	0.00164	1	09/26/2021 01:51	WG1746485
Toluene	0.00465	J	0.00213	0.00818	1	09/26/2021 01:51	WG1746485
Ethylbenzene	0.00433		0.00121	0.00409	1	09/26/2021 01:51	WG1746485
Total Xylenes	0.0175		0.00144	0.0106	1	09/26/2021 01:51	WG1746485
Methyl tert-butyl ether	U		0.000573	0.00164	1	09/26/2021 01:51	WG1746485
(S) Toluene-d8	110			75.0-131		09/26/2021 01:51	WG1746485
(S) 4-Bromofluorobenzene	99.1			67.0-138		09/26/2021 01:51	WG1746485
(S) 1,2-Dichloroethane-d4	117			70.0-130		09/26/2021 01:51	WG1746485

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Diesel Range Organics (DRO)	U UJ	J6	1.73	5.20	1	10/01/2021 12:47	WG1749435
Residual Range Organics (RRO)	U		4.33	13.0	1	10/01/2021 12:47	WG1749435
(S) o-Terphenyl	26.5			18.0-148		10/01/2021 12:47	WG1749435



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
Total Solids	68.6		1	09/29/2021 08:39	WG1747741

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Lead	6.69		0.303	0.729	1	09/30/2021 02:39	WG1748287

Volatile Organic Compounds (GC) by Method NWTPHGX

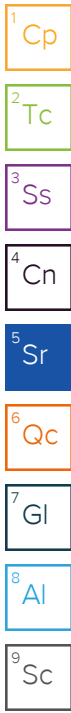
Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Gasoline Range Organics-NWTPH	4.68	J	1.70	5.00	25	09/30/2021 00:39	WG1748298
(S) a,a,a-Trifluorotoluene(FID)	95.1			77.0-120		09/30/2021 00:39	WG1748298

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Benzene	0.00502		0.000934	0.00200	1	09/26/2021 02:10	WG1746485
Toluene	0.00298	J	0.00260	0.0100	1	09/26/2021 02:10	WG1746485
Ethylbenzene	0.0238		0.00147	0.00500	1	09/26/2021 02:10	WG1746485
Total Xylenes	0.0554		0.00176	0.0130	1	09/26/2021 02:10	WG1746485
Methyl tert-butyl ether	U		0.000700	0.00200	1	09/26/2021 02:10	WG1746485
(S) Toluene-d8	109			75.0-131		09/26/2021 02:10	WG1746485
(S) 4-Bromofluorobenzene	97.2			67.0-138		09/26/2021 02:10	WG1746485
(S) 1,2-Dichloroethane-d4	114			70.0-130		09/26/2021 02:10	WG1746485

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Diesel Range Organics (DRO)	U		1.94	5.83	1	10/01/2021 11:00	WG1749435
Residual Range Organics (RRO)	U		4.86	14.6	1	10/01/2021 11:00	WG1749435
(S) o-Terphenyl	28.8			18.0-148		10/01/2021 11:00	WG1749435



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
Total Solids	75.0		1	09/29/2021 08:28	WG1747742

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Lead	3.56		0.277	0.666	1	09/30/2021 02:47	WG1748287

Volatile Organic Compounds (GC) by Method NWTPHGX

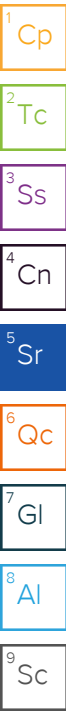
Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Gasoline Range Organics-NWTPH	U		1.46	4.31	25	09/30/2021 01:15	WG1748298
(S) a,a,a-Trifluorotoluene(FID)	91.8			77.0-120		09/30/2021 01:15	WG1748298

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Benzene	U		0.000806	0.00173	1	09/26/2021 02:29	WG1746485
Toluene	U		0.00224	0.00863	1	09/26/2021 02:29	WG1746485
Ethylbenzene	U		0.00127	0.00431	1	09/26/2021 02:29	WG1746485
Total Xylenes	U		0.00152	0.0112	1	09/26/2021 02:29	WG1746485
Methyl tert-butyl ether	U		0.000604	0.00173	1	09/26/2021 02:29	WG1746485
(S) Toluene-d8	109			75.0-131		09/26/2021 02:29	WG1746485
(S) 4-Bromofluorobenzene	97.8			67.0-138		09/26/2021 02:29	WG1746485
(S) 1,2-Dichloroethane-d4	115			70.0-130		09/26/2021 02:29	WG1746485

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Diesel Range Organics (DRO)	U		1.77	5.33	1	10/01/2021 11:14	WG1749435
Residual Range Organics (RRO)	U		4.44	13.3	1	10/01/2021 11:14	WG1749435
(S) o-Terphenyl	45.2			18.0-148		10/01/2021 11:14	WG1749435



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
Total Solids	85.9		1	09/29/2021 08:28	WG1747742

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Lead	4.02		0.242	0.582	1	09/30/2021 02:50	WG1748287

Volatile Organic Compounds (GC) by Method NWTPHGX

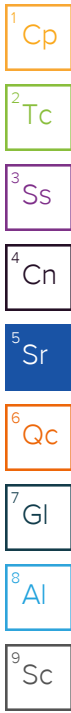
Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Gasoline Range Organics-NWTPH	65.8		1.15	3.39	25	09/30/2021 01:37	WG1748298
(S) a,a,a-Trifluorotoluene(FID)	92.4			77.0-120		09/30/2021 01:37	WG1748298

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Benzene	U		0.000632	0.00135	1	09/26/2021 02:48	WG1746485
Toluene	0.00306	J	0.00176	0.00677	1	09/26/2021 02:48	WG1746485
Ethylbenzene	0.00349		0.000998	0.00339	1	09/26/2021 02:48	WG1746485
Total Xylenes	0.0105		0.00119	0.00880	1	09/26/2021 02:48	WG1746485
Methyl tert-butyl ether	U		0.000474	0.00135	1	09/26/2021 02:48	WG1746485
(S) Toluene-d8	113			75.0-131		09/26/2021 02:48	WG1746485
(S) 4-Bromofluorobenzene	127			67.0-138		09/26/2021 02:48	WG1746485
(S) 1,2-Dichloroethane-d4	114			70.0-130		09/26/2021 02:48	WG1746485

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Diesel Range Organics (DRO)	78.8		1.55	4.66	1	10/01/2021 13:28	WG1749435
Residual Range Organics (RRO)	5.68	J	3.88	11.6	1	10/01/2021 13:28	WG1749435
(S) o-Terphenyl	59.2			18.0-148		10/01/2021 13:28	WG1749435



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
Total Solids	76.7		1	09/29/2021 08:28	WG1747742

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Lead	0.472	J	0.271	0.652	1	09/30/2021 02:52	WG1748287

Volatile Organic Compounds (GC) by Method NWTPHGX

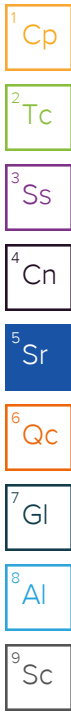
Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Gasoline Range Organics-NWTPH	2.19	J	1.37	4.05	25	09/30/2021 01:59	WG1748298
(S) a,a,a-Trifluorotoluene(FID)	92.8			77.0-120		09/30/2021 01:59	WG1748298

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Benzene	U		0.000756	0.00162	1	09/26/2021 03:07	WG1746485
Toluene	U		0.00211	0.00810	1	09/26/2021 03:07	WG1746485
Ethylbenzene	U		0.00119	0.00405	1	09/26/2021 03:07	WG1746485
Total Xylenes	0.00311	J	0.00142	0.0105	1	09/26/2021 03:07	WG1746485
Methyl tert-butyl ether	U		0.000567	0.00162	1	09/26/2021 03:07	WG1746485
(S) Toluene-d8	111			75.0-131		09/26/2021 03:07	WG1746485
(S) 4-Bromofluorobenzene	98.1			67.0-138		09/26/2021 03:07	WG1746485
(S) 1,2-Dichloroethane-d4	116			70.0-130		09/26/2021 03:07	WG1746485

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Diesel Range Organics (DRO)	U		1.73	5.22	1	10/01/2021 11:27	WG1749435
Residual Range Organics (RRO)	U		4.34	13.0	1	10/01/2021 11:27	WG1749435
(S) o-Terphenyl	46.2			18.0-148		10/01/2021 11:27	WG1749435



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
Total Solids	87.7		1	09/29/2021 08:28	WG1747742

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Lead	11.5		0.237	0.570	1	09/30/2021 02:55	WG1748287

Volatile Organic Compounds (GC) by Method NWTPHGX

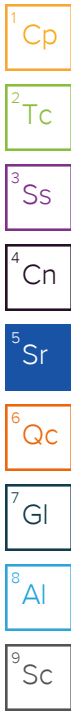
Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Gasoline Range Organics-NWTPH	18.3		1.13	3.32	25	09/30/2021 02:21	WG1748298
(S) a,a,a-Trifluorotoluene(FID)	95.2			77.0-120		09/30/2021 02:21	WG1748298

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Benzene	0.00210		0.000620	0.00133	1	09/25/2021 14:29	WG1746532
Toluene	0.00557	J	0.00172	0.00663	1	09/25/2021 14:29	WG1746532
Ethylbenzene	0.00257	J	0.000978	0.00332	1	09/25/2021 14:29	WG1746532
Total Xylenes	0.0226		0.00117	0.00862	1	09/25/2021 14:29	WG1746532
Methyl tert-butyl ether	U		0.000464	0.00133	1	09/25/2021 14:29	WG1746532
(S) Toluene-d8	98.6			75.0-131		09/25/2021 14:29	WG1746532
(S) 4-Bromofluorobenzene	108			67.0-138		09/25/2021 14:29	WG1746532
(S) 1,2-Dichloroethane-d4	97.7			70.0-130		09/25/2021 14:29	WG1746532

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Diesel Range Organics (DRO)	119		1.52	4.56	1	10/01/2021 14:09	WG1749435
Residual Range Organics (RRO)	24.5		3.80	11.4	1	10/01/2021 14:09	WG1749435
(S) o-Terphenyl	45.5			18.0-148		10/01/2021 14:09	WG1749435



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
Total Solids	89.5		1	09/29/2021 08:28	WG1747742

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Lead	8.99		0.232	0.559	1	09/30/2021 02:58	WG1748287

Volatile Organic Compounds (GC) by Method NWTPHGX

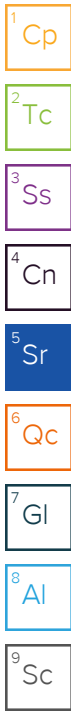
Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Gasoline Range Organics-NWTPH	64.4		1.07	3.16	25	09/30/2021 02:43	WG1748298
(S) a,a,a-Trifluorotoluene(FID)	94.9			77.0-120		09/30/2021 02:43	WG1748298

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Benzene	0.0254		0.000590	0.00126	1	09/25/2021 14:50	WG1746532
Toluene	0.0298		0.00164	0.00632	1	09/25/2021 14:50	WG1746532
Ethylbenzene	0.0108		0.000931	0.00316	1	09/25/2021 14:50	WG1746532
Total Xylenes	0.0585		0.00111	0.00821	1	09/25/2021 14:50	WG1746532
Methyl tert-butyl ether	U		0.000442	0.00126	1	09/25/2021 14:50	WG1746532
(S) Toluene-d8	98.4			75.0-131		09/25/2021 14:50	WG1746532
(S) 4-Bromofluorobenzene	119			67.0-138		09/25/2021 14:50	WG1746532
(S) 1,2-Dichloroethane-d4	97.5			70.0-130		09/25/2021 14:50	WG1746532

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Diesel Range Organics (DRO)	208		1.49	4.47	1	10/01/2021 14:22	WG1749435
Residual Range Organics (RRO)	38.9		3.72	11.2	1	10/01/2021 14:22	WG1749435
(S) o-Terphenyl	41.5			18.0-148		10/01/2021 14:22	WG1749435



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
Total Solids	74.5		1	09/29/2021 08:28	WG1747742

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Lead	0.490	J	0.279	0.671	1	09/30/2021 03:00	WG1748287

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Gasoline Range Organics-NWTPH	U		1.48	4.36	25	09/30/2021 21:27	WG1748303
(S) a,a,a-Trifluorotoluene(FID)	113			77.0-120		09/30/2021 21:27	WG1748303

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Benzene	U		0.000814	0.00174	1	09/25/2021 15:10	WG1746532
Toluene	U		0.00227	0.00872	1	09/25/2021 15:10	WG1746532
Ethylbenzene	U		0.00128	0.00436	1	09/25/2021 15:10	WG1746532
Total Xylenes	0.00188	J	0.00153	0.0113	1	09/25/2021 15:10	WG1746532
Methyl tert-butyl ether	U		0.000610	0.00174	1	09/25/2021 15:10	WG1746532
(S) Toluene-d8	98.8			75.0-131		09/25/2021 15:10	WG1746532
(S) 4-Bromofluorobenzene	100			67.0-138		09/25/2021 15:10	WG1746532
(S) 1,2-Dichloroethane-d4	90.6			70.0-130		09/25/2021 15:10	WG1746532

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Diesel Range Organics (DRO)	3.15	J	1.78	5.37	1	10/01/2021 13:41	WG1749435
Residual Range Organics (RRO)	9.27	J	4.47	13.4	1	10/01/2021 13:41	WG1749435
(S) o-Terphenyl	41.9			18.0-148		10/01/2021 13:41	WG1749435



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
Total Solids	77.3		1	09/29/2021 08:28	WG1747742

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Lead	10.7		0.269	0.647	1	09/30/2021 03:03	WG1748287

Volatile Organic Compounds (GC) by Method NWTPHGX

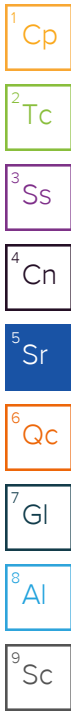
Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Gasoline Range Organics-NWTPH	U		1.42	4.18	25	09/30/2021 21:48	WG1748303
(S) a,a,a-Trifluorotoluene(FID)	114			77.0-120		09/30/2021 21:48	WG1748303

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Benzene	U		0.000780	0.00167	1	09/25/2021 15:30	WG1746532
Toluene	U		0.00217	0.00835	1	09/25/2021 15:30	WG1746532
Ethylbenzene	U		0.00123	0.00418	1	09/25/2021 15:30	WG1746532
Total Xylenes	U		0.00147	0.0109	1	09/25/2021 15:30	WG1746532
Methyl tert-butyl ether	U		0.000585	0.00167	1	09/25/2021 15:30	WG1746532
(S) Toluene-d8	103			75.0-131		09/25/2021 15:30	WG1746532
(S) 4-Bromofluorobenzene	103			67.0-138		09/25/2021 15:30	WG1746532
(S) 1,2-Dichloroethane-d4	95.1			70.0-130		09/25/2021 15:30	WG1746532

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Diesel Range Organics (DRO)	2.17	J	1.72	5.18	1	10/01/2021 13:55	WG1749435
Residual Range Organics (RRO)	8.67	J	4.31	12.9	1	10/01/2021 13:55	WG1749435
(S) o-Terphenyl	38.2			18.0-148		10/01/2021 13:55	WG1749435



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
Total Solids	72.8		1	09/29/2021 08:28	WG1747742

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Lead	4.80		0.286	0.687	1	09/30/2021 03:05	WG1748287

Volatile Organic Compounds (GC) by Method NWTPHGX

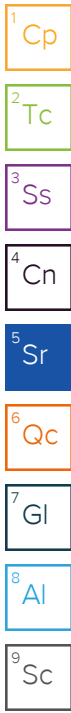
Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Gasoline Range Organics-NWTPH	U		1.55	4.56	25	09/30/2021 22:10	WG1748303
(S) a,a,a-Trifluorotoluene(FID)	114			77.0-120		09/30/2021 22:10	WG1748303

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Benzene	U		0.000852	0.00182	1	09/25/2021 15:51	WG1746532
Toluene	U		0.00237	0.00912	1	09/25/2021 15:51	WG1746532
Ethylbenzene	U		0.00134	0.00456	1	09/25/2021 15:51	WG1746532
Total Xylenes	U		0.00161	0.0119	1	09/25/2021 15:51	WG1746532
Methyl tert-butyl ether	U		0.000638	0.00182	1	09/25/2021 15:51	WG1746532
(S) Toluene-d8	97.7			75.0-131		09/25/2021 15:51	WG1746532
(S) 4-Bromofluorobenzene	101			67.0-138		09/25/2021 15:51	WG1746532
(S) 1,2-Dichloroethane-d4	96.1			70.0-130		09/25/2021 15:51	WG1746532

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Diesel Range Organics (DRO)	U		1.83	5.49	1	10/01/2021 11:41	WG1749435
Residual Range Organics (RRO)	U		4.57	13.7	1	10/01/2021 11:41	WG1749435
(S) o-Terphenyl	40.1			18.0-148		10/01/2021 11:41	WG1749435



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
Total Solids	75.9		1	09/29/2021 08:28	WG1747742

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Lead	0.514	J	0.274	0.659	1	09/30/2021 03:08	WG1748287

Volatile Organic Compounds (GC) by Method NWTPHGX

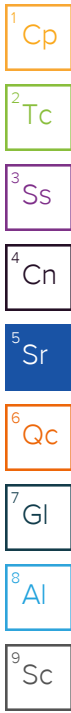
Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Gasoline Range Organics-NWTPH	1.73	J	1.41	4.15	25	09/30/2021 22:31	WG1748303
(S) a,a,a-Trifluorotoluene(FID)	114			77.0-120		09/30/2021 22:31	WG1748303

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Benzene	0.00108	J	0.000775	0.00166	1	09/25/2021 16:11	WG1746532
Toluene	U		0.00216	0.00830	1	09/25/2021 16:11	WG1746532
Ethylbenzene	U		0.00122	0.00415	1	09/25/2021 16:11	WG1746532
Total Xylenes	0.00242	J	0.00146	0.0108	1	09/25/2021 16:11	WG1746532
Methyl tert-butyl ether	U		0.000581	0.00166	1	09/25/2021 16:11	WG1746532
(S) Toluene-d8	97.6			75.0-131		09/25/2021 16:11	WG1746532
(S) 4-Bromofluorobenzene	102			67.0-138		09/25/2021 16:11	WG1746532
(S) 1,2-Dichloroethane-d4	93.4			70.0-130		09/25/2021 16:11	WG1746532

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Diesel Range Organics (DRO)	U		1.75	5.27	1	10/01/2021 11:54	WG1749435
Residual Range Organics (RRO)	U		4.39	13.2	1	10/01/2021 11:54	WG1749435
(S) o-Terphenyl	43.2			18.0-148		10/01/2021 11:54	WG1749435



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
Total Solids	71.3		1	09/29/2021 08:28	WG1747742

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Lead	4.32		0.292	0.701	1	09/30/2021 03:10	WG1748287

Volatile Organic Compounds (GC) by Method NWTPHGX

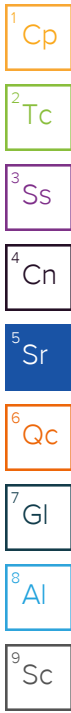
Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Gasoline Range Organics-NWTPH	2.06	J	1.62	4.77	25	09/30/2021 23:55	WG1748303
(S) a,a,a-Trifluorotoluene(FID)	114			77.0-120		09/30/2021 23:55	WG1748303

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Benzene	0.0195		0.000891	0.00191	1	09/25/2021 16:32	WG1746532
Toluene	0.00339	J	0.00248	0.00954	1	09/25/2021 16:32	WG1746532
Ethylbenzene	0.0119		0.00141	0.00477	1	09/25/2021 16:32	WG1746532
Total Xylenes	0.0149		0.00168	0.0124	1	09/25/2021 16:32	WG1746532
Methyl tert-butyl ether	U		0.000667	0.00191	1	09/25/2021 16:32	WG1746532
(S) Toluene-d8	95.2			75.0-131		09/25/2021 16:32	WG1746532
(S) 4-Bromofluorobenzene	99.3			67.0-138		09/25/2021 16:32	WG1746532
(S) 1,2-Dichloroethane-d4	93.6			70.0-130		09/25/2021 16:32	WG1746532

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Diesel Range Organics (DRO)	2.23	J	1.86	5.61	1	10/01/2021 12:22	WG1749435
Residual Range Organics (RRO)	7.60	J	4.67	14.0	1	10/01/2021 12:22	WG1749435
(S) o-Terphenyl	43.1			18.0-148		10/01/2021 12:22	WG1749435



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
Total Solids	77.3		1	09/29/2021 08:20	WG1747743

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Lead	U		0.269	0.646	1	09/30/2021 02:22	WG1748287

Volatile Organic Compounds (GC) by Method NWTPHGX

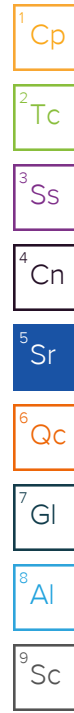
Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Gasoline Range Organics-NWTPH	467		13.7	40.3	250	10/02/2021 04:19	WG1750220
(S) a,a,a-Trifluorotoluene(FID)	112			77.0-120		10/02/2021 04:19	WG1750220

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Benzene	U		0.000752	0.00161	1	09/25/2021 16:53	WG1746532
Toluene	0.00379	J	0.00209	0.00805	1	09/25/2021 16:53	WG1746532
Ethylbenzene	U		0.00119	0.00403	1	09/25/2021 16:53	WG1746532
Total Xylenes	U		0.00142	0.0105	1	09/25/2021 16:53	WG1746532
Methyl tert-butyl ether	U		0.000564	0.00161	1	09/25/2021 16:53	WG1746532
(S) Toluene-d8	87.4			75.0-131		09/25/2021 16:53	WG1746532
(S) 4-Bromofluorobenzene	210	J1		67.0-138		09/25/2021 16:53	WG1746532
(S) 1,2-Dichloroethane-d4	92.7			70.0-130		09/25/2021 16:53	WG1746532

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Diesel Range Organics (DRO)	604	D	3.44	10.3	2	10/01/2021 15:12	WG1749435
Residual Range Organics (RRO)	U		4.31	12.9	1	10/01/2021 12:08	WG1749435
(S) o-Terphenyl	78.7			18.0-148		10/01/2021 15:12	WG1749435
(S) o-Terphenyl	30.5			18.0-148		10/01/2021 12:08	WG1749435



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
Total Solids	80.1		1	09/29/2021 08:20	WG1747743

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Lead	3.89		0.260	0.624	1	09/30/2021 03:18	WG1748287

Volatile Organic Compounds (GC) by Method NWTPHGX

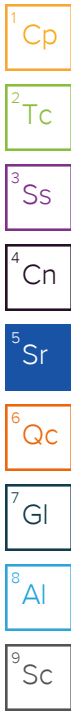
Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Gasoline Range Organics-NWTPH	U		1.31	3.86	25	10/02/2021 03:21	WG1750220
(S) a,a,a-Trifluorotoluene(FID)	113			77.0-120		10/02/2021 03:21	WG1750220

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Benzene	U		0.000721	0.00154	1	09/25/2021 17:13	WG1746532
Toluene	U		0.00201	0.00772	1	09/25/2021 17:13	WG1746532
Ethylbenzene	U		0.00114	0.00386	1	09/25/2021 17:13	WG1746532
Total Xylenes	U		0.00136	0.0100	1	09/25/2021 17:13	WG1746532
Methyl tert-butyl ether	U		0.000540	0.00154	1	09/25/2021 17:13	WG1746532
(S) Toluene-d8	98.4			75.0-131		09/25/2021 17:13	WG1746532
(S) 4-Bromofluorobenzene	105			67.0-138		09/25/2021 17:13	WG1746532
(S) 1,2-Dichloroethane-d4	93.9			70.0-130		09/25/2021 17:13	WG1746532

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Diesel Range Organics (DRO)	9.60		1.66	4.99	1	10/01/2021 14:36	WG1749435
Residual Range Organics (RRO)	36.4		4.15	12.5	1	10/01/2021 14:36	WG1749435
(S) o-Terphenyl	45.0			18.0-148		10/01/2021 14:36	WG1749435



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
Total Solids	79.6		1	09/29/2021 08:20	WG1747743

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Lead	2.85		0.261	0.628	1	09/30/2021 03:21	WG1748287

Volatile Organic Compounds (GC) by Method NWTPHGX

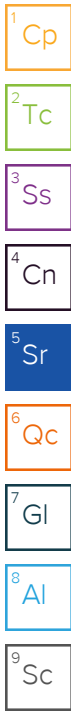
Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Gasoline Range Organics-NWTPH	U		1.33	3.92	25	10/01/2021 01:49	WG1748303
(S) a,a,a-Trifluorotoluene(FID)	113			77.0-120		10/01/2021 01:49	WG1748303

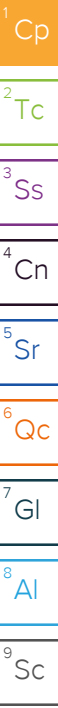
Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Benzene	U		0.000732	0.00157	1	09/25/2021 17:34	WG1746532
Toluene	U		0.00204	0.00784	1	09/25/2021 17:34	WG1746532
Ethylbenzene	U		0.00116	0.00392	1	09/25/2021 17:34	WG1746532
Total Xylenes	U		0.00138	0.0102	1	09/25/2021 17:34	WG1746532
Methyl tert-butyl ether	U		0.000549	0.00157	1	09/25/2021 17:34	WG1746532
(S) Toluene-d8	98.9			75.0-131		09/25/2021 17:34	WG1746532
(S) 4-Bromofluorobenzene	102			67.0-138		09/25/2021 17:34	WG1746532
(S) 1,2-Dichloroethane-d4	96.2			70.0-130		09/25/2021 17:34	WG1746532

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Diesel Range Organics (DRO)	10.5		1.67	5.02	1	10/01/2021 14:50	WG1749435
Residual Range Organics (RRO)	28.1		4.18	12.6	1	10/01/2021 14:50	WG1749435
(S) o-Terphenyl	45.5			18.0-148		10/01/2021 14:50	WG1749435

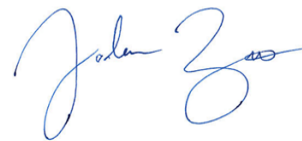




Arcadis - Chevron - WA

Sample Delivery Group: L1408057
Samples Received: 09/23/2021
Project Number: 30064310 07.21-Plan
Description: 97502
Site: 640 METCALF ST SEDRO-WOOLLEY
Report To: Ada Hamilton/Alex Laws
1100 Olive Way
Suite 800
Seattle, WA 98101

Entire Report Reviewed By:



Jordan N Zito
Project Manager

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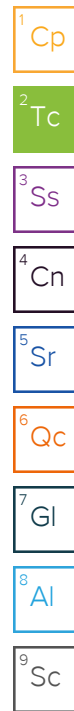


Pace Analytical National

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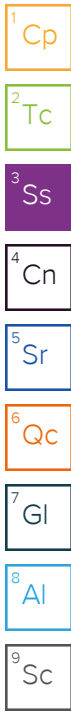


SAMPLE SUMMARY

SB-2-10.5-11.5_210922 L1408057-01 Solid

Collected by M. Andrews Collected date/time 09/22/21 09:05 Received date/time 09/23/21 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1747741	1	09/29/21 08:31	09/29/21 08:39	CMK	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1748287	1	09/29/21 13:45	09/30/21 02:34	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1748296	25	09/24/21 22:51	09/29/21 21:09	MGF	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1746485	1	09/24/21 22:51	09/26/21 01:32	JAH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1749435	1	09/30/21 17:20	10/01/21 12:35	JAS	Mt. Juliet, TN



SB-2-15.5-16.5_210922 L1408057-02 Solid

Collected by M. Andrews Collected date/time 09/22/21 09:09 Received date/time 09/23/21 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1747741	1	09/29/21 08:31	09/29/21 08:39	CMK	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1748287	1	09/29/21 13:45	09/30/21 02:37	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1748298	25	09/24/21 22:51	09/30/21 00:17	MGF	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1746485	1	09/24/21 22:51	09/26/21 01:51	JAH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1749435	1	09/30/21 17:20	10/01/21 12:47	JAS	Mt. Juliet, TN

SB-2-18.0-19.0_210922 L1408057-03 Solid

Collected by M. Andrews Collected date/time 09/22/21 09:14 Received date/time 09/23/21 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1747741	1	09/29/21 08:31	09/29/21 08:39	CMK	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1748287	1	09/29/21 13:45	09/30/21 02:39	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1748298	25	09/24/21 22:51	09/30/21 00:39	MGF	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1746485	1	09/24/21 22:51	09/26/21 02:10	JAH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1749435	1	09/30/21 17:20	10/01/21 11:00	JAS	Mt. Juliet, TN

SB-2-6.0-7.0_210922 L1408057-04 Solid

Collected by M. Andrews Collected date/time 09/22/21 09:03 Received date/time 09/23/21 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1747742	1	09/29/21 08:21	09/29/21 08:28	CMK	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1748287	1	09/29/21 13:45	09/30/21 02:47	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1748298	25	09/24/21 22:51	09/30/21 01:15	MGF	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1746485	1	09/24/21 22:51	09/26/21 02:29	JAH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1749435	1	09/30/21 17:20	10/01/21 11:14	JAS	Mt. Juliet, TN

MW-21-11.5-12.5_210921 L1408057-05 Solid

Collected by M. Andrews Collected date/time 09/21/21 16:20 Received date/time 09/23/21 09:45

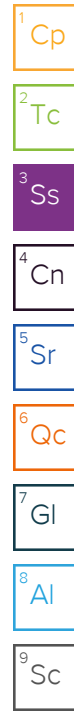
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1747742	1	09/29/21 08:21	09/29/21 08:28	CMK	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1748287	1	09/29/21 13:45	09/30/21 02:50	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1748298	25	09/24/21 22:51	09/30/21 01:37	MGF	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1746485	1	09/24/21 22:51	09/26/21 02:48	JAH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1749435	1	09/30/21 17:20	10/01/21 13:28	JAS	Mt. Juliet, TN

SAMPLE SUMMARY

MW-21-14.0-15.0_210921 L1408057-06 Solid

Collected by M. Andrews Collected date/time 09/21/21 14:25 Received date/time 09/23/21 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1747742	1	09/29/21 08:21	09/29/21 08:28	CMK	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1748287	1	09/29/21 13:45	09/30/21 02:52	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1748298	25	09/24/21 22:51	09/30/21 01:59	MGF	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1746485	1	09/24/21 22:51	09/26/21 03:07	JAH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1749435	1	09/30/21 17:20	10/01/21 11:27	JAS	Mt. Juliet, TN



MW-21-9.0-10.0_210921 L1408057-07 Solid

Collected by M. Andrews Collected date/time 09/21/21 16:15 Received date/time 09/23/21 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1747742	1	09/29/21 08:21	09/29/21 08:28	CMK	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1748287	1	09/29/21 13:45	09/30/21 02:55	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1748298	25	09/24/21 22:51	09/30/21 02:21	MGF	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1746532	1	09/24/21 22:51	09/25/21 14:29	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1749435	1	09/30/21 17:20	10/01/21 14:09	JAS	Mt. Juliet, TN

MW-21-2.5-3.5_210920 L1408057-08 Solid

Collected by M. Andrews Collected date/time 09/20/21 14:36 Received date/time 09/23/21 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1747742	1	09/29/21 08:21	09/29/21 08:28	CMK	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1748287	1	09/29/21 13:45	09/30/21 02:58	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1748298	25	09/24/21 22:51	09/30/21 02:43	MGF	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1746532	1	09/24/21 22:51	09/25/21 14:50	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1749435	1	09/30/21 17:20	10/01/21 14:22	JAS	Mt. Juliet, TN

MW-21-19.0-20.0_210921 L1408057-09 Solid

Collected by M. Andrews Collected date/time 09/21/21 14:30 Received date/time 09/23/21 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1747742	1	09/29/21 08:21	09/29/21 08:28	CMK	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1748287	1	09/29/21 13:45	09/30/21 03:00	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1748303	25	09/24/21 22:51	09/30/21 21:27	MGF	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1746532	1	09/24/21 22:51	09/25/21 15:10	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1749435	1	09/30/21 17:20	10/01/21 13:41	JAS	Mt. Juliet, TN

TRIP BLANK_210922 L1408057-10 GW

Collected by M. Andrews Collected date/time 09/22/21 00:00 Received date/time 09/23/21 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
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MW-20-7.0-8.0_210922 L1408057-11 Solid

Collected by M. Andrews Collected date/time 09/22/21 10:21 Received date/time 09/23/21 09:45

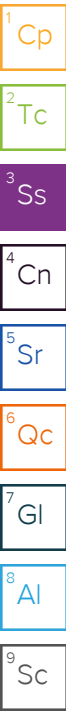
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1747742	1	09/29/21 08:21	09/29/21 08:28	CMK	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1748287	1	09/29/21 13:45	09/30/21 03:03	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1748303	25	09/24/21 22:51	09/30/21 21:48	MGF	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1746532	1	09/24/21 22:51	09/25/21 15:30	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1749435	1	09/30/21 17:20	10/01/21 13:55	JAS	Mt. Juliet, TN

SAMPLE SUMMARY

MW-15-6.5-7.5_210922 L1408057-12 Solid

Collected by M. Andrews Collected date/time 09/22/21 11:50 Received date/time 09/23/21 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1747742	1	09/29/21 08:21	09/29/21 08:28	CMK	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1748287	1	09/29/21 13:45	09/30/21 03:05	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1748303	25	09/24/21 22:51	09/30/21 22:10	MGF	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1746532	1	09/24/21 22:51	09/25/21 15:51	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1749435	1	09/30/21 17:20	10/01/21 11:41	JAS	Mt. Juliet, TN



MW-15-14.0-15.0_210921 L1408057-13 Solid

Collected by M. Andrews Collected date/time 09/21/21 12:10 Received date/time 09/23/21 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1747742	1	09/29/21 08:21	09/29/21 08:28	CMK	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1748287	1	09/29/21 13:45	09/30/21 03:08	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1748303	25	09/24/21 22:51	09/30/21 22:31	MGF	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1746532	1	09/24/21 22:51	09/25/21 16:11	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1749435	1	09/30/21 17:20	10/01/21 11:54	JAS	Mt. Juliet, TN

MW-15-19.0-20.0_210921 L1408057-14 Solid

Collected by M. Andrews Collected date/time 09/21/21 12:15 Received date/time 09/23/21 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1747742	1	09/29/21 08:21	09/29/21 08:28	CMK	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1748287	1	09/29/21 13:45	09/30/21 03:10	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1748303	25	09/24/21 22:51	09/30/21 23:55	MGF	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1746532	1	09/24/21 22:51	09/25/21 16:32	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1749435	1	09/30/21 17:20	10/01/21 12:22	JAS	Mt. Juliet, TN

MW-15-10.0-11.0_210921 L1408057-15 Solid

Collected by M. Andrews Collected date/time 09/21/21 12:00 Received date/time 09/23/21 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1747743	1	09/29/21 08:10	09/29/21 08:20	CMK	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1748287	1	09/29/21 13:45	09/30/21 02:22	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1750220	250	09/24/21 22:51	10/02/21 04:19	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1746532	1	09/24/21 22:51	09/25/21 16:53	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1749435	1	09/30/21 17:20	10/01/21 12:08	JAS	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1749435	2	09/30/21 17:20	10/01/21 15:12	JAS	Mt. Juliet, TN

DUP-1-092221_210922 L1408057-16 Solid

Collected by M. Andrews Collected date/time 09/22/21 00:00 Received date/time 09/23/21 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1747743	1	09/29/21 08:10	09/29/21 08:20	CMK	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1748287	1	09/29/21 13:45	09/30/21 03:18	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1750220	25	09/24/21 22:51	10/02/21 03:21	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1746532	1	09/24/21 22:51	09/25/21 17:13	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1749435	1	09/30/21 17:20	10/01/21 14:36	JAS	Mt. Juliet, TN

SAMPLE SUMMARY

MW-20-15.0-16.0_210922 L1408057-17 Solid

Collected by: M. Andrews
 Collected date/time: 09/22/21 10:25
 Received date/time: 09/23/21 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1747743	1	09/29/21 08:10	09/29/21 08:20	CMK	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1748287	1	09/29/21 13:45	09/30/21 03:21	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1748303	25	09/24/21 22:51	10/01/21 01:49	MGF	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1746532	1	09/24/21 22:51	09/25/21 17:34	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1749435	1	09/30/21 17:20	10/01/21 14:50	JAS	Mt. Juliet, TN

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Jordan N Zito
Project Manager

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
Total Solids	76.9		1	09/29/2021 08:39	WG1747741

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Lead	0.520	J	0.271	0.650	1	09/30/2021 02:34	WG1748287

Volatile Organic Compounds (GC) by Method NWTPHGX

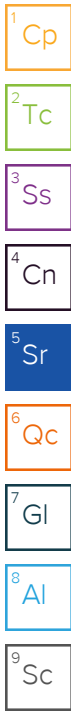
Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Gasoline Range Organics-NWTPH	45.6		1.40	4.13	25	09/29/2021 21:09	WG1748296
(S) a,a,a-Trifluorotoluene(FID)	83.1			77.0-120		09/29/2021 21:09	WG1748296

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Benzene	U		0.000771	0.00165	1	09/26/2021 01:32	WG1746485
Toluene	0.00248	J	0.00215	0.00826	1	09/26/2021 01:32	WG1746485
Ethylbenzene	0.0136		0.00122	0.00413	1	09/26/2021 01:32	WG1746485
Total Xylenes	0.00182	J	0.00145	0.0107	1	09/26/2021 01:32	WG1746485
Methyl tert-butyl ether	U		0.000578	0.00165	1	09/26/2021 01:32	WG1746485
(S) Toluene-d8	112			75.0-131		09/26/2021 01:32	WG1746485
(S) 4-Bromofluorobenzene	98.3			67.0-138		09/26/2021 01:32	WG1746485
(S) 1,2-Dichloroethane-d4	118			70.0-130		09/26/2021 01:32	WG1746485

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Diesel Range Organics (DRO)	3.46	J	1.73	5.20	1	10/01/2021 12:35	WG1749435
Residual Range Organics (RRO)	U		4.33	13.0	1	10/01/2021 12:35	WG1749435
(S) o-Terphenyl	48.5			18.0-148		10/01/2021 12:35	WG1749435



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
Total Solids	76.9		1	09/29/2021 08:39	WG1747741

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Lead	3.49		0.271	0.650	1	09/30/2021 02:37	WG1748287

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Gasoline Range Organics-NWTPH	3.94	J	1.39	4.09	25	09/30/2021 00:17	WG1748298
(S) a,a,a-Trifluorotoluene(FID)	89.2			77.0-120		09/30/2021 00:17	WG1748298

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Benzene	0.00185		0.000764	0.00164	1	09/26/2021 01:51	WG1746485
Toluene	0.00465	J	0.00213	0.00818	1	09/26/2021 01:51	WG1746485
Ethylbenzene	0.00433		0.00121	0.00409	1	09/26/2021 01:51	WG1746485
Total Xylenes	0.0175		0.00144	0.0106	1	09/26/2021 01:51	WG1746485
Methyl tert-butyl ether	U		0.000573	0.00164	1	09/26/2021 01:51	WG1746485
(S) Toluene-d8	110			75.0-131		09/26/2021 01:51	WG1746485
(S) 4-Bromofluorobenzene	99.1			67.0-138		09/26/2021 01:51	WG1746485
(S) 1,2-Dichloroethane-d4	117			70.0-130		09/26/2021 01:51	WG1746485

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Diesel Range Organics (DRO)	U	J6	1.73	5.20	1	10/01/2021 12:47	WG1749435
Residual Range Organics (RRO)	U		4.33	13.0	1	10/01/2021 12:47	WG1749435
(S) o-Terphenyl	26.5			18.0-148		10/01/2021 12:47	WG1749435



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
Total Solids	68.6		1	09/29/2021 08:39	WG1747741

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Lead	6.69		0.303	0.729	1	09/30/2021 02:39	WG1748287

Volatile Organic Compounds (GC) by Method NWTPHGX

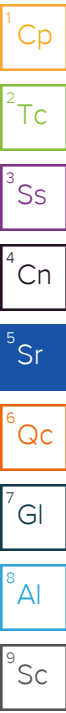
Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Gasoline Range Organics-NWTPH	4.68	J	1.70	5.00	25	09/30/2021 00:39	WG1748298
(S) a,a,a-Trifluorotoluene(FID)	95.1			77.0-120		09/30/2021 00:39	WG1748298

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Benzene	0.00502		0.000934	0.00200	1	09/26/2021 02:10	WG1746485
Toluene	0.00298	J	0.00260	0.0100	1	09/26/2021 02:10	WG1746485
Ethylbenzene	0.0238		0.00147	0.00500	1	09/26/2021 02:10	WG1746485
Total Xylenes	0.0554		0.00176	0.0130	1	09/26/2021 02:10	WG1746485
Methyl tert-butyl ether	U		0.000700	0.00200	1	09/26/2021 02:10	WG1746485
(S) Toluene-d8	109			75.0-131		09/26/2021 02:10	WG1746485
(S) 4-Bromofluorobenzene	97.2			67.0-138		09/26/2021 02:10	WG1746485
(S) 1,2-Dichloroethane-d4	114			70.0-130		09/26/2021 02:10	WG1746485

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Diesel Range Organics (DRO)	U		1.94	5.83	1	10/01/2021 11:00	WG1749435
Residual Range Organics (RRO)	U		4.86	14.6	1	10/01/2021 11:00	WG1749435
(S) o-Terphenyl	28.8			18.0-148		10/01/2021 11:00	WG1749435



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
Total Solids	75.0		1	09/29/2021 08:28	WG1747742

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Lead	3.56		0.277	0.666	1	09/30/2021 02:47	WG1748287

Volatile Organic Compounds (GC) by Method NWTPHGX

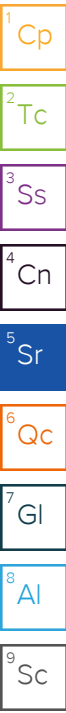
Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Gasoline Range Organics-NWTPH	U		1.46	4.31	25	09/30/2021 01:15	WG1748298
(S) a,a,a-Trifluorotoluene(FID)	91.8			77.0-120		09/30/2021 01:15	WG1748298

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Benzene	U		0.000806	0.00173	1	09/26/2021 02:29	WG1746485
Toluene	U		0.00224	0.00863	1	09/26/2021 02:29	WG1746485
Ethylbenzene	U		0.00127	0.00431	1	09/26/2021 02:29	WG1746485
Total Xylenes	U		0.00152	0.0112	1	09/26/2021 02:29	WG1746485
Methyl tert-butyl ether	U		0.000604	0.00173	1	09/26/2021 02:29	WG1746485
(S) Toluene-d8	109			75.0-131		09/26/2021 02:29	WG1746485
(S) 4-Bromofluorobenzene	97.8			67.0-138		09/26/2021 02:29	WG1746485
(S) 1,2-Dichloroethane-d4	115			70.0-130		09/26/2021 02:29	WG1746485

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Diesel Range Organics (DRO)	U		1.77	5.33	1	10/01/2021 11:14	WG1749435
Residual Range Organics (RRO)	U		4.44	13.3	1	10/01/2021 11:14	WG1749435
(S) o-Terphenyl	45.2			18.0-148		10/01/2021 11:14	WG1749435



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
Total Solids	85.9		1	09/29/2021 08:28	WG1747742

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Lead	4.02		0.242	0.582	1	09/30/2021 02:50	WG1748287

Volatile Organic Compounds (GC) by Method NWTPHGX

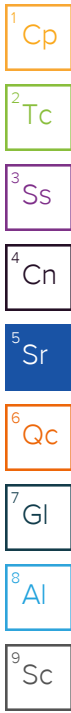
Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Gasoline Range Organics-NWTPH	65.8		1.15	3.39	25	09/30/2021 01:37	WG1748298
(S) a,a,a-Trifluorotoluene(FID)	92.4			77.0-120		09/30/2021 01:37	WG1748298

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Benzene	U		0.000632	0.00135	1	09/26/2021 02:48	WG1746485
Toluene	0.00306	J	0.00176	0.00677	1	09/26/2021 02:48	WG1746485
Ethylbenzene	0.00349		0.000998	0.00339	1	09/26/2021 02:48	WG1746485
Total Xylenes	0.0105		0.00119	0.00880	1	09/26/2021 02:48	WG1746485
Methyl tert-butyl ether	U		0.000474	0.00135	1	09/26/2021 02:48	WG1746485
(S) Toluene-d8	113			75.0-131		09/26/2021 02:48	WG1746485
(S) 4-Bromofluorobenzene	127			67.0-138		09/26/2021 02:48	WG1746485
(S) 1,2-Dichloroethane-d4	114			70.0-130		09/26/2021 02:48	WG1746485

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Diesel Range Organics (DRO)	78.8		1.55	4.66	1	10/01/2021 13:28	WG1749435
Residual Range Organics (RRO)	5.68	J	3.88	11.6	1	10/01/2021 13:28	WG1749435
(S) o-Terphenyl	59.2			18.0-148		10/01/2021 13:28	WG1749435



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
Total Solids	76.7		1	09/29/2021 08:28	WG1747742

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Lead	0.472	J	0.271	0.652	1	09/30/2021 02:52	WG1748287

Volatile Organic Compounds (GC) by Method NWTPHGX

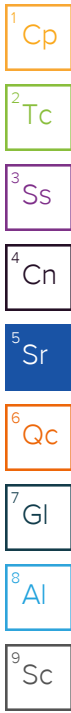
Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Gasoline Range Organics-NWTPH	2.19	J	1.37	4.05	25	09/30/2021 01:59	WG1748298
(S) a,a,a-Trifluorotoluene(FID)	92.8			77.0-120		09/30/2021 01:59	WG1748298

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Benzene	U		0.000756	0.00162	1	09/26/2021 03:07	WG1746485
Toluene	U		0.00211	0.00810	1	09/26/2021 03:07	WG1746485
Ethylbenzene	U		0.00119	0.00405	1	09/26/2021 03:07	WG1746485
Total Xylenes	0.00311	J	0.00142	0.0105	1	09/26/2021 03:07	WG1746485
Methyl tert-butyl ether	U		0.000567	0.00162	1	09/26/2021 03:07	WG1746485
(S) Toluene-d8	111			75.0-131		09/26/2021 03:07	WG1746485
(S) 4-Bromofluorobenzene	98.1			67.0-138		09/26/2021 03:07	WG1746485
(S) 1,2-Dichloroethane-d4	116			70.0-130		09/26/2021 03:07	WG1746485

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Diesel Range Organics (DRO)	U		1.73	5.22	1	10/01/2021 11:27	WG1749435
Residual Range Organics (RRO)	U		4.34	13.0	1	10/01/2021 11:27	WG1749435
(S) o-Terphenyl	46.2			18.0-148		10/01/2021 11:27	WG1749435



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
Total Solids	87.7		1	09/29/2021 08:28	WG1747742

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Lead	11.5		0.237	0.570	1	09/30/2021 02:55	WG1748287

Volatile Organic Compounds (GC) by Method NWTPHGX

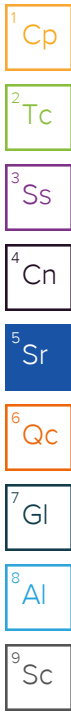
Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Gasoline Range Organics-NWTPH	18.3		1.13	3.32	25	09/30/2021 02:21	WG1748298
(S) a,a,a-Trifluorotoluene(FID)	95.2			77.0-120		09/30/2021 02:21	WG1748298

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Benzene	0.00210		0.000620	0.00133	1	09/25/2021 14:29	WG1746532
Toluene	0.00557	J	0.00172	0.00663	1	09/25/2021 14:29	WG1746532
Ethylbenzene	0.00257	J	0.000978	0.00332	1	09/25/2021 14:29	WG1746532
Total Xylenes	0.0226		0.00117	0.00862	1	09/25/2021 14:29	WG1746532
Methyl tert-butyl ether	U		0.000464	0.00133	1	09/25/2021 14:29	WG1746532
(S) Toluene-d8	98.6			75.0-131		09/25/2021 14:29	WG1746532
(S) 4-Bromofluorobenzene	108			67.0-138		09/25/2021 14:29	WG1746532
(S) 1,2-Dichloroethane-d4	97.7			70.0-130		09/25/2021 14:29	WG1746532

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Diesel Range Organics (DRO)	119		1.52	4.56	1	10/01/2021 14:09	WG1749435
Residual Range Organics (RRO)	24.5		3.80	11.4	1	10/01/2021 14:09	WG1749435
(S) o-Terphenyl	45.5			18.0-148		10/01/2021 14:09	WG1749435



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
Total Solids	89.5		1	09/29/2021 08:28	WG1747742

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Lead	8.99		0.232	0.559	1	09/30/2021 02:58	WG1748287

Volatile Organic Compounds (GC) by Method NWTPHGX

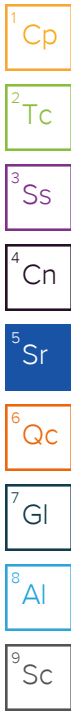
Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Gasoline Range Organics-NWTPH	64.4		1.07	3.16	25	09/30/2021 02:43	WG1748298
(S) a,a,a-Trifluorotoluene(FID)	94.9			77.0-120		09/30/2021 02:43	WG1748298

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Benzene	0.0254		0.000590	0.00126	1	09/25/2021 14:50	WG1746532
Toluene	0.0298		0.00164	0.00632	1	09/25/2021 14:50	WG1746532
Ethylbenzene	0.0108		0.000931	0.00316	1	09/25/2021 14:50	WG1746532
Total Xylenes	0.0585		0.00111	0.00821	1	09/25/2021 14:50	WG1746532
Methyl tert-butyl ether	U		0.000442	0.00126	1	09/25/2021 14:50	WG1746532
(S) Toluene-d8	98.4			75.0-131		09/25/2021 14:50	WG1746532
(S) 4-Bromofluorobenzene	119			67.0-138		09/25/2021 14:50	WG1746532
(S) 1,2-Dichloroethane-d4	97.5			70.0-130		09/25/2021 14:50	WG1746532

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Diesel Range Organics (DRO)	208		1.49	4.47	1	10/01/2021 14:22	WG1749435
Residual Range Organics (RRO)	38.9		3.72	11.2	1	10/01/2021 14:22	WG1749435
(S) o-Terphenyl	41.5			18.0-148		10/01/2021 14:22	WG1749435



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
Total Solids	74.5		1	09/29/2021 08:28	WG1747742

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Lead	0.490	J	0.279	0.671	1	09/30/2021 03:00	WG1748287

Volatile Organic Compounds (GC) by Method NWTPHGX

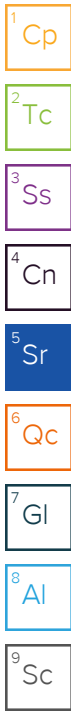
Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Gasoline Range Organics-NWTPH	U		1.48	4.36	25	09/30/2021 21:27	WG1748303
(S) a,a,a-Trifluorotoluene(FID)	113			77.0-120		09/30/2021 21:27	WG1748303

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Benzene	U		0.000814	0.00174	1	09/25/2021 15:10	WG1746532
Toluene	U		0.00227	0.00872	1	09/25/2021 15:10	WG1746532
Ethylbenzene	U		0.00128	0.00436	1	09/25/2021 15:10	WG1746532
Total Xylenes	0.00188	J	0.00153	0.0113	1	09/25/2021 15:10	WG1746532
Methyl tert-butyl ether	U		0.000610	0.00174	1	09/25/2021 15:10	WG1746532
(S) Toluene-d8	98.8			75.0-131		09/25/2021 15:10	WG1746532
(S) 4-Bromofluorobenzene	100			67.0-138		09/25/2021 15:10	WG1746532
(S) 1,2-Dichloroethane-d4	90.6			70.0-130		09/25/2021 15:10	WG1746532

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Diesel Range Organics (DRO)	3.15	J	1.78	5.37	1	10/01/2021 13:41	WG1749435
Residual Range Organics (RRO)	9.27	J	4.47	13.4	1	10/01/2021 13:41	WG1749435
(S) o-Terphenyl	41.9			18.0-148		10/01/2021 13:41	WG1749435



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
Total Solids	77.3		1	09/29/2021 08:28	WG1747742

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Lead	10.7		0.269	0.647	1	09/30/2021 03:03	WG1748287

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Gasoline Range Organics-NWTPH	U		1.42	4.18	25	09/30/2021 21:48	WG1748303
(S) a,a,a-Trifluorotoluene(FID)	114			77.0-120		09/30/2021 21:48	WG1748303

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Benzene	U		0.000780	0.00167	1	09/25/2021 15:30	WG1746532
Toluene	U		0.00217	0.00835	1	09/25/2021 15:30	WG1746532
Ethylbenzene	U		0.00123	0.00418	1	09/25/2021 15:30	WG1746532
Total Xylenes	U		0.00147	0.0109	1	09/25/2021 15:30	WG1746532
Methyl tert-butyl ether	U		0.000585	0.00167	1	09/25/2021 15:30	WG1746532
(S) Toluene-d8	103			75.0-131		09/25/2021 15:30	WG1746532
(S) 4-Bromofluorobenzene	103			67.0-138		09/25/2021 15:30	WG1746532
(S) 1,2-Dichloroethane-d4	95.1			70.0-130		09/25/2021 15:30	WG1746532

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Diesel Range Organics (DRO)	2.17	J	1.72	5.18	1	10/01/2021 13:55	WG1749435
Residual Range Organics (RRO)	8.67	J	4.31	12.9	1	10/01/2021 13:55	WG1749435
(S) o-Terphenyl	38.2			18.0-148		10/01/2021 13:55	WG1749435



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
Total Solids	72.8		1	09/29/2021 08:28	WG1747742

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Lead	4.80		0.286	0.687	1	09/30/2021 03:05	WG1748287

Volatile Organic Compounds (GC) by Method NWTPHGX

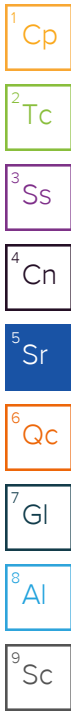
Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Gasoline Range Organics-NWTPH	U		1.55	4.56	25	09/30/2021 22:10	WG1748303
(S) a,a,a-Trifluorotoluene(FID)	114			77.0-120		09/30/2021 22:10	WG1748303

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Benzene	U		0.000852	0.00182	1	09/25/2021 15:51	WG1746532
Toluene	U		0.00237	0.00912	1	09/25/2021 15:51	WG1746532
Ethylbenzene	U		0.00134	0.00456	1	09/25/2021 15:51	WG1746532
Total Xylenes	U		0.00161	0.0119	1	09/25/2021 15:51	WG1746532
Methyl tert-butyl ether	U		0.000638	0.00182	1	09/25/2021 15:51	WG1746532
(S) Toluene-d8	97.7			75.0-131		09/25/2021 15:51	WG1746532
(S) 4-Bromofluorobenzene	101			67.0-138		09/25/2021 15:51	WG1746532
(S) 1,2-Dichloroethane-d4	96.1			70.0-130		09/25/2021 15:51	WG1746532

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Diesel Range Organics (DRO)	U		1.83	5.49	1	10/01/2021 11:41	WG1749435
Residual Range Organics (RRO)	U		4.57	13.7	1	10/01/2021 11:41	WG1749435
(S) o-Terphenyl	40.1			18.0-148		10/01/2021 11:41	WG1749435



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
Total Solids	75.9		1	09/29/2021 08:28	WG1747742

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Lead	0.514	J	0.274	0.659	1	09/30/2021 03:08	WG1748287

Volatile Organic Compounds (GC) by Method NWTPHGX

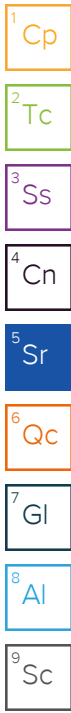
Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Gasoline Range Organics-NWTPH	1.73	J	1.41	4.15	25	09/30/2021 22:31	WG1748303
(S) a,a,a-Trifluorotoluene(FID)	114			77.0-120		09/30/2021 22:31	WG1748303

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Benzene	0.00108	J	0.000775	0.00166	1	09/25/2021 16:11	WG1746532
Toluene	U		0.00216	0.00830	1	09/25/2021 16:11	WG1746532
Ethylbenzene	U		0.00122	0.00415	1	09/25/2021 16:11	WG1746532
Total Xylenes	0.00242	J	0.00146	0.0108	1	09/25/2021 16:11	WG1746532
Methyl tert-butyl ether	U		0.000581	0.00166	1	09/25/2021 16:11	WG1746532
(S) Toluene-d8	97.6			75.0-131		09/25/2021 16:11	WG1746532
(S) 4-Bromofluorobenzene	102			67.0-138		09/25/2021 16:11	WG1746532
(S) 1,2-Dichloroethane-d4	93.4			70.0-130		09/25/2021 16:11	WG1746532

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Diesel Range Organics (DRO)	U		1.75	5.27	1	10/01/2021 11:54	WG1749435
Residual Range Organics (RRO)	U		4.39	13.2	1	10/01/2021 11:54	WG1749435
(S) o-Terphenyl	43.2			18.0-148		10/01/2021 11:54	WG1749435



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
Total Solids	71.3		1	09/29/2021 08:28	WG1747742

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Lead	4.32		0.292	0.701	1	09/30/2021 03:10	WG1748287

Volatile Organic Compounds (GC) by Method NWTPHGX

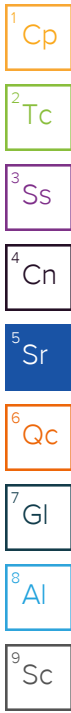
Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Gasoline Range Organics-NWTPH	2.06	J	1.62	4.77	25	09/30/2021 23:55	WG1748303
(S) a,a,a-Trifluorotoluene(FID)	114			77.0-120		09/30/2021 23:55	WG1748303

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Benzene	0.0195		0.000891	0.00191	1	09/25/2021 16:32	WG1746532
Toluene	0.00339	J	0.00248	0.00954	1	09/25/2021 16:32	WG1746532
Ethylbenzene	0.0119		0.00141	0.00477	1	09/25/2021 16:32	WG1746532
Total Xylenes	0.0149		0.00168	0.0124	1	09/25/2021 16:32	WG1746532
Methyl tert-butyl ether	U		0.000667	0.00191	1	09/25/2021 16:32	WG1746532
(S) Toluene-d8	95.2			75.0-131		09/25/2021 16:32	WG1746532
(S) 4-Bromofluorobenzene	99.3			67.0-138		09/25/2021 16:32	WG1746532
(S) 1,2-Dichloroethane-d4	93.6			70.0-130		09/25/2021 16:32	WG1746532

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Diesel Range Organics (DRO)	2.23	J	1.86	5.61	1	10/01/2021 12:22	WG1749435
Residual Range Organics (RRO)	7.60	J	4.67	14.0	1	10/01/2021 12:22	WG1749435
(S) o-Terphenyl	43.1			18.0-148		10/01/2021 12:22	WG1749435



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
Total Solids	77.3		1	09/29/2021 08:20	WG1747743

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Lead	U		0.269	0.646	1	09/30/2021 02:22	WG1748287

Volatile Organic Compounds (GC) by Method NWTPHGX

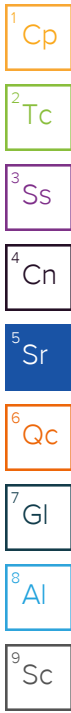
Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Gasoline Range Organics-NWTPH	467		13.7	40.3	250	10/02/2021 04:19	WG1750220
(S) a,a,a-Trifluorotoluene(FID)	112			77.0-120		10/02/2021 04:19	WG1750220

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Benzene	U		0.000752	0.00161	1	09/25/2021 16:53	WG1746532
Toluene	0.00379	J	0.00209	0.00805	1	09/25/2021 16:53	WG1746532
Ethylbenzene	U		0.00119	0.00403	1	09/25/2021 16:53	WG1746532
Total Xylenes	U		0.00142	0.0105	1	09/25/2021 16:53	WG1746532
Methyl tert-butyl ether	U		0.000564	0.00161	1	09/25/2021 16:53	WG1746532
(S) Toluene-d8	87.4			75.0-131		09/25/2021 16:53	WG1746532
(S) 4-Bromofluorobenzene	210	J1		67.0-138		09/25/2021 16:53	WG1746532
(S) 1,2-Dichloroethane-d4	92.7			70.0-130		09/25/2021 16:53	WG1746532

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Diesel Range Organics (DRO)	604		3.44	10.3	2	10/01/2021 15:12	WG1749435
Residual Range Organics (RRO)	U		4.31	12.9	1	10/01/2021 12:08	WG1749435
(S) o-Terphenyl	78.7			18.0-148		10/01/2021 15:12	WG1749435
(S) o-Terphenyl	30.5			18.0-148		10/01/2021 12:08	WG1749435



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
Total Solids	80.1		1	09/29/2021 08:20	WG1747743

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Lead	3.89		0.260	0.624	1	09/30/2021 03:18	WG1748287

Volatile Organic Compounds (GC) by Method NWTPHGX

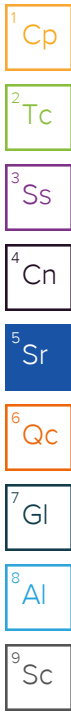
Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Gasoline Range Organics-NWTPH	U		1.31	3.86	25	10/02/2021 03:21	WG1750220
(S) a,a,a-Trifluorotoluene(FID)	113			77.0-120		10/02/2021 03:21	WG1750220

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Benzene	U		0.000721	0.00154	1	09/25/2021 17:13	WG1746532
Toluene	U		0.00201	0.00772	1	09/25/2021 17:13	WG1746532
Ethylbenzene	U		0.00114	0.00386	1	09/25/2021 17:13	WG1746532
Total Xylenes	U		0.00136	0.0100	1	09/25/2021 17:13	WG1746532
Methyl tert-butyl ether	U		0.000540	0.00154	1	09/25/2021 17:13	WG1746532
(S) Toluene-d8	98.4			75.0-131		09/25/2021 17:13	WG1746532
(S) 4-Bromofluorobenzene	105			67.0-138		09/25/2021 17:13	WG1746532
(S) 1,2-Dichloroethane-d4	93.9			70.0-130		09/25/2021 17:13	WG1746532

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Diesel Range Organics (DRO)	9.60		1.66	4.99	1	10/01/2021 14:36	WG1749435
Residual Range Organics (RRO)	36.4		4.15	12.5	1	10/01/2021 14:36	WG1749435
(S) o-Terphenyl	45.0			18.0-148		10/01/2021 14:36	WG1749435



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
Total Solids	79.6		1	09/29/2021 08:20	WG1747743

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Lead	2.85		0.261	0.628	1	09/30/2021 03:21	WG1748287

Volatile Organic Compounds (GC) by Method NWTPHGX

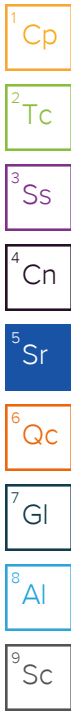
Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Gasoline Range Organics-NWTPH	U		1.33	3.92	25	10/01/2021 01:49	WG1748303
(S) a,a,a-Trifluorotoluene(FID)	113			77.0-120		10/01/2021 01:49	WG1748303

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Benzene	U		0.000732	0.00157	1	09/25/2021 17:34	WG1746532
Toluene	U		0.00204	0.00784	1	09/25/2021 17:34	WG1746532
Ethylbenzene	U		0.00116	0.00392	1	09/25/2021 17:34	WG1746532
Total Xylenes	U		0.00138	0.0102	1	09/25/2021 17:34	WG1746532
Methyl tert-butyl ether	U		0.000549	0.00157	1	09/25/2021 17:34	WG1746532
(S) Toluene-d8	98.9			75.0-131		09/25/2021 17:34	WG1746532
(S) 4-Bromofluorobenzene	102			67.0-138		09/25/2021 17:34	WG1746532
(S) 1,2-Dichloroethane-d4	96.2			70.0-130		09/25/2021 17:34	WG1746532

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Diesel Range Organics (DRO)	10.5		1.67	5.02	1	10/01/2021 14:50	WG1749435
Residual Range Organics (RRO)	28.1		4.18	12.6	1	10/01/2021 14:50	WG1749435
(S) o-Terphenyl	45.5			18.0-148		10/01/2021 14:50	WG1749435



Method Blank (MB)

(MB) R3710318-1 09/29/21 08:39

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	%		%	%
Total Solids	0.000			

¹Cp

²Tc

³Ss

L1407981-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1407981-02 09/29/21 08:39 • (DUP) R3710318-3 09/29/21 08:39

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	%	%		%		%
Total Solids	83.5	82.0	1	1.89		10

⁴Cn

⁵Sr

Laboratory Control Sample (LCS)

(LCS) R3710318-2 09/29/21 08:39

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	%	%	%	%	
Total Solids	50.0	50.0	100	85.0-115	

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3710311-1 09/29/21 08:28

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	%		%	%
Total Solids	0.000			

¹Cp

²Tc

³Ss

L1408057-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1408057-04 09/29/21 08:28 • (DUP) R3710311-3 09/29/21 08:28

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	%	%		%		%
Total Solids	75.0	75.8	1	1.07		10

⁴Cn

⁵Sr

Laboratory Control Sample (LCS)

(LCS) R3710311-2 09/29/21 08:28

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	%	%	%	%	
Total Solids	50.0	50.0	100	85.0-115	

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3710307-1 09/29/21 08:20

Analyte	MB Result %	MB Qualifier	MB MDL %	MB RDL %
Total Solids	0.00200			

1 Cp

2 Tc

3 Ss

L1408063-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1408063-04 09/29/21 08:20 • (DUP) R3710307-3 09/29/21 08:20

Analyte	Original Result %	DUP Result %	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits
Total Solids	94.2	94.2	1	0.0469		10

4 Cn

5 Sr

6 Qc

Laboratory Control Sample (LCS)

(LCS) R3710307-2 09/29/21 08:20

Analyte	Spike Amount %	LCS Result %	LCS Rec. %	Rec. Limits %	LCS Qualifier
Total Solids	50.0	50.0	99.9	85.0-115	

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3710547-1 09/30/21 02:17

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Lead	U		0.208	0.500

Laboratory Control Sample (LCS)

(LCS) R3710547-2 09/30/21 02:19

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Lead	100	97.0	97.0	80.0-120	

L1408057-15 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1408057-15 09/30/21 02:22 • (MS) R3710547-5 09/30/21 02:29 • (MSD) R3710547-6 09/30/21 02:32

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Lead	129	U	133	118	103	91.4	1	75.0-125			12.1	20

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3710653-2 09/29/21 12:03

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Gasoline Range Organics-NWTPH	U		0.848	2.50
(S) a,a,a-Trifluorotoluene(FID)	91.1			77.0-120

Laboratory Control Sample (LCS)

(LCS) R3710653-1 09/29/21 11:19

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5.50	5.29	96.2	71.0-124	
(S) a,a,a-Trifluorotoluene(FID)			113	77.0-120	

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Method Blank (MB)

(MB) R3710777-2 09/29/21 23:55

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Gasoline Range Organics-NWTPH	U		0.848	2.50
(S) a,a,a-Trifluorotoluene(FID)	92.1			77.0-120

Laboratory Control Sample (LCS)

(LCS) R3710777-1 09/29/21 23:11

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5.50	5.55	101	71.0-124	
(S) a,a,a-Trifluorotoluene(FID)			115	77.0-120	

L1408057-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1408057-02 09/30/21 00:17 • (MS) R3710777-3 09/30/21 09:22 • (MSD) R3710777-4 09/30/21 09:44

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Gasoline Range Organics-NWTPH	203	3.94	146	155	70.2	74.3	25	10.0-149			5.65	27
(S) a,a,a-Trifluorotoluene(FID)					108	108		77.0-120				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3711451-2 09/30/21 15:23

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Gasoline Range Organics-NWTPH	U		0.848	2.50
(S) a,a,a-Trifluorotoluene(FID)	112			77.0-120

Laboratory Control Sample (LCS)

(LCS) R3711451-1 09/30/21 14:40

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5.50	5.87	107	71.0-124	
(S) a,a,a-Trifluorotoluene(FID)			104	77.0-120	

L1408057-09 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1408057-09 09/30/21 21:27 • (MS) R3711451-3 10/01/21 03:37 • (MSD) R3711451-4 10/01/21 03:58

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Gasoline Range Organics-NWTPH	204	U	151	138	73.9	67.4	25	10.0-149			9.19	27
(S) a,a,a-Trifluorotoluene(FID)					100	104		77.0-120				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3711992-2 10/02/21 02:59

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Gasoline Range Organics-NWTPH	U		0.848	2.50
(S) a,a,a-Trifluorotoluene(FID)	112			77.0-120

Laboratory Control Sample (LCS)

(LCS) R3711992-1 10/02/21 02:16

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5.50	5.50	100	71.0-124	
(S) a,a,a-Trifluorotoluene(FID)			103	77.0-120	

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Method Blank (MB)

(MB) R3710043-2 09/25/21 20:46

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/kg		mg/kg	mg/kg
Benzene	U		0.000467	0.00100
Ethylbenzene	U		0.000737	0.00250
Methyl tert-butyl ether	U		0.000350	0.00100
Toluene	U		0.00130	0.00500
Xylenes, Total	U		0.000880	0.00650
(S) Toluene-d8	112			75.0-131
(S) 4-Bromofluorobenzene	97.8			67.0-138
(S) 1,2-Dichloroethane-d4	108			70.0-130

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

Laboratory Control Sample (LCS)

(LCS) R3710043-1 09/25/21 19:30

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	mg/kg	mg/kg	%	%	
Benzene	0.125	0.107	85.6	70.0-123	
Ethylbenzene	0.125	0.115	92.0	74.0-126	
Methyl tert-butyl ether	0.125	0.125	100	66.0-132	
Toluene	0.125	0.118	94.4	75.0-121	
Xylenes, Total	0.375	0.354	94.4	72.0-127	
(S) Toluene-d8			107	75.0-131	
(S) 4-Bromofluorobenzene			101	67.0-138	
(S) 1,2-Dichloroethane-d4			122	70.0-130	

7 Gl

8 Al

9 Sc

L1407464-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1407464-06 09/26/21 01:13 • (MS) R3710043-3 09/26/21 03:26 • (MSD) R3710043-4 09/26/21 03:46

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Benzene	0.124	U	0.0577	0.0695	46.5	56.0	1	10.0-149			18.6	37
Ethylbenzene	0.124	U	0.0602	0.0759	48.5	61.2	1	10.0-160			23.1	38
Methyl tert-butyl ether	0.124	U	0.0900	0.0843	72.6	68.0	1	11.0-147			6.54	35
Toluene	0.124	U	0.0668	0.0779	53.9	62.8	1	10.0-156			15.3	38
Xylenes, Total	0.372	U	0.200	0.233	53.8	62.6	1	10.0-160			15.2	38
(S) Toluene-d8					109	107		75.0-131				
(S) 4-Bromofluorobenzene					98.4	96.3		67.0-138				
(S) 1,2-Dichloroethane-d4					116	114		70.0-130				

Method Blank (MB)

(MB) R3711383-3 09/25/21 14:09

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/kg		mg/kg	mg/kg
Benzene	U		0.000467	0.00100
Ethylbenzene	U		0.000737	0.00250
Methyl tert-butyl ether	U		0.000350	0.00100
Toluene	U		0.00130	0.00500
Xylenes, Total	U		0.000880	0.00650
(S) Toluene-d8	101			75.0-131
(S) 4-Bromofluorobenzene	103			67.0-138
(S) 1,2-Dichloroethane-d4	90.5			70.0-130

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3711383-1 09/25/21 10:51 • (LCSD) R3711383-2 09/25/21 11:12

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	mg/kg	mg/kg	mg/kg	%	%	%			%	%
Benzene	0.125	0.121	0.121	96.8	96.8	70.0-123			0.000	20
Ethylbenzene	0.125	0.110	0.108	88.0	86.4	74.0-126			1.83	20
Methyl tert-butyl ether	0.125	0.126	0.120	101	96.0	66.0-132			4.88	20
Toluene	0.125	0.118	0.116	94.4	92.8	75.0-121			1.71	20
Xylenes, Total	0.375	0.364	0.363	97.1	96.8	72.0-127			0.275	20
(S) Toluene-d8				100	98.9	75.0-131				
(S) 4-Bromofluorobenzene				106	101	67.0-138				
(S) 1,2-Dichloroethane-d4				95.5	97.2	70.0-130				

7 Gl

8 Al

9 Sc

L1408057-17 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1408057-17 09/25/21 17:34 • (MS) R3711383-4 09/25/21 17:55 • (MSD) R3711383-5 09/25/21 18:15

Analyte	Spike Amount (dry)	Original Result (dry)	MS Result (dry)	MSD Result (dry)	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Benzene	0.162	U	0.0271	0.0237	16.8	14.7	1	10.0-149			13.6	37
Ethylbenzene	0.162	U	0.0267	0.0234	16.5	14.5	1	10.0-160			13.2	38
Methyl tert-butyl ether	0.162	U	0.0569	0.0574	35.2	35.5	1	11.0-147			0.823	35
Toluene	0.162	U	0.0265	0.0259	16.4	16.0	1	10.0-156			2.40	38
Xylenes, Total	0.483	U	0.0916	0.0869	19.0	18.0	1	10.0-160			5.27	38
(S) Toluene-d8					98.8	98.6		75.0-131				
(S) 4-Bromofluorobenzene					101	102		67.0-138				
(S) 1,2-Dichloroethane-d4					96.7	86.9		70.0-130				

Method Blank (MB)

(MB) R3711420-1 10/01/21 09:38

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Diesel Range Organics (DRO)	U		1.33	4.00
Residual Range Organics (RRO)	U		3.33	10.0
(S) o-Terphenyl	52.7			18.0-148

Laboratory Control Sample (LCS)

(LCS) R3711420-2 10/01/21 09:52

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Diesel Range Organics (DRO)	50.0	30.5	61.0	50.0-150	
(S) o-Terphenyl			52.3	18.0-148	

L1408057-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1408057-02 10/01/21 12:47 • (MS) R3711420-3 10/01/21 13:01 • (MSD) R3711420-4 10/01/21 13:14

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Diesel Range Organics (DRO)	63.7	U	30.6	32.0	48.0	49.8	1	50.0-150	J6	J6	4.57	20
(S) o-Terphenyl					38.7	32.7		18.0-148				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

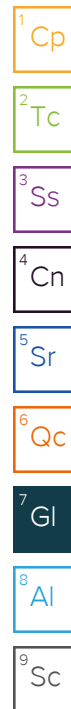
Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
MDL	Method Detection Limit.
MDL (dry)	Method Detection Limit.
RDL	Reported Detection Limit.
RDL (dry)	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier Description

J	The identification of the analyte is acceptable; the reported value is an estimate.
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.



ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey-NELAP	TN002
California	2932	New Mexico ¹	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio-VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	KY90010	South Carolina	84004002
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas ⁵	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA-Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Company Name/Address:
Arcadis - Chevron - WA
 1100 Olive Way
 Suite 800
 Seattle, WA 98101

Billing Information:
 Attn: Accounts Payable
 630 Plaza Dr., Ste. 600
 Highlands Ranch, CO 80129

Report to:
Ada Hamilton/Alex Laws

Email To:
 alexander.laws@arcadis.com; Ada.Hamilton@ar

Project Description:
 97502

City/State Collected: Sedro-Woodley, WA Please Circle: PT MT CT ET

Phone: 206-325-5254

Client Project #
 30064310 07.21-Plan

Lab Project #
 CHEVARCWA-97502

Collected by (print):
 M. Andrew

Site/Facility ID #
 640 METCALF ST SEDRO-

P.O. #

Collected by (signature):

Rush? (Lab MUST Be Notified)
 Same Day Five Day
 Next Day 5 Day (Rad Only)
 Two Day 10 Day (Rad Only)
 Three Day

Quote #
 Date Results Needed

Immediately Packed on Ice N Y

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs
SB-2-10.5-11.5	Grab	SS	-	9/22/21	09:05	2
6B-2-15.5-16.5		SS	-	9/22/21	09:09	2
SB-2-18.0-19.0		SS	-	9/22/21	09:14	2
SB-2-6.0-7.0		SS	-	9/22/21	09:03	2
MW-14-11.5-12.5		SS	-	9/21/21	16:20	2
MW-14-14.0-15.0		SS	-	09/21/21	14:25	2
MW-14-9.0-10.0		SS	-	09/21/21	16:15	2
MW-14-2.5-3.5		SS	-	09/20/21	14:36	2
MW-14-19.0-20.0		SS	-	09/21/21	14:30	2
Trip Blank		SS				2

Analysis / Container / Preservative
soil BTEXM 8260D 40mlAmb/MeOH10ml/Syr
soil NWTPHDX NOSGT 8ozClr-NoPres
soil NWTPHGX 40mlAmb/MeOH10ml/Syr
soil Pb 6010 8ozClr-NoPres
water BTEXM 8260D 40mlAmb-HCI
water NWTPHDX NOSGT 40mlAmb-HCI-BT
water NWTPHGX 40mlAmb HCl
water PAHs 8270ESIM 40mlAmb-NoPres-WT
water Total Pb 6010 250mlHDPE-HNO3

Chain of Custody Page 1 of 2

 12065 Lebanon Rd Mount Juliet, TN 37122
 Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: <https://info.pacelabs.com/hubfs/pas-standard-terms.pdf>

SPC # **C013**
 11408057
 Acctnum: CHEVARCWA
 Template: T194612
 Prelogin: P871785
 PM: 110 - Brian Ford
 PB: mm9/18/21

Remarks	Sample # (lab only)
	-01
	-02
	-03
	-04
	-05
	-06
	-07
	-08
	-09
	-10

* Matrix:
 SS - Soil AIR - Air F - Filter
 GW - Groundwater B - Bioassay
 WW - WasteWater
 DW - Drinking Water
 OT - Other

Remarks:
 pH _____ Temp _____
 Flow _____ Other _____
 Samples returned via: _____ Tracking # 5217 3313/0728

Sample Receipt Checklist
 COC Seal Present/Intact: NP Y N
 COC Signed/Accurate: N
 Bottles arrive intact: N
 Correct bottles used: N
 Sufficient volume sent: N
 If Applicable
 VOA Zero Headspace: Y N
 Preservation Correct/Checked: Y N
 RAD Screen <0.5 mR/hr: Y N

Relinquished by: (Signature)

 Date: 09/22/21 Time: 1420


Received by: (Signature)

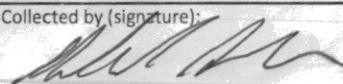
 Date: 9/23/21 Time: 9:45

Received for lab by: (Signature)

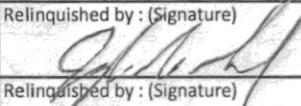
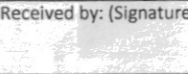
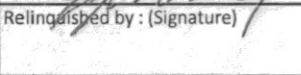
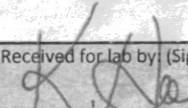
Trip Blank Received: Yes/No
 HCL/MeOH
 TBR
 Temp 60 °C
 2.4-1.5-2.3
 Bottles Received: 32

If preservation required by Login: Date/Time
 Hold:
 Condition: NCF / OK

Company Name/Address: Arcadis - Chevron - WA 1100 Olive Way Suite 800 Seattle, WA 98101		Billing Information: Attn: Accounts Payable 630 Plaza Dr., Ste. 600 Highlands Ranch, CO 80129		Analysis / Container / Preservative							Chain of Custody Page 2 of 2												
Report to: Ada Hamilton/Alex Laws		Email To: alexander.laws@arcadis.com;Ada.Hamilton@ar		City/State Collected: Sedro - Woolley, WA		Please Circle: ET MT CT ET		Pres Chk		 12065 Lebanon Rd Mount Juliet, TN 37122 Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf													
Project Description: 97502		Client Project # 30064310 07.21-Plan		Lab Project # CHEVARCWA-97502		soil BTEXM 8260D 40mlAmb/MeOH10ml/Syr		soil NWTPHDX NOSGT 8ozClr-NoPres		soil NWTPHGX 40mlAmb/MeOH10ml/Syr		soil Pb 6010 8ozClr-NoPres		water BTEXM 8260D 40mlAmb-HCl		water NWTPHDX NOSGT 40mlAmb-HCl-BT		water NWTPHGX 40mlAmb HCl		water PAHs 8270ESIM 40mlAmb-NoPres-WT		water Total Pb 6010 250mlHDPE-HNO3	

Phone: 206-325-5254		Client Project # 30064310 07.21-Plan		Lab Project # CHEVARCWA-97502		SDG # U1408057	
Collected by (print): M. Andrews		Site/Facility ID # 640 METCALF ST SEDRO-		P.O. #		Table #	
Collected by (signature): 		Rush? (Lab MUST Be Notified) Same Day ___ Five Day ___ Next Day ___ 5 Day (Rad Only) ___ Two Day ___ 10 Day (Rad Only) ___ Three Day ___		Quote #		Acctnum: CHEVARCWA	
Immediately Packed on Ice N ___ Y ___		Date Results Needed		No. of Cntrs		Template: T194612	
						Prelogin: P871785	
						PM: 110 - Brian Ford	
						PB: mm918121	
						Shipped Via:	

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	soil BTEXM 8260D 40mlAmb/MeOH10ml/Syr	soil NWTPHDX NOSGT 8ozClr-NoPres	soil NWTPHGX 40mlAmb/MeOH10ml/Syr	soil Pb 6010 8ozClr-NoPres	water BTEXM 8260D 40mlAmb-HCl	water NWTPHDX NOSGT 40mlAmb-HCl-BT	water NWTPHGX 40mlAmb HCl	water PAHs 8270ESIM 40mlAmb-NoPres-WT	water Total Pb 6010 250mlHDPE-HNO3	Remarks	Sample # (lab only)
MW-20-7.0-8.0	Grab	SS	-	9/22/21	10:21	2	X	X	X	X							-11
MW-15-6.5-7.5		SS	-	9/22/21	11:50	2											-12
MW-15-14.0-15.0		SS	-	9/21/21	12:10	2											-13
MW-15-19.0-20.0		SS	-	9/21/21	12:15	2											-14
MW-15-10.0-11.0		SS	-	9/21/21	12:06	2											-15
DUP-1-092221		SS	-	9/22/21	-	2											-16
MW-20-15.0-16.0		SS	-	9/22/21	10:25	2	↓	↓	↓	↓							-17
		SS															
		SS															
		SS															

* Matrix: SS - Soil AIR - Air F - Filter GW - Groundwater B - Bioassay WW - WasteWater DW - Drinking Water OT - Other		Remarks:				pH _____ Temp _____ Flow _____ Other _____		Sample Receipt Checklist COC Seal Present/Intact: <input checked="" type="checkbox"/> NP <input type="checkbox"/> Y <input type="checkbox"/> N COC Signed/Accurate: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Bottles arrive intact: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Correct bottles used: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Sufficient volume sent: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N if Applicable VOA Zero Headspace: <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Preservation Correct/Checked: <input type="checkbox"/> Y <input checked="" type="checkbox"/> N RAD Screen <0.5 mR/hr: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N							
Relinquished by: (Signature) 		Date: 09/22/21		Time: 1420		Received by: (Signature) 		Trip Blank Received: (Yes/No) 2 <input checked="" type="checkbox"/> HCL/MeOH TBR		Bottles Received: 2.4-1-2.3 30		If preservation required by Login: Date/Time			
Relinquished by: (Signature) 		Date:		Time:		Received for lab by: (Signature) 		Date: 9/23/21		Time: 9:45		Hold:		Condition: NCF / OK	

Jordan Zito

From: Jordan Zito
Sent: Monday, September 27, 2021 7:37 AM
To: Jordan Zito
Subject: FW: Pace Analytical National Login for 30064310 07.21-Plan 97502 L1408057

-----Original Message-----

From: Hamilton, Ada <Ada.Hamilton@arcadis.com>
Sent: Friday, September 24, 2021 3:31 PM
To: Brian Ford <Brian.Ford@pacelabs.com>; Pauley, Brian <Christopher.Pauley@arcadis.com>; Andrews, Michael <Michael.Andrews@arcadis.com>; Laws, Alex <Alexander.Laws@arcadis.com>; EnvironmentDM-India <environmentDM-India@arcadis.com>
Subject: RE: Pace Analytical National Login for 30064310 07.21-Plan 97502 L1408057

CAUTION: This email originated from outside Pace Analytical. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi Brian,

Can you please change the sample ID's for the following samples:

Current Sample ID	New Sample ID
MW-14-11.5-12.5	MW-21-11.5-12.5
MW-14-14.0-15.0	MW-21-14.0-15.0
MW-14-9.0-10.0	MW-21-9.0-10.0
MW-14-2.5-3.5	MW-21-2.5-3.5
MW-14-19.0-20.0	MW-21-19.0-20.0

Basically change MW-14 to MW-21.

Thank you,

-Ada

Ada Hamilton
Project Manager
Arcadis U.S., Inc.
1100 Olive Way, Suite 800 | Seattle, WA | 98101 | USA T ++1 206 413 6430 M +1 206 321 3782 www.arcadis.com

-----Original Message-----

From: Brian Ford <brian.ford@pacelabs.com>
Sent: Friday, September 24, 2021 8:23 AM
To: Pauley, Brian <Christopher.Pauley@arcadis.com>; Hamilton, Ada <Ada.Hamilton@arcadis.com>; Andrews, Michael <Michael.Andrews@arcadis.com>; Laws, Alex <Alexander.Laws@arcadis.com>; EnvironmentDM-India <environmentDM-India@arcadis.com>
Subject: Pace Analytical National Login for 30064310 07.21-Plan 97502 L1408057

"Privileged and Confidential"

Thank you for choosing Pace National! Please find enclosed PDF files containing your laboratory login confirmation and chain of custody.

Pace National is leading the laboratory industry with our On-line Data Management tools. Please contact your Project Manager to learn how to create historical Excel tables or access data in real time using powerful and intuitive software that is only available at

<https://nam02.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.pacenational.com%2F&data=04%7C01%7CAda.Hamilton%40arcadis.com%7Cb531283c990d411e602508d97f6f4506%7C7f90057d3ea046feb07ce0568627081b%7C0%7C0%7C637680938886322694%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzliLlCjB1Ii6k1haWwiLCJXVCI6Mn0%3D%7C1000&data=rRmA6ljttA5Ff%2BKz2RMtDk4zJvhPWOsj7BxKpWydakA%3D&reserved=0>

Visit Pace National's secure data management web site - myData - for all your reporting and data management needs at <https://nam02.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.pacenational.com%2Flogin&data=04%7C01%7CAda.Hamilton%40arcadis.com%7Cb531283c990d411e602508d97f6f4506%7C7f90057d3ea046feb07ce0568627081b%7C0%7C0%7C637680938886322694%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzliLlCjB1Ii6k1haWwiLCJXVCI6Mn0%3D%7C1000&data=Y0ytJXnbKHW08GaUmkJyx9j9qyZ2QF3rN1zpeU1MaVY%3D&reserved=0>

Pace National ... "Your Lab of Choice"

Brian Ford
Technical Service Representative
615-773-9772

Pace Analytical National
12065 Lebanon Rd.
Mt. Juliet, TN 37122

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Chevron - WA

DATA REVIEW

640 METCALF ST SEDRO-WOOLLEY

Volatile organic compounds, Total Petroleum Hydrocarbons, and Metals

SDG# L1408935

Analyses Performed By:
Pace Analytical National
Mount Juliet, TN 37122

Report # 44127R
Review Level: Tier II
Project: 30064310.08.82



DATA REVIEW REPORT

SUMMARY

This data quality assessment summarizes the review of Sample Delivery Groups (SDGs) # L1408935 for samples collected in association with the Chevron 640 Metcalf ST Sedro-Woolley Site. The review was conducted as a Tier II evaluation and included review of data package completeness. Only analytical data associated with constituents of concern were reviewed for this validation. Field documentation was not included in this review. Included with this assessment are the validation annotated sample result sheets and chain of custody. Analyses were performed on the following samples:

Sample ID	Lab ID	Matrix	Sample Collection Date	Parent Sample	Analysis		
					VOC	TPH	MET
SB-1-19.0-20.0_210923	L1408935-01	Soil	09.23.2021		X	X	X
SB-1-7.5-8.5_210923	L1408935-02	Soil	09.23.2021		X	X	X
SB-1-15.0-16.0_210923	L1408935-03	Soil	09.23.2021		X	X	X
MW-17-11.5-13.0_210923	L1408935-04	Soil	09.23.2021		X	X	X
MW-17-19.0-20.0_210923	L1408935-05	Soil	09.23.2021		X	X	X
MW-17-15.0-16.0_210923	L1408935-06	Soil	09.23.2021		X	X	X
MW-17-8.0-9.0_210923	L1408935-07	Soil	09.23.2021		X	X	X
MW-18-19.0-20.0_210923	L1408935-08	Soil	09.23.2021		X	X	X
SB-3-18.0-19.0_210923	L1408935-10	Soil	09.23.2021		X	X	X
TRIP BLANK_210923	L1408935-11	Soil	09.23.2021		X	X	

Notes:

VOC = volatile organic compounds.

TPH = total petroleum hydrocarbons.

MET = metals.

DATA REVIEW REPORT

ANALYTICAL DATA PACKAGE DOCUMENTATION

The table below is the evaluation of the data package completeness.

Items Reviewed	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
1. Sample receipt condition		X		X	
2. Requested analyses and sample results		X		X	
3. Master tracking list		X		X	
4. Methods of analysis		X		X	
5. Reporting limits		X		X	
6. Sample collection date		X		X	
7. Laboratory sample received date		X		X	
8. Sample preservation verification (as applicable)		X		X	
9. Sample preparation/extraction/analysis dates		X		X	
10. Fully executed Chain-of-Custody (COC) form		X		X	
11. Narrative summary of QA or sample problems provided		X		X	
12. Data Package Completeness and Compliance		X		X	

Note:

QA - Quality Assurance

DATA REVIEW REPORT

ORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) SW-846 Methods 8260D, NWTPHGX and NWTPHDX. Data were reviewed in accordance with the method specified criteria, USEPA National Functional Guidelines NFG for Organic Superfund Methods Data Review, EPA-540-R-20-005 (November 2020), with reference to the historical (USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review, OSWER 9240.1-05A-P, October 1999, as appropriate).

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and had already been subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with USEPA National Functional Guidelines:

- Concentration (C) Qualifiers
 - U The compound was analyzed for but not detected. The associated value is the compound quantitation limit.
 - B The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.
- Quantitation (Q) Qualifiers
 - E The compound was quantitated above the calibration range.
 - D Concentration is based on a diluted sample analysis.
- Validation Qualifiers
 - J The compound was positively identified; however, the associated numerical value is an estimated concentration only.
 - UJ The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.
 - JN The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification. The associated numerical value is an estimated concentration only.
 - UB Compound considered non-detect at the listed value due to associated blank contamination.
 - N The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.
 - R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is

DATA REVIEW REPORT

that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

DATA REVIEW REPORT

VOLATILE ORGANIC COMPOUND (VOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8260D	Soil	14 days from collection to analysis	Cool to <6 °C.

Note:

s.u. Standard units

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the sample detection limit (SDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore, detected sample results were not associated with blank contamination.

3. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. VOC analysis requires that all surrogates associated with the analysis exhibit recoveries within the laboratory-established acceptance limits.

All surrogate recoveries were within control limits.

4. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analyses

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

MS/MSD analysis was performed on sample MW-17-11.5-13.0_210923. MS/MSD analysis exhibited recoveries and RPDs within the laboratory established acceptance limits.

5. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS/LCSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

DATA REVIEW REPORT

All compounds associated with the LCS/LCSD analysis exhibited recoveries within the control limits.

6. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 50% for soil matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of three times the RL is applied for soil matrices.

A field duplicate sample was not collected from sample locations associated with this SDG

7. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA REVIEW REPORT

DATA VALIDATION CHECKLIST FOR VOCs

VOCs: SW-846 8260D	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks	X				X
C. Trip blanks		X		X	
Laboratory Control Sample (LCS)		X		X	
Laboratory Control Sample Duplicate (LCSD)		X		X	
LCS/LCSD Precision (RPD)		X		X	
Matrix Spike (MS)		X		X	
Matrix Spike Duplicate (MSD)		X		X	
MS/MSD Precision (RPD)		X		X	
Field/Lab Duplicate (RPD)	X				X
Surrogate Spike Recoveries		X		X	
Dilution Factor		X		X	
Moisture Content		X		X	

Notes:

%R Percent recovery

RPD Relative percent difference

DATA REVIEW REPORT

TOTAL PETROLEUM HYDROCARBONS ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
GRO by Method NWTPHGX	Soil	14 days from collection to analysis	Cool to <6 °C
DRO by Method NWTPHDX	Soil	14 days from collection to extraction and 40 days from extraction to analysis	Cool to <6 °C

All samples were analyzed within the specified holding times.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the sample detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

The compound Gasoline Range Organics-NWTPH (45.6 ug/l) was detected in the associated method blank Batch Number – WG1749141 for the method NWTPHGX. However, the Associated samples were Trip Blank. No qualification of the sample results is required. All other criteria were Met.

3. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. The analysis requires surrogate compounds exhibit recoveries within the laboratory-established acceptance limits.

All surrogate recoveries were within control limits.

4. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analyses

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

MS/MSD analysis was performed on sample MW-17-11.5-13.0_210923 for Gasoline Range Organics-NWTPH. MS/MSD analysis exhibited recoveries and RPDs within the laboratory established acceptance limits.

DATA REVIEW REPORT

Sample locations associated with the MS/MSD exhibiting recoveries outside of the control limits are presented in the following table.

Sample Locations	Compound	MS Recovery	MSD Recovery
MW-17-11.5-13.0_210923	Diesel Range Organics (DRO)	AC	< LL but > 10%

Note:

AC = Acceptable

The criteria used to evaluate the MS/MSD recoveries are presented in the following table. In the case of an MS/MSD deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> the upper control limit (UL)	Non-detect	No Action
	Detect	J
< the lower control limit (LL) but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J
Parent sample concentration > four times the MS/MSD spiking solution concentration (D).	Detect	No Action
	Non-detect	

Sample locations associated with MS/MSD recoveries exhibiting an RPD greater than of the control limit presented in the following table.

Sample Locations	Compound
MW-17-11.5-13.0_210923	Diesel Range Organics (DRO)

The criteria used to evaluate the RPD between the MS/MSD recoveries are presented in the following table. In the case of an RPD deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> UL	Non-detect	UJ
	Detect	J

5. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

DATA REVIEW REPORT

All compounds associated with the LCS analysis exhibited recoveries within the control limits.

6. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 50% for soil matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of three times the RL is applied for soil matrices.

A field duplicate sample was not collected from sample locations associated with this SDG.

7. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA REVIEW REPORT

DATA VALIDATION CHECKLIST FOR TPH

TPH: NWTPHDX and NWTPHGX	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY (GC/FID)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X	X		
B. Equipment blanks	X				X
C. Trip Blanks		X		X	
Laboratory Control Sample (LCS) %R		X		X	
Laboratory Control Sample Duplicate (LCSD) %R	X				X
LCS/LCSD Precision (RPD)	X				X
Matrix Spike (MS) %R		X		X	
Matrix Spike Duplicate (MSD) %R		X	X		
MS/MSD Precision (RPD)		X	X		
Field/Lab Duplicate (RPD)	X				X
Surrogate Spike Recoveries		X		X	
Dilution Factor		X		X	

Notes:

%R - percent recovery

RPD - relative percent difference

DATA REVIEW REPORT

INORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) SW-846 Methods 6010D. Data were reviewed in accordance with USEPA National Functional Guidelines of July 2002.

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and that it was already subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with the USEPA National Functional Guidelines:

- Concentration (C) Qualifiers
 - U The analyte was analyzed for but not detected. The associated value is the analyte instrument detection limit.
 - J The reported value was obtained from a reading less than the reporting limit (RL), but greater than or equal to the method detection limit (MDL).
- Quantitation (Q) Qualifiers
 - E The reported value is estimated due to the presence of interference.
 - N Spiked sample recovery is not within control limits.
 - * Duplicate analysis is not within control limits.
- Validation Qualifiers
 - J The analyte was positively identified; however, the associated numerical value is an estimated concentration only.
 - UJ The analyte was not detected above the reporting limit. However, the reported limit is approximate and may or may not represent the actual limit of detection.
 - UB Analyte considered non-detect at the listed value due to associated blank contamination.
 - R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

DATA REVIEW REPORT

METALS ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 6010D	Soil	180 days from collection to analysis	Cool to <6 °C.

All samples were analyzed within the specified holding times.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank is calculated for QA blanks containing concentrations greater than the sample detection limit (SDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

All analytes were not detected above the MDL in the associated blanks; therefore, detected sample results were not associated with blank contamination.

3. Matrix Spike/Matrix Spike Duplicate (MS/MSD)/Laboratory Duplicate Analysis

MS/MSD and laboratory duplicate data are used to assess the precision and accuracy of the analytical method.

3.1 MS/MSD Analysis

All metal analytes must exhibit a percent recovery within the established acceptance limits of 75% to 125%. The MS/MSD recovery control limits do not apply for MS performed on sample locations where the analyte's concentration detected in the parent sample exceeds the MS concentration by a factor of four or greater. In instance where this is true, the data will not be qualified even if the percent recovery does not meet the control limits and the laboratory flag will be removed.

MS/MSD analysis was performed on sample MW-17-11.5-13.0_210923. MS/MSD analysis exhibited recoveries and RPDs within control limits.

3.2 Laboratory Duplicate Analysis

The laboratory duplicates relative percent difference (RPD) criterion is applied when parent and duplicate sample concentrations are greater than or equal to 5 times the RL. A control limit of 35% for soil matrices is applied when the criteria above is true. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL for soil matrices.

Laboratory duplicate analysis was not performed on any of the samples from these SDG.

DATA REVIEW REPORT

4. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 50% for soil matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of three times the RL is applied for soil matrices.

A field duplicate sample was not collected from sample locations associated with this SDG.

5. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the accuracy of the analytical method independent of matrix interferences. The analytes associated with the LCS analysis must exhibit a percent recovery between the control limits of 80% and 120%.

The LCS analysis exhibited recoveries within the control limits.

6. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA REVIEW REPORT

DATA VALIDATION CHECKLIST FOR METAL

METALS; SW-846 6010D	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Inductively Coupled Plasma-Mass Spectrometry (ICP-MS)					
Tier II Validation					
Holding Times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Instrument Blanks	X				X
B. Method Blanks		X		X	
C. Equipment/Field Blanks	X				X
Laboratory Control Sample (LCS)		X		X	
Laboratory Control Sample Duplicate (LCSD) %R	X				X
LCS/LCSD Precision (RPD)	X				X
Matrix Spike (MS) %R		X		X	
Matrix Spike Duplicate (MSD) %R		X		X	
MS/MSD Precision (RPD)		X		X	
Lab Duplicate (RPD)	X				X
Field Duplicate (RPD)	X				X
ICP Serial Dilution %D	X				X
Reporting Limit Verification		X		X	

Notes:


%R Percent recovery

RPD Relative percent difference

%D Percent difference

DATA REVIEW REPORT

VALIDATION PERFORMED BY: Bhagyashree Fulzele

SIGNATURE: 

DATE: January 29, 2022

PEER REVIEW: Dennis Capria

DATE: January 31, 2022

**CHAIN OF CUSTODY
CORRECTED SAMPLE ANALYSIS DATA
SHEETS**



Company Name/Address:
Arcadis - Chevron - WA
 1100 Olive Way
 Suite 800
 Seattle, WA 98101

Billing Information:
 Attn: Accounts Payable
 630 Plaza Dr., Ste. 600
 Highlands Ranch, CO 80129

Pres
 Chk

Analysis / Container / Preservative

Chain of Custody Page 1 of 2

Report to:
Ada Hamilton/Alex Laws

Email To:
 alexander.laws@arcadis.com;Ada.Hamilton@ar

Project Description:
 97502

City/State Collected: *Sedro - Woolley, WA*

Please Circle:
 (PT) MT CT ET

Phone: 206-325-5254

Client Project #
 30064310 07.21-Plan

Lab Project #
 CHEVARCWA-97502

Collected by (print):
M. Andrews

Site/Facility ID #
 640 METCALF ST SEDRO-

P.O. #

Collected by (signature):
[Signature]
 Immediately Packed on Ice N Y X

Rush? (Lab MUST Be Notified)
 ___ Same Day ___ Five Day
 ___ Next Day ___ 5 Day (Rad Only)
 ___ Two Day ___ 10 Day (Rad Only)
 ___ Three Day

Quote #
 Date Results Needed

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs
-----------	-----------	----------	-------	------	------	--------------

SB-1-19.0-20.0	G	SS	-	9/23/21	12:31	2
SB-1-7.5-8.5	G	SS	-	9/23/21	12:18	2
SB-1-15.0-16.0	G	SS	-	9/23/21	12:27	2
MW-17-11.5-13.0	G	SS	-	9/23/21	11:34	6
MW-17-19.0-20.0	G	SS	-	9/23/21	11:26	2
MW-17-15.0-16.0	G	SS	-	9/23/21	11:22	2
MW-17-8.0-9.0	G	SS	-	9/23/21	11:29	2
MW-18-19.0-20.0	G	SS	-	9/23/21	10:31	2
DUP-2-092321	G	GW SS	-	9/23/21	-	2
SB-3-18.0-19.0	G	GW SS	-	9/23/21	0758	2

soil BTEXM 8260D 40mlAmb/MeOH10ml/Syr	soil NWTPHDX NOSGT 8ozClr-NoPres	soil NWTPHGX 40mlAmb/MeOH10ml/Syr	soil Pb 6010 8ozClr-NoPres	water BTEXM 8260D 40mlAmb-HCl	water NWTPHDX NOSGT 40mlAmb-HCl-BT	water NWTPHGX 40mlAmb HCl	water PAHs 8270ESIM 40mlAmb-NoPres-WT	water Total Pb 6010 250mlHDPE-HNO3
X	X	X	X					

Pace Analytical
 12065 Lebanon Rd. Mount Juliet, TN 37122
 Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at:
<https://info.pacelabs.com/hubfs/pas-standard-terms.pdf>

SDG # **E087**
 Table
 Acctnum: CHEVARCWA
 Template: T194612
 Prelogin: P871785
 PM: 110 - Brian Ford
 PB: *mm 9/24*

Shipped Via:
 Remarks Sample # (lab only)

* Matrix:
 SS - Soil AIR - Air F - Filter
 GW - Groundwater B - Bioassay
 WW - WasteWater
 DW - Drinking Water
 OT - Other

Remarks:
 pH _____ Temp _____
 Flow _____ Other _____
 Samples returned via:
 ___ UPS X FedEx ___ Courier _____
 Tracking # *B 5217 3300 6556*

Sample Receipt Checklist

COC Seal Present/Intact:	NP	N
COC Signed/Accurate:	<u>X</u>	N
Bottles arrive intact:	<u>X</u>	N
Correct bottles used:	<u>X</u>	N
Sufficient volume sent:	<u>X</u>	N
If Applicable		
VOA Zero Headspace:	<u> </u>	N
Preservation Correct/Checked:	<u> </u>	N
RAD Screen <0.5 mR/hr:	<u> </u>	N

Relinquished by: (Signature)
Joseph S. [Signature]
 Date: *09/23/2021* Time: *1600*

Received by: (Signature)
[Signature]
 Date: _____ Time: _____

Received for lab by: (Signature)
[Signature]
 Date: *9/24/21* Time: *9:45*

Trip Blank Received: Yes/No
 HCl/MeOH
 TBR
 Temp: *25.1* °C
 Bottles Received: *24*

If preservation required by Login: Date/Time
 Hold:
 Condition: NCF / OK

1100 Olive Way
Suite 800
Seattle, WA 98101

630 Plaza Dr., Ste. 600
Highlands Ranch, CO 80129

Report to: **Ada Hamilton/Alex Laws**

Email To: **alexander.laws@arcadis.com; Ada.Hamilton@ar**

Project Description: **97502**

City/State Collected: **SEDRO-WOOLLEY, WA**

Please Circle: PT MT CT ET

Phone: **206-325-5254**

Client Project # **30064310 07.21-Plan**

Lab Project # **CHEVARCWA-97502**

Collected by (print): **JOSEPH SEPUL**

Site/Facility ID # **640 METCALF ST SEDRO-**

P.O. #

Collected by (signature):
 Immediately Packed on Ice N Y

Rush? (Lab MUST Be Notified)
 Same Day Five Day
 Next Day 5 Day (Rad Only)
 Two Day 10 Day (Rad Only)
 Three Day

Quote #
 Date Results Needed

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	soil BTEXM 8260D 40mlAmb/MeOH10ml/Syr	soil NWTPHDX NOSGT 8ozClr-NoPres	soil NWTPHGX 40mlAmb/MeOH10ml/Syr	soil Pb 6010 8ozClr-NoPres	water BTEXM 8260D 40mlAmb-HCl	water NWTPHDX NOSGT 40mlAmb-HCl-BT	water NWTPHGX 40mlAmb HCl	water PAHs 8270ESIM 40mlAmb-NoPres-WT	water Total Pb 6010 250mlHDPE-HNO3
TRIP BLANK	—	SS	—	—	—	4	X	X							
		SS													
		SS													
		SS													
		SS													
		SS													
		SS													
		SS													
		SS													

* Matrix:
 SS - Soil AIR - Air F - Filter
 GW - Groundwater B - Bioassay
 WW - WasteWater
 DW - Drinking Water
 OT - Other

Remarks:
 Samples returned via: UPS FedEx Courier
 Tracking #

Sample Receipt Checklist
 COC Seal Present/Intact: NP Y N
 COC Signed/Accurate: Y N
 Bottles arrive intact: Y N
 Correct bottles used: Y N
 Sufficient volume sent: Y N
 If Applicable
 VOA Zero Headspace: Y N
 Preservation Correct/Checked: Y N
 RAD Screen <0.5 mR/hr: Y N

Relinquished by: (Signature) **JOSEPH SEPUL**

Date: **07/23/2021**

Time: **1600**

Received by: (Signature)

Trip Blank Received: Yes/No
 Yes No
 HCl/MeOH
 TBR

Relinquished by: (Signature)

Date:

Time:

Received by: (Signature)

Temp: **25.1-28.5** °C
 Bottles Received: **24**

If preservation required by Login: Date/Time

Relinquished by: (Signature)

Date:

Time:

Received for lab by: (Signature)

Date: **7/24/21** Time: **945**

Hold: Condition: **NCF 10**



12065 Lebanon Rd Mount Juliet, TN 37122
 Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at:
<https://info.pacelabs.com/hubs/pas-standard-terms.pdf>

SDG # **U1408935**

Table #

Acctnum: **CHEVARCWA**

Template: **T194612**

Prelogin: **P871785**

PM: **110 - Brian Ford**

PB: **mm9/8/21**

Shipped Via:

Remarks Sample # (lab only)

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
Total Solids	67.4		1	09/30/2021 09:21	WG1748511

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Lead	1.13		0.308	0.741	1	09/30/2021 18:24	WG1748285

Volatile Organic Compounds (GC) by Method NWTPHGX

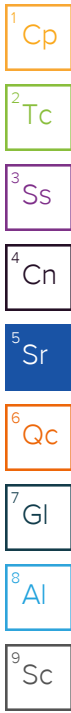
Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Gasoline Range Organics-NWTPH	U		1.73	5.10	25	10/01/2021 12:44	WG1749280
(S) a,a,a-Trifluorotoluene(FID)	112			77.0-120		10/01/2021 12:44	WG1749280

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Benzene	0.00447		0.000953	0.00204	1	10/01/2021 09:59	WG1749857
Toluene	0.00619	J	0.00265	0.0102	1	10/01/2021 09:59	WG1749857
Ethylbenzene	U		0.00150	0.00510	1	10/01/2021 09:59	WG1749857
Total Xylenes	0.0112	J	0.00180	0.0133	1	10/01/2021 09:59	WG1749857
Methyl tert-butyl ether	U		0.000715	0.00204	1	10/01/2021 09:59	WG1749857
(S) Toluene-d8	107			75.0-131		10/01/2021 09:59	WG1749857
(S) 4-Bromofluorobenzene	99.9			67.0-138		10/01/2021 09:59	WG1749857
(S) 1,2-Dichloroethane-d4	125			70.0-130		10/01/2021 09:59	WG1749857

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Diesel Range Organics (DRO)	U		1.97	5.93	1	10/03/2021 05:38	WG1749742
Residual Range Organics (RRO)	6.32	J	4.94	14.8	1	10/03/2021 05:38	WG1749742
(S) o-Terphenyl	45.1			18.0-148		10/03/2021 05:38	WG1749742



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	73.2		1	09/30/2021 09:21	WG1748511

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Lead	2.66		0.284	0.683	1	09/30/2021 18:27	WG1748285

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Gasoline Range Organics-NWTPH	U		1.54	4.54	25	10/01/2021 13:05	WG1749280
(S) a,a,a-Trifluorotoluene(FID)	113			77.0-120		10/01/2021 13:05	WG1749280

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	0.00291		0.000848	0.00182	1	10/01/2021 10:18	WG1749857
Toluene	0.00439	J	0.00236	0.00908	1	10/01/2021 10:18	WG1749857
Ethylbenzene	U		0.00134	0.00454	1	10/01/2021 10:18	WG1749857
Total Xylenes	0.00632	J	0.00160	0.0118	1	10/01/2021 10:18	WG1749857
Methyl tert-butyl ether	U		0.000636	0.00182	1	10/01/2021 10:18	WG1749857
(S) Toluene-d8	107			75.0-131		10/01/2021 10:18	WG1749857
(S) 4-Bromofluorobenzene	98.9			67.0-138		10/01/2021 10:18	WG1749857
(S) 1,2-Dichloroethane-d4	122			70.0-130		10/01/2021 10:18	WG1749857

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Diesel Range Organics (DRO)	U		1.82	5.47	1	10/02/2021 22:42	WG1749742
Residual Range Organics (RRO)	U		4.55	13.7	1	10/02/2021 22:42	WG1749742
(S) o-Terphenyl	43.4			18.0-148		10/02/2021 22:42	WG1749742



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
Total Solids	67.5		1	09/30/2021 09:21	WG1748511

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Lead	1.92		0.308	0.741	1	09/30/2021 18:30	WG1748285

Volatile Organic Compounds (GC) by Method NWTPHGX

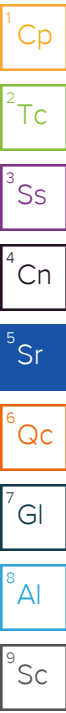
Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Gasoline Range Organics-NWTPH	2.02	J	1.68	4.96	25.3	10/01/2021 13:27	WG1749280
(S) a,a,a-Trifluorotoluene(FID)	114			77.0-120		10/01/2021 13:27	WG1749280

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Benzene	0.0651		0.000925	0.00198	1.01	10/01/2021 10:38	WG1749857
Toluene	0.0183		0.00257	0.00990	1.01	10/01/2021 10:38	WG1749857
Ethylbenzene	0.119		0.00146	0.00496	1.01	10/01/2021 10:38	WG1749857
Total Xylenes	0.345		0.00174	0.0129	1.01	10/01/2021 10:38	WG1749857
Methyl tert-butyl ether	U		0.000692	0.00198	1.01	10/01/2021 10:38	WG1749857
(S) Toluene-d8	106			75.0-131		10/01/2021 10:38	WG1749857
(S) 4-Bromofluorobenzene	100			67.0-138		10/01/2021 10:38	WG1749857
(S) 1,2-Dichloroethane-d4	125			70.0-130		10/01/2021 10:38	WG1749857

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Diesel Range Organics (DRO)	2.21	J	1.97	5.93	1	10/03/2021 05:51	WG1749742
Residual Range Organics (RRO)	45.4		4.94	14.8	1	10/03/2021 05:51	WG1749742
(S) o-Terphenyl	41.0			18.0-148		10/03/2021 05:51	WG1749742



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
Total Solids	75.9		1	09/30/2021 09:21	WG1748511

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Lead	U		0.274	0.658	1	09/30/2021 18:11	WG1748285

Volatile Organic Compounds (GC) by Method NWTPHGX

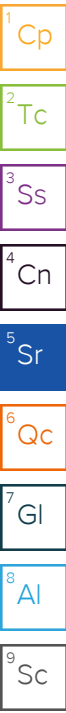
Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Gasoline Range Organics-NWTPH	U		1.44	4.24	25	10/01/2021 13:48	WG1749280
(S) a,a,a-Trifluorotoluene(FID)	114			77.0-120		10/01/2021 13:48	WG1749280

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Benzene	0.00275		0.000792	0.00170	1	10/01/2021 10:57	WG1749857
Toluene	0.0290		0.00221	0.00848	1	10/01/2021 10:57	WG1749857
Ethylbenzene	0.0309		0.00125	0.00424	1	10/01/2021 10:57	WG1749857
Total Xylenes	0.171		0.00149	0.0110	1	10/01/2021 10:57	WG1749857
Methyl tert-butyl ether	U		0.000594	0.00170	1	10/01/2021 10:57	WG1749857
(S) Toluene-d8	107			75.0-131		10/01/2021 10:57	WG1749857
(S) 4-Bromofluorobenzene	100			67.0-138		10/01/2021 10:57	WG1749857
(S) 1,2-Dichloroethane-d4	125			70.0-130		10/01/2021 10:57	WG1749857

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Diesel Range Organics (DRO)	U	UJ J3 J6	1.75	5.27	1	10/02/2021 22:55	WG1749742
Residual Range Organics (RRO)	U		4.38	13.2	1	10/02/2021 22:55	WG1749742
(S) o-Terphenyl	56.3			18.0-148		10/02/2021 22:55	WG1749742



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
Total Solids	68.0		1	09/30/2021 09:21	WG1748511

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Lead	4.67		0.306	0.736	1	09/30/2021 18:39	WG1748285

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Gasoline Range Organics-NWTPH	9.34		1.71	5.04	25	10/01/2021 14:10	WG1749280
(S) a,a,a-Trifluorotoluene(FID)	105			77.0-120		10/01/2021 14:10	WG1749280

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Benzene	0.0166		0.000942	0.00202	1	10/01/2021 11:16	WG1749857
Toluene	0.0150		0.00262	0.0101	1	10/01/2021 11:16	WG1749857
Ethylbenzene	0.206		0.00149	0.00504	1	10/01/2021 11:16	WG1749857
Total Xylenes	0.781		0.00178	0.0131	1	10/01/2021 11:16	WG1749857
Methyl tert-butyl ether	U		0.000706	0.00202	1	10/01/2021 11:16	WG1749857
(S) Toluene-d8	107			75.0-131		10/01/2021 11:16	WG1749857
(S) 4-Bromofluorobenzene	101			67.0-138		10/01/2021 11:16	WG1749857
(S) 1,2-Dichloroethane-d4	122			70.0-130		10/01/2021 11:16	WG1749857

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Diesel Range Organics (DRO)	3.80	J	1.96	5.89	1	10/03/2021 06:04	WG1749742
Residual Range Organics (RRO)	33.4		4.90	14.7	1	10/03/2021 06:04	WG1749742
(S) o-Terphenyl	39.6			18.0-148		10/03/2021 06:04	WG1749742



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
Total Solids	78.7		1	09/30/2021 09:21	WG1748511

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Lead	0.837		0.264	0.635	1	09/30/2021 18:41	WG1748285

Volatile Organic Compounds (GC) by Method NWTPHGX

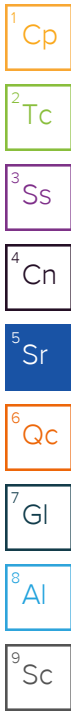
Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Gasoline Range Organics-NWTPH	3.45	J	1.35	3.98	25	10/01/2021 14:31	WG1749280
(S) a,a,a-Trifluorotoluene(FID)	111			77.0-120		10/01/2021 14:31	WG1749280

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Benzene	0.00304		0.000743	0.00159	1	10/01/2021 11:35	WG1749857
Toluene	0.0593		0.00207	0.00795	1	10/01/2021 11:35	WG1749857
Ethylbenzene	0.0700		0.00117	0.00398	1	10/01/2021 11:35	WG1749857
Total Xylenes	0.359		0.00140	0.0103	1	10/01/2021 11:35	WG1749857
Methyl tert-butyl ether	U		0.000557	0.00159	1	10/01/2021 11:35	WG1749857
(S) Toluene-d8	107			75.0-131		10/01/2021 11:35	WG1749857
(S) 4-Bromofluorobenzene	99.2			67.0-138		10/01/2021 11:35	WG1749857
(S) 1,2-Dichloroethane-d4	123			70.0-130		10/01/2021 11:35	WG1749857

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Diesel Range Organics (DRO)	1.80	J	1.69	5.08	1	10/03/2021 04:19	WG1749742
Residual Range Organics (RRO)	U		4.23	12.7	1	10/03/2021 04:19	WG1749742
(S) o-Terphenyl	52.8			18.0-148		10/03/2021 04:19	WG1749742



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
Total Solids	85.1		1	09/30/2021 09:21	WG1748511

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Lead	0.886		0.244	0.587	1	09/30/2021 18:44	WG1748285

Volatile Organic Compounds (GC) by Method NWTPHGX

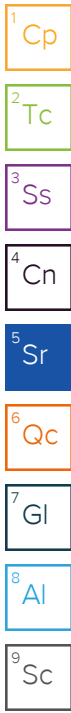
Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Gasoline Range Organics-NWTPH	U		1.16	3.43	25	10/01/2021 14:53	WG1749280
(S) a,a,a-Trifluorotoluene(FID)	113			77.0-120		10/01/2021 14:53	WG1749280

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Benzene	0.00124	J	0.000641	0.00137	1	10/01/2021 11:54	WG1749857
Toluene	0.00196	J	0.00178	0.00686	1	10/01/2021 11:54	WG1749857
Ethylbenzene	U		0.00101	0.00343	1	10/01/2021 11:54	WG1749857
Total Xylenes	0.00290	J	0.00121	0.00892	1	10/01/2021 11:54	WG1749857
Methyl tert-butyl ether	U		0.000480	0.00137	1	10/01/2021 11:54	WG1749857
(S) Toluene-d8	109			75.0-131		10/01/2021 11:54	WG1749857
(S) 4-Bromofluorobenzene	99.1			67.0-138		10/01/2021 11:54	WG1749857
(S) 1,2-Dichloroethane-d4	120			70.0-130		10/01/2021 11:54	WG1749857

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Diesel Range Organics (DRO)	U		1.56	4.70	1	10/03/2021 04:32	WG1749742
Residual Range Organics (RRO)	U		3.91	11.7	1	10/03/2021 04:32	WG1749742
(S) o-Terphenyl	53.7			18.0-148		10/03/2021 04:32	WG1749742



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
Total Solids	78.2		1	09/30/2021 09:21	WG1748511

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Lead	1.34		0.266	0.639	1	09/30/2021 18:47	WG1748285

Volatile Organic Compounds (GC) by Method NWTPHGX

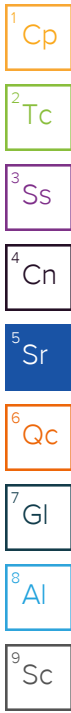
Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Gasoline Range Organics-NWTPH	3.92	J	1.38	4.06	25	10/01/2021 15:14	WG1749280
(S) a,a,a-Trifluorotoluene(FID)	105			77.0-120		10/01/2021 15:14	WG1749280

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Benzene	0.00514		0.000759	0.00163	1	10/01/2021 12:13	WG1749857
Toluene	U		0.00211	0.00813	1	10/01/2021 12:13	WG1749857
Ethylbenzene	0.0366		0.00120	0.00406	1	10/01/2021 12:13	WG1749857
Total Xylenes	0.265		0.00143	0.0106	1	10/01/2021 12:13	WG1749857
Methyl tert-butyl ether	U		0.000569	0.00163	1	10/01/2021 12:13	WG1749857
(S) Toluene-d8	107			75.0-131		10/01/2021 12:13	WG1749857
(S) 4-Bromofluorobenzene	99.6			67.0-138		10/01/2021 12:13	WG1749857
(S) 1,2-Dichloroethane-d4	120			70.0-130		10/01/2021 12:13	WG1749857

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Diesel Range Organics (DRO)	U		1.70	5.12	1	10/03/2021 04:45	WG1749742
Residual Range Organics (RRO)	U		4.26	12.8	1	10/03/2021 04:45	WG1749742
(S) o-Terphenyl	42.9			18.0-148		10/03/2021 04:45	WG1749742



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	72.1		1	09/30/2021 09:21	WG1748511

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Lead	4.61		0.289	0.694	1	09/30/2021 18:53	WG1748285

Volatile Organic Compounds (GC) by Method NWTPHGX

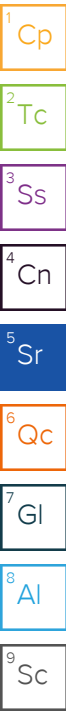
Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Gasoline Range Organics-NWTPH	U		1.57	4.64	25	10/01/2021 15:57	WG1749280
(S) a,a,a-Trifluorotoluene(FID)	114			77.0-120		10/01/2021 15:57	WG1749280

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	0.0210		0.000867	0.00186	1	10/01/2021 12:51	WG1749857
Toluene	0.00247	J	0.00241	0.00928	1	10/01/2021 12:51	WG1749857
Ethylbenzene	U		0.00137	0.00464	1	10/01/2021 12:51	WG1749857
Total Xylenes	0.00236	J	0.00163	0.0121	1	10/01/2021 12:51	WG1749857
Methyl tert-butyl ether	U		0.000650	0.00186	1	10/01/2021 12:51	WG1749857
(S) Toluene-d8	108			75.0-131		10/01/2021 12:51	WG1749857
(S) 4-Bromofluorobenzene	100			67.0-138		10/01/2021 12:51	WG1749857
(S) 1,2-Dichloroethane-d4	123			70.0-130		10/01/2021 12:51	WG1749857

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Diesel Range Organics (DRO)	2.57	J	1.85	5.55	1	10/03/2021 05:11	WG1749742
Residual Range Organics (RRO)	15.4		4.62	13.9	1	10/03/2021 05:11	WG1749742
(S) o-Terphenyl	48.4			18.0-148		10/03/2021 05:11	WG1749742



Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	44.1	B	31.6	100	1	10/01/2021 05:33	WG1749141
(S) a,a,a-Trifluorotoluene(FID)	92.3			78.0-120		10/01/2021 05:33	WG1749141

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	10/01/2021 09:19	WG1749770
Toluene	U		0.278	1.00	1	10/01/2021 09:19	WG1749770
Ethylbenzene	U		0.137	1.00	1	10/01/2021 09:19	WG1749770
Total Xylenes	U		0.174	3.00	1	10/01/2021 09:19	WG1749770
Methyl tert-butyl ether	U		0.101	1.00	1	10/01/2021 09:19	WG1749770
(S) Toluene-d8	98.8			80.0-120		10/01/2021 09:19	WG1749770
(S) 4-Bromofluorobenzene	92.5			77.0-126		10/01/2021 09:19	WG1749770
(S) 1,2-Dichloroethane-d4	114			70.0-130		10/01/2021 09:19	WG1749770

January 18, 2022

Revised Report

Arcadis - Chevron - WA

Sample Delivery Group: L1408935
Samples Received: 09/24/2021
Project Number: 30064310 07.21-Plan
Description: 97502
Site: 640 METCALF ST SEDRO-WOOLLEY
Report To: Ada Hamilton/Alex Laws
1100 Olive Way
Suite 800
Seattle, WA 98101

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

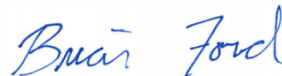
6 Qc

7 Gl

8 Al

9 Sc

Entire Report Reviewed By:



Brian Ford
Project Manager

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Pace Analytical National12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

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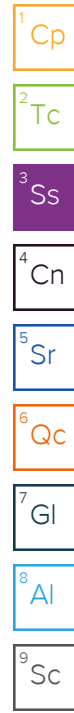
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SAMPLE SUMMARY

SB-1-19.0-20.0_210923 L1408935-01 Solid

Collected by M. Andrews Collected date/time 09/23/21 12:31 Received date/time 09/24/21 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1748511	1	09/30/21 09:13	09/30/21 09:21	CMK	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1748285	1	09/30/21 08:16	09/30/21 18:24	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1749280	25	09/23/21 12:31	10/01/21 12:44	MGF	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1749857	1	09/23/21 12:31	10/01/21 09:59	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1749742	1	10/01/21 21:28	10/03/21 05:38	CAG	Mt. Juliet, TN



SB-1-7.5-8.5_210923 L1408935-02 Solid

Collected by M. Andrews Collected date/time 09/23/21 12:18 Received date/time 09/24/21 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1748511	1	09/30/21 09:13	09/30/21 09:21	CMK	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1748285	1	09/30/21 08:16	09/30/21 18:27	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1749280	25	09/23/21 12:18	10/01/21 13:05	MGF	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1749857	1	09/23/21 12:18	10/01/21 10:18	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1749742	1	10/01/21 21:28	10/02/21 22:42	CAG	Mt. Juliet, TN

SB-1-15.0-16.0_210923 L1408935-03 Solid

Collected by M. Andrews Collected date/time 09/23/21 12:27 Received date/time 09/24/21 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1748511	1	09/30/21 09:13	09/30/21 09:21	CMK	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1748285	1	09/30/21 08:16	09/30/21 18:30	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1749280	25.3	09/23/21 12:27	10/01/21 13:27	MGF	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1749857	1.01	09/23/21 12:27	10/01/21 10:38	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1749742	1	10/01/21 21:28	10/03/21 05:51	CAG	Mt. Juliet, TN

MW-17-11.5-13.0_210923 L1408935-04 Solid

Collected by M. Andrews Collected date/time 09/23/21 11:34 Received date/time 09/24/21 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1748511	1	09/30/21 09:13	09/30/21 09:21	CMK	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1748285	1	09/30/21 08:16	09/30/21 18:11	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1749280	25	09/23/21 11:34	10/01/21 13:48	MGF	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1749857	1	09/23/21 11:34	10/01/21 10:57	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1749742	1	10/01/21 21:28	10/02/21 22:55	CAG	Mt. Juliet, TN

MW-17-19.0-20.0_210923 L1408935-05 Solid

Collected by M. Andrews Collected date/time 09/23/21 11:26 Received date/time 09/24/21 09:45

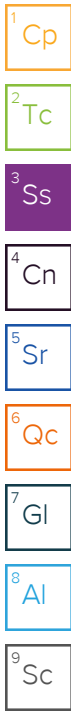
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1748511	1	09/30/21 09:13	09/30/21 09:21	CMK	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1748285	1	09/30/21 08:16	09/30/21 18:39	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1749280	25	09/23/21 11:26	10/01/21 14:10	MGF	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1749857	1	09/23/21 11:26	10/01/21 11:16	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1749742	1	10/01/21 21:28	10/03/21 06:04	CAG	Mt. Juliet, TN

SAMPLE SUMMARY

MW-17-15.0-16.0_210923 L1408935-06 Solid

Collected by M. Andrews Collected date/time 09/23/21 11:22 Received date/time 09/24/21 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1748511	1	09/30/21 09:13	09/30/21 09:21	CMK	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1748285	1	09/30/21 08:16	09/30/21 18:41	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1749280	25	09/23/21 11:22	10/01/21 14:31	MGF	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1749857	1	09/23/21 11:22	10/01/21 11:35	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1749742	1	10/01/21 21:28	10/03/21 04:19	CAG	Mt. Juliet, TN



MW-17-8.0-9.0_210923 L1408935-07 Solid

Collected by M. Andrews Collected date/time 09/23/21 11:29 Received date/time 09/24/21 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1748511	1	09/30/21 09:13	09/30/21 09:21	CMK	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1748285	1	09/30/21 08:16	09/30/21 18:44	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1749280	25	09/23/21 11:29	10/01/21 14:53	MGF	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1749857	1	09/23/21 11:29	10/01/21 11:54	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1749742	1	10/01/21 21:28	10/03/21 04:32	CAG	Mt. Juliet, TN

MW-18-19.0-20.0_210923 L1408935-08 Solid

Collected by M. Andrews Collected date/time 09/23/21 10:31 Received date/time 09/24/21 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1748511	1	09/30/21 09:13	09/30/21 09:21	CMK	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1748285	1	09/30/21 08:16	09/30/21 18:47	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1749280	25	09/23/21 10:31	10/01/21 15:14	MGF	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1749857	1	09/23/21 10:31	10/01/21 12:13	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1749742	1	10/01/21 21:28	10/03/21 04:45	CAG	Mt. Juliet, TN

SB-3-18.0-19.0_210923 L1408935-10 Solid

Collected by M. Andrews Collected date/time 09/23/21 07:58 Received date/time 09/24/21 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1748511	1	09/30/21 09:13	09/30/21 09:21	CMK	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1748285	1	09/30/21 08:16	09/30/21 18:53	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1749280	25	09/23/21 07:58	10/01/21 15:57	MGF	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1749857	1	09/23/21 07:58	10/01/21 12:51	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1749742	1	10/01/21 21:28	10/03/21 05:11	CAG	Mt. Juliet, TN


TRIP BLANK_210923 L1408935-11 GW

Collected by M. Andrews Collected date/time 09/23/21 00:00 Received date/time 09/24/21 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1749141	1	10/01/21 05:33	10/01/21 05:33	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1749770	1	10/01/21 09:19	10/01/21 09:19	BMB	Mt. Juliet, TN

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Brian Ford
Project Manager

Report Revision History

Level II Report - Version 1: 10/06/21 19:47

Project Narrative

removed DUP-2-092321

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
Total Solids	67.4		1	09/30/2021 09:21	WG1748511

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Lead	1.13		0.308	0.741	1	09/30/2021 18:24	WG1748285

Volatile Organic Compounds (GC) by Method NWTPHGX

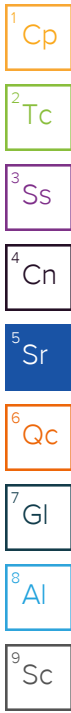
Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Gasoline Range Organics-NWTPH	U		1.73	5.10	25	10/01/2021 12:44	WG1749280
(S) a,a,a-Trifluorotoluene(FID)	112			77.0-120		10/01/2021 12:44	WG1749280

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Benzene	0.00447		0.000953	0.00204	1	10/01/2021 09:59	WG1749857
Toluene	0.00619	J	0.00265	0.0102	1	10/01/2021 09:59	WG1749857
Ethylbenzene	U		0.00150	0.00510	1	10/01/2021 09:59	WG1749857
Total Xylenes	0.0112	J	0.00180	0.0133	1	10/01/2021 09:59	WG1749857
Methyl tert-butyl ether	U		0.000715	0.00204	1	10/01/2021 09:59	WG1749857
(S) Toluene-d8	107			75.0-131		10/01/2021 09:59	WG1749857
(S) 4-Bromofluorobenzene	99.9			67.0-138		10/01/2021 09:59	WG1749857
(S) 1,2-Dichloroethane-d4	125			70.0-130		10/01/2021 09:59	WG1749857

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Diesel Range Organics (DRO)	U		1.97	5.93	1	10/03/2021 05:38	WG1749742
Residual Range Organics (RRO)	6.32	J	4.94	14.8	1	10/03/2021 05:38	WG1749742
(S) o-Terphenyl	45.1			18.0-148		10/03/2021 05:38	WG1749742



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
Total Solids	73.2		1	09/30/2021 09:21	WG1748511

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Lead	2.66		0.284	0.683	1	09/30/2021 18:27	WG1748285

Volatile Organic Compounds (GC) by Method NWTPHGX

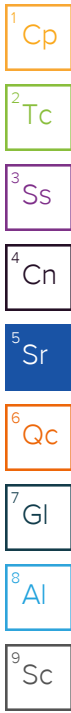
Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Gasoline Range Organics-NWTPH	U		1.54	4.54	25	10/01/2021 13:05	WG1749280
(S) a,a,a-Trifluorotoluene(FID)	113			77.0-120		10/01/2021 13:05	WG1749280

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Benzene	0.00291		0.000848	0.00182	1	10/01/2021 10:18	WG1749857
Toluene	0.00439	J	0.00236	0.00908	1	10/01/2021 10:18	WG1749857
Ethylbenzene	U		0.00134	0.00454	1	10/01/2021 10:18	WG1749857
Total Xylenes	0.00632	J	0.00160	0.0118	1	10/01/2021 10:18	WG1749857
Methyl tert-butyl ether	U		0.000636	0.00182	1	10/01/2021 10:18	WG1749857
(S) Toluene-d8	107			75.0-131		10/01/2021 10:18	WG1749857
(S) 4-Bromofluorobenzene	98.9			67.0-138		10/01/2021 10:18	WG1749857
(S) 1,2-Dichloroethane-d4	122			70.0-130		10/01/2021 10:18	WG1749857

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Diesel Range Organics (DRO)	U		1.82	5.47	1	10/02/2021 22:42	WG1749742
Residual Range Organics (RRO)	U		4.55	13.7	1	10/02/2021 22:42	WG1749742
(S) o-Terphenyl	43.4			18.0-148		10/02/2021 22:42	WG1749742



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
Total Solids	67.5		1	09/30/2021 09:21	WG1748511

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Lead	1.92		0.308	0.741	1	09/30/2021 18:30	WG1748285

Volatile Organic Compounds (GC) by Method NWTPHGX

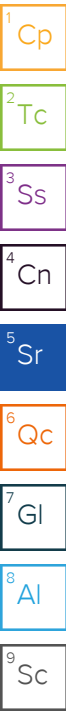
Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Gasoline Range Organics-NWTPH	2.02	J	1.68	4.96	25.3	10/01/2021 13:27	WG1749280
(S) a,a,a-Trifluorotoluene(FID)	114			77.0-120		10/01/2021 13:27	WG1749280

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Benzene	0.0651		0.000925	0.00198	1.01	10/01/2021 10:38	WG1749857
Toluene	0.0183		0.00257	0.00990	1.01	10/01/2021 10:38	WG1749857
Ethylbenzene	0.119		0.00146	0.00496	1.01	10/01/2021 10:38	WG1749857
Total Xylenes	0.345		0.00174	0.0129	1.01	10/01/2021 10:38	WG1749857
Methyl tert-butyl ether	U		0.000692	0.00198	1.01	10/01/2021 10:38	WG1749857
(S) Toluene-d8	106			75.0-131		10/01/2021 10:38	WG1749857
(S) 4-Bromofluorobenzene	100			67.0-138		10/01/2021 10:38	WG1749857
(S) 1,2-Dichloroethane-d4	125			70.0-130		10/01/2021 10:38	WG1749857

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Diesel Range Organics (DRO)	2.21	J	1.97	5.93	1	10/03/2021 05:51	WG1749742
Residual Range Organics (RRO)	45.4		4.94	14.8	1	10/03/2021 05:51	WG1749742
(S) o-Terphenyl	41.0			18.0-148		10/03/2021 05:51	WG1749742



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
Total Solids	75.9		1	09/30/2021 09:21	WG1748511

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Lead	U		0.274	0.658	1	09/30/2021 18:11	WG1748285

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Gasoline Range Organics-NWTPH	U		1.44	4.24	25	10/01/2021 13:48	WG1749280
(S) a,a,a-Trifluorotoluene(FID)	114			77.0-120		10/01/2021 13:48	WG1749280

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Benzene	0.00275		0.000792	0.00170	1	10/01/2021 10:57	WG1749857
Toluene	0.0290		0.00221	0.00848	1	10/01/2021 10:57	WG1749857
Ethylbenzene	0.0309		0.00125	0.00424	1	10/01/2021 10:57	WG1749857
Total Xylenes	0.171		0.00149	0.0110	1	10/01/2021 10:57	WG1749857
Methyl tert-butyl ether	U		0.000594	0.00170	1	10/01/2021 10:57	WG1749857
(S) Toluene-d8	107			75.0-131		10/01/2021 10:57	WG1749857
(S) 4-Bromofluorobenzene	100			67.0-138		10/01/2021 10:57	WG1749857
(S) 1,2-Dichloroethane-d4	125			70.0-130		10/01/2021 10:57	WG1749857

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Diesel Range Organics (DRO)	U	J3 J6	1.75	5.27	1	10/02/2021 22:55	WG1749742
Residual Range Organics (RRO)	U		4.38	13.2	1	10/02/2021 22:55	WG1749742
(S) o-Terphenyl	56.3			18.0-148		10/02/2021 22:55	WG1749742

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
Total Solids	68.0		1	09/30/2021 09:21	WG1748511

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Lead	4.67		0.306	0.736	1	09/30/2021 18:39	WG1748285

Volatile Organic Compounds (GC) by Method NWTPHGX

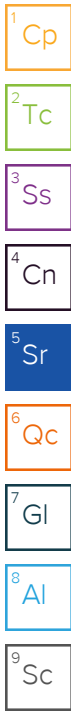
Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Gasoline Range Organics-NWTPH	9.34		1.71	5.04	25	10/01/2021 14:10	WG1749280
(S) a,a,a-Trifluorotoluene(FID)	105			77.0-120		10/01/2021 14:10	WG1749280

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Benzene	0.0166		0.000942	0.00202	1	10/01/2021 11:16	WG1749857
Toluene	0.0150		0.00262	0.0101	1	10/01/2021 11:16	WG1749857
Ethylbenzene	0.206		0.00149	0.00504	1	10/01/2021 11:16	WG1749857
Total Xylenes	0.781		0.00178	0.0131	1	10/01/2021 11:16	WG1749857
Methyl tert-butyl ether	U		0.000706	0.00202	1	10/01/2021 11:16	WG1749857
(S) Toluene-d8	107			75.0-131		10/01/2021 11:16	WG1749857
(S) 4-Bromofluorobenzene	101			67.0-138		10/01/2021 11:16	WG1749857
(S) 1,2-Dichloroethane-d4	122			70.0-130		10/01/2021 11:16	WG1749857

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Diesel Range Organics (DRO)	3.80	J	1.96	5.89	1	10/03/2021 06:04	WG1749742
Residual Range Organics (RRO)	33.4		4.90	14.7	1	10/03/2021 06:04	WG1749742
(S) o-Terphenyl	39.6			18.0-148		10/03/2021 06:04	WG1749742



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
Total Solids	78.7		1	09/30/2021 09:21	WG1748511

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Lead	0.837		0.264	0.635	1	09/30/2021 18:41	WG1748285

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Gasoline Range Organics-NWTPH	3.45	J	1.35	3.98	25	10/01/2021 14:31	WG1749280
(S) a,a,a-Trifluorotoluene(FID)	111			77.0-120		10/01/2021 14:31	WG1749280

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Benzene	0.00304		0.000743	0.00159	1	10/01/2021 11:35	WG1749857
Toluene	0.0593		0.00207	0.00795	1	10/01/2021 11:35	WG1749857
Ethylbenzene	0.0700		0.00117	0.00398	1	10/01/2021 11:35	WG1749857
Total Xylenes	0.359		0.00140	0.0103	1	10/01/2021 11:35	WG1749857
Methyl tert-butyl ether	U		0.000557	0.00159	1	10/01/2021 11:35	WG1749857
(S) Toluene-d8	107			75.0-131		10/01/2021 11:35	WG1749857
(S) 4-Bromofluorobenzene	99.2			67.0-138		10/01/2021 11:35	WG1749857
(S) 1,2-Dichloroethane-d4	123			70.0-130		10/01/2021 11:35	WG1749857

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Diesel Range Organics (DRO)	1.80	J	1.69	5.08	1	10/03/2021 04:19	WG1749742
Residual Range Organics (RRO)	U		4.23	12.7	1	10/03/2021 04:19	WG1749742
(S) o-Terphenyl	52.8			18.0-148		10/03/2021 04:19	WG1749742



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
Total Solids	85.1		1	09/30/2021 09:21	WG1748511

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Lead	0.886		0.244	0.587	1	09/30/2021 18:44	WG1748285

Volatile Organic Compounds (GC) by Method NWTPHGX

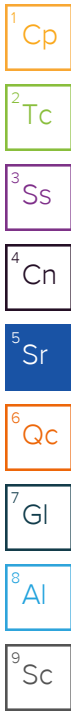
Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Gasoline Range Organics-NWTPH	U		1.16	3.43	25	10/01/2021 14:53	WG1749280
(S) a,a,a-Trifluorotoluene(FID)	113			77.0-120		10/01/2021 14:53	WG1749280

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Benzene	0.00124	J	0.000641	0.00137	1	10/01/2021 11:54	WG1749857
Toluene	0.00196	J	0.00178	0.00686	1	10/01/2021 11:54	WG1749857
Ethylbenzene	U		0.00101	0.00343	1	10/01/2021 11:54	WG1749857
Total Xylenes	0.00290	J	0.00121	0.00892	1	10/01/2021 11:54	WG1749857
Methyl tert-butyl ether	U		0.000480	0.00137	1	10/01/2021 11:54	WG1749857
(S) Toluene-d8	109			75.0-131		10/01/2021 11:54	WG1749857
(S) 4-Bromofluorobenzene	99.1			67.0-138		10/01/2021 11:54	WG1749857
(S) 1,2-Dichloroethane-d4	120			70.0-130		10/01/2021 11:54	WG1749857

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Diesel Range Organics (DRO)	U		1.56	4.70	1	10/03/2021 04:32	WG1749742
Residual Range Organics (RRO)	U		3.91	11.7	1	10/03/2021 04:32	WG1749742
(S) o-Terphenyl	53.7			18.0-148		10/03/2021 04:32	WG1749742



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
Total Solids	78.2		1	09/30/2021 09:21	WG1748511

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Lead	1.34		0.266	0.639	1	09/30/2021 18:47	WG1748285

Volatile Organic Compounds (GC) by Method NWTPHGX

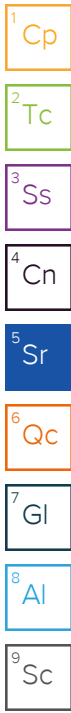
Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Gasoline Range Organics-NWTPH	3.92	J	1.38	4.06	25	10/01/2021 15:14	WG1749280
(S) a,a,a-Trifluorotoluene(FID)	105			77.0-120		10/01/2021 15:14	WG1749280

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Benzene	0.00514		0.000759	0.00163	1	10/01/2021 12:13	WG1749857
Toluene	U		0.00211	0.00813	1	10/01/2021 12:13	WG1749857
Ethylbenzene	0.0366		0.00120	0.00406	1	10/01/2021 12:13	WG1749857
Total Xylenes	0.265		0.00143	0.0106	1	10/01/2021 12:13	WG1749857
Methyl tert-butyl ether	U		0.000569	0.00163	1	10/01/2021 12:13	WG1749857
(S) Toluene-d8	107			75.0-131		10/01/2021 12:13	WG1749857
(S) 4-Bromofluorobenzene	99.6			67.0-138		10/01/2021 12:13	WG1749857
(S) 1,2-Dichloroethane-d4	120			70.0-130		10/01/2021 12:13	WG1749857

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Diesel Range Organics (DRO)	U		1.70	5.12	1	10/03/2021 04:45	WG1749742
Residual Range Organics (RRO)	U		4.26	12.8	1	10/03/2021 04:45	WG1749742
(S) o-Terphenyl	42.9			18.0-148		10/03/2021 04:45	WG1749742



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
Total Solids	72.1		1	09/30/2021 09:21	WG1748511

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Lead	4.61		0.289	0.694	1	09/30/2021 18:53	WG1748285

Volatile Organic Compounds (GC) by Method NWTPHGX

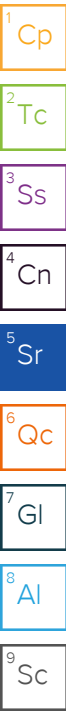
Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Gasoline Range Organics-NWTPH	U		1.57	4.64	25	10/01/2021 15:57	WG1749280
(S) a,a,a-Trifluorotoluene(FID)	114			77.0-120		10/01/2021 15:57	WG1749280

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Benzene	0.0210		0.000867	0.00186	1	10/01/2021 12:51	WG1749857
Toluene	0.00247	J	0.00241	0.00928	1	10/01/2021 12:51	WG1749857
Ethylbenzene	U		0.00137	0.00464	1	10/01/2021 12:51	WG1749857
Total Xylenes	0.00236	J	0.00163	0.0121	1	10/01/2021 12:51	WG1749857
Methyl tert-butyl ether	U		0.000650	0.00186	1	10/01/2021 12:51	WG1749857
(S) Toluene-d8	108			75.0-131		10/01/2021 12:51	WG1749857
(S) 4-Bromofluorobenzene	100			67.0-138		10/01/2021 12:51	WG1749857
(S) 1,2-Dichloroethane-d4	123			70.0-130		10/01/2021 12:51	WG1749857

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Diesel Range Organics (DRO)	2.57	J	1.85	5.55	1	10/03/2021 05:11	WG1749742
Residual Range Organics (RRO)	15.4		4.62	13.9	1	10/03/2021 05:11	WG1749742
(S) o-Terphenyl	48.4			18.0-148		10/03/2021 05:11	WG1749742



Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	44.1	<u>BJ</u>	31.6	100	1	10/01/2021 05:33	WG1749141
(S) a,a,a-Trifluorotoluene(FID)	92.3			78.0-120		10/01/2021 05:33	WG1749141

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	10/01/2021 09:19	WG1749770
Toluene	U		0.278	1.00	1	10/01/2021 09:19	WG1749770
Ethylbenzene	U		0.137	1.00	1	10/01/2021 09:19	WG1749770
Total Xylenes	U		0.174	3.00	1	10/01/2021 09:19	WG1749770
Methyl tert-butyl ether	U		0.101	1.00	1	10/01/2021 09:19	WG1749770
(S) Toluene-d8	98.8			80.0-120		10/01/2021 09:19	WG1749770
(S) 4-Bromofluorobenzene	92.5			77.0-126		10/01/2021 09:19	WG1749770
(S) 1,2-Dichloroethane-d4	114			70.0-130		10/01/2021 09:19	WG1749770

Method Blank (MB)

(MB) R3711081-1 09/30/21 09:21

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	%		%	%
Total Solids	0.00200			

1 Cp

2 Tc

3 Ss

L1408935-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1408935-04 09/30/21 09:21 • (DUP) R3711081-3 09/30/21 09:21

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	%	%		%		%
Total Solids	75.9	76.1	1	0.222		10

4 Cn

5 Sr

Laboratory Control Sample (LCS)

(LCS) R3711081-2 09/30/21 09:21

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	%	%	%	%	
Total Solids	50.0	50.0	100	85.0-115	

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3711334-1 09/30/21 18:05

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Lead	U		0.208	0.500

1 Cp

2 Tc

3 Ss

Laboratory Control Sample (LCS)

(LCS) R3711334-2 09/30/21 18:08

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Lead	100	99.3	99.3	80.0-120	

4 Cn

5 Sr

L1408935-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1408935-04 09/30/21 18:11 • (MS) R3711334-5 09/30/21 18:19 • (MSD) R3711334-6 09/30/21 18:22

Analyte	Spike Amount (dry)	Original Result (dry)	MS Result (dry)	MSD Result (dry)	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Lead	132	U	134	134	102	101	1	75.0-125			0.107	20

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3711746-2 10/01/21 01:42

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	45.6	J	31.6	100
(S) a,a,a-Trifluorotoluene(FID)	95.3			78.0-120

Laboratory Control Sample (LCS)

(LCS) R3711746-1 10/01/21 00:34

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5500	4740	86.2	70.0-124	
(S) a,a,a-Trifluorotoluene(FID)			101	78.0-120	

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Method Blank (MB)

(MB) R3712980-2 10/01/21 11:44

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Gasoline Range Organics-NWTPH	U		0.848	2.50
(S) a,a,a-Trifluorotoluene(FID)	112			77.0-120

Laboratory Control Sample (LCS)

(LCS) R3712980-1 10/01/21 11:01

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5.50	4.49	81.6	71.0-124	
(S) a,a,a-Trifluorotoluene(FID)			97.8	77.0-120	

L1408935-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1408935-04 10/01/21 13:48 • (MS) R3712980-3 10/01/21 19:54 • (MSD) R3712980-4 10/01/21 20:15

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Gasoline Range Organics-NWTPH	193	U	145	161	75.1	83.5	25	10.0-149			10.6	27
(S) a,a,a-Trifluorotoluene(FID)					101	105		77.0-120				

L1408938-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1408938-01 10/01/21 16:19 • (MS) R3712980-5 10/01/21 20:37 • (MSD) R3712980-6 10/01/21 20:58

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Gasoline Range Organics-NWTPH	232	U	184	172	79.4	74.3	25	10.0-149			6.72	27
(S) a,a,a-Trifluorotoluene(FID)					101	102		77.0-120				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3711739-2 10/01/21 05:59

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Benzene	U		0.0941	1.00
Ethylbenzene	U		0.137	1.00
Methyl tert-butyl ether	U		0.101	1.00
Toluene	U		0.278	1.00
Xylenes, Total	U		0.174	3.00
<i>(S) Toluene-d8</i>	98.7			80.0-120
<i>(S) 4-Bromofluorobenzene</i>	92.6			77.0-126
<i>(S) 1,2-Dichloroethane-d4</i>	109			70.0-130

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3711739-1 10/01/21 05:18 • (LCSD) R3711739-3 10/01/21 08:15

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	5.00	5.06	5.19	101	104	70.0-123			2.54	20
Ethylbenzene	5.00	5.03	5.11	101	102	79.0-123			1.58	20
Methyl tert-butyl ether	5.00	4.42	4.05	88.4	81.0	68.0-125			8.74	20
Toluene	5.00	5.19	4.95	104	99.0	79.0-120			4.73	20
Xylenes, Total	15.0	15.1	15.1	101	101	79.0-123			0.000	20
<i>(S) Toluene-d8</i>				99.7	96.2	80.0-120				
<i>(S) 4-Bromofluorobenzene</i>				92.8	96.6	77.0-126				
<i>(S) 1,2-Dichloroethane-d4</i>				111	111	70.0-130				

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3711907-2 10/01/21 07:27

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/kg		mg/kg	mg/kg
Benzene	U		0.000467	0.00100
Ethylbenzene	U		0.000737	0.00250
Methyl tert-butyl ether	U		0.000350	0.00100
Toluene	U		0.00130	0.00500
Xylenes, Total	U		0.000880	0.00650
(S) Toluene-d8	109			75.0-131
(S) 4-Bromofluorobenzene	100			67.0-138
(S) 1,2-Dichloroethane-d4	116			70.0-130

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3711907-1 10/01/21 06:11 • (LCSD) R3711907-3 10/01/21 08:39

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	mg/kg	mg/kg	mg/kg	%	%	%			%	%
Benzene	0.125	0.103	0.109	82.4	87.2	70.0-123			5.66	20
Ethylbenzene	0.125	0.108	0.115	86.4	92.0	74.0-126			6.28	20
Methyl tert-butyl ether	0.125	0.121	0.125	96.8	100	66.0-132			3.25	20
Toluene	0.125	0.111	0.117	88.8	93.6	75.0-121			5.26	20
Xylenes, Total	0.375	0.333	0.356	88.8	94.9	72.0-127			6.68	20
(S) Toluene-d8				107	106	75.0-131				
(S) 4-Bromofluorobenzene				102	101	67.0-138				
(S) 1,2-Dichloroethane-d4				129	130	70.0-130				

7 Gl

8 Al

9 Sc

L1408935-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1408935-04 10/01/21 10:57 • (MS) R3711907-4 10/01/21 16:20 • (MSD) R3711907-5 10/01/21 16:39

Analyte	Spike Amount (dry)	Original Result (dry)	MS Result (dry)	MSD Result (dry)	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Benzene	0.176	0.00275	0.0938	0.106	51.6	58.3	1	10.0-149			11.9	37
Ethylbenzene	0.176	0.0309	0.127	0.138	54.3	60.8	1	10.0-160			8.58	38
Methyl tert-butyl ether	0.176	U	0.154	0.151	87.1	85.7	1	11.0-147			1.67	35
Toluene	0.176	0.0290	0.124	0.137	53.9	61.1	1	10.0-156			9.62	38
Xylenes, Total	0.529	0.171	0.458	0.500	54.2	62.2	1	10.0-160			8.85	38
(S) Toluene-d8					107	107		75.0-131				
(S) 4-Bromofluorobenzene					97.9	99.7		67.0-138				
(S) 1,2-Dichloroethane-d4					122	120		70.0-130				

L1408938-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1408938-01 10/01/21 13:10 • (MS) R3711907-6 10/01/21 16:58 • (MSD) R3711907-7 10/01/21 17:17

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	0.210	0.00181	0.111	0.220	51.8	104	1	10.0-149		J3	66.0	37
Ethylbenzene	0.210	U	0.110	0.230	52.5	109	1	10.0-160		J3	70.1	38
Methyl tert-butyl ether	0.210	U	0.197	0.199	93.6	94.5	1	11.0-147			0.976	35
Toluene	0.210	U	0.123	0.243	58.5	116	1	10.0-156		J3	65.5	38
Xylenes, Total	0.631	0.00647	0.376	0.716	58.6	112	1	10.0-160		J3	62.2	38
<i>(S) Toluene-d8</i>					106	110		75.0-131				
<i>(S) 4-Bromofluorobenzene</i>					99.3	102		67.0-138				
<i>(S) 1,2-Dichloroethane-d4</i>					123	121		70.0-130				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3711968-1 10/02/21 22:16

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Diesel Range Organics (DRO)	U		1.33	4.00
Residual Range Organics (RRO)	U		3.33	10.0
<i>(S) o-Terphenyl</i>	58.3			18.0-148

Laboratory Control Sample (LCS)

(LCS) R3711968-2 10/02/21 22:29

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Diesel Range Organics (DRO)	50.0	33.3	66.6	50.0-150	
<i>(S) o-Terphenyl</i>			61.1	18.0-148	

L1408935-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1408935-04 10/02/21 22:55 • (MS) R3711968-3 10/02/21 23:08 • (MSD) R3711968-4 10/02/21 23:21

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Diesel Range Organics (DRO)	63.5	U	40.0	28.6	63.1	45.5	1	50.0-150		J3 J6	33.4	20
<i>(S) o-Terphenyl</i>					55.8	39.8		18.0-148				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

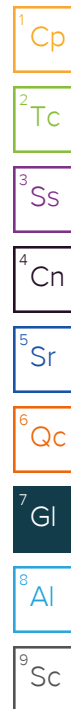
The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
MDL	Method Detection Limit.
MDL (dry)	Method Detection Limit.
RDL	Reported Detection Limit.
RDL (dry)	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
B	The same analyte is found in the associated blank.
J	The identification of the analyte is acceptable; the reported value is an estimate.
J3	The associated batch QC was outside the established quality control range for precision.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.



ACCREDITATIONS & LOCATIONS

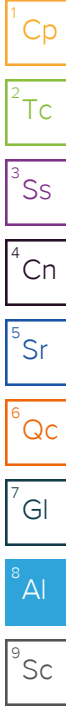
Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico ¹	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	KY90010	South Carolina	84004002
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas ⁵	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.



Company Name/Address:
Arcadis - Chevron - WA
 1100 Olive Way
 Suite 800
 Seattle, WA 98101

Billing Information:
 Attn: Accounts Payable
 630 Plaza Dr., Ste. 600
 Highlands Ranch, CO 80129

Pres
 Chk

Analysis / Container / Preservative

Chain of Custody Page 1 of 2

Report to:
Ada Hamilton/Alex Laws

Email To:
 alexander.laws@arcadis.com;Ada.Hamilton@ar

Project Description:
 97502

City/State Collected: *Sedro - Woolley, WA* Please Circle: PT MT CT ET

Phone: 206-325-5254

Client Project #
 30064310 07.21-Plan

Lab Project #
 CHEVARCWA-97502

Collected by (print):
M. Andrews

Site/Facility ID #
 640 METCALF ST SEDRO-

P.O. #

Collected by (signature):
[Signature]
 Immediately Packed on Ice N Y

Rush? (Lab MUST Be Notified)
 Same Day Five Day
 Next Day 5 Day (Rad Only)
 Two Day 10 Day (Rad Only)
 Three Day

Quote #
 Date Results Needed

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs
-----------	-----------	----------	-------	------	------	--------------

SB-1-19.0-20.0	G	SS	-	9/23/21	12:31	2
SB-1-7.5-8.5	G	SS	-	9/23/21	12:18	2
SB-1-15.0-16.0	G	SS	-	9/23/21	12:27	2
MW-17-11.5-13.0	G	SS	-	9/23/21	11:34	6
MW-17-19.0-20.0	G	SS	-	9/23/21	11:26	2
MW-17-15.0-16.0	G	SS	-	9/23/21	11:22	2
MW-17-8.0-9.0	G	SS	-	9/23/21	11:29	2
MW-18-19.0-20.0	G	SS	-	9/23/21	10:31	2
DUP-2-092321	G	GW SS	-	9/23/21	-	2
SB-3-18.0-19.0	G	GW SS	-	9/23/21	0758	2

soil BTEXM 8260D 40mlAmb/MeOH10ml/Syr	soil NWTPHDX NOSGT 8ozClr-NoPres	soil NWTPHGX 40mlAmb/MeOH10ml/Syr	soil Pb 6010 8ozClr-NoPres	water BTEXM 8260D 40mlAmb-HCl	water NWTPHDX NOSGT 40mlAmb-HCl-BT	water NWTPHGX 40mlAmb HCl	water PAHs 8270ESIM 40mlAmb-NoPres-WT	water Total Pb 6010 250mlHDPE-HNO3
X	X	X	X					

Pace Analytical
 12065 Lebanon Rd. Mount Juliet, TN 37122
 Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at:
<https://info.pacelabs.com/hubfs/pas-standard-terms.pdf>

SDG # **E087**

Table
 Acctnum: CHEVARCWA
 Template: T194612
 Prelogin: P871785
 PM: 110 - Brian Ford
 PB: *mm 9/24*

Shipped Via:
 Remarks Sample # (lab only)

* Matrix:
 SS - Soil AIR - Air F - Filter
 GW - Groundwater B - Bioassay
 WW - WasteWater
 DW - Drinking Water
 OT - Other

Remarks:
 pH _____ Temp _____
 Flow _____ Other _____
 Samples returned via:
 UPS FedEx Courier
 Tracking # *B 5217 3300 6556*

Sample Receipt Checklist
 COC Seal Present/Intact: NP N
 COC Signed/Accurate: N
 Bottles arrive intact: N
 Correct bottles used: N
 Sufficient volume sent: N
 If Applicable
 VOA Zero Headspace: Y N
 Preservation Correct/Checked: Y N
 RAD Screen <0.5 mR/hr: Y N

Relinquished by: (Signature)
Joseph S. [Signature]
 Date: *09/23/2021* Time: *1600*

Date: *09/23/2021* Time: *1600*

Received by: (Signature)
[Signature]

Trip Blank Received: Yes / No
 HCl / MeOH
 TBR
 Temp: *25.1* °C Bottles Received: *24*

If preservation required by Login: Date/Time
 Date: *9/24/2021* Time: *9:05* Hold: Condition: *OK*

1100 Olive Way
Suite 800
Seattle, WA 98101

630 Plaza Dr., Ste. 600
Highlands Ranch, CO 80129

Pres
 Chk



Report to:
Ada Hamilton/Alex Laws

Email To:
alexander.laws@arcadis.com; Ada.Hamilton@ar

Project Description:
97502

City/State
 Collected: **SEDRO-WOOLLEY, WA**

Please Circle:
 PT MT CT ET

Phone: **206-325-5254**

Client Project #
30064310 07.21-Plan

Lab Project #
CHEVARCWA-97502

Collected by (print):
JOSEPH SEPUL

Site/Facility ID #
640 METCALF ST SEDRO-

P.O. #

Collected by (signature):
 Immediately Packed on Ice N Y

Rush? (Lab MUST Be Notified)
 Same Day Five Day
 Next Day 5 Day (Rad Only)
 Two Day 10 Day (Rad Only)
 Three Day

Quote #
 Date Results Needed

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	soil BTEXM 8260D 40mlAmb/MeOH10ml/Syr	soil NWTPHDX NOSGT 8ozClr-NoPres	soil NWTPHGX 40mlAmb/MeOH10ml/Syr	soil Pb 6010 8ozClr-NoPres	water BTEXM 8260D 40mlAmb-HCl	water NWTPHDX NOSGT 40mlAmb-HCl-BT	water NWTPHGX 40mlAmb HCl	water PAHs 8270ESIM 40mlAmb-NoPres-WT	water Total Pb 6010 250mlHDPE-HNO3
TRIP BLANK	—	SS	—	—	—	4	X	X							
		SS													
		SS													
		SS													
		SS													
		SS													
		SS													
		SS													
		SS													

12065 Lebanon Rd Mount Juliet, TN 37122
 Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at:
<https://info.pacelabs.com/hubs/pas-standard-terms.pdf>

SDG # **U1408935**
 Table #
 Acctnum: **CHEVARCWA**
 Template: **T194612**
 Prelogin: **P871785**
 PM: **110 - Brian Ford**
 PB: **mm9/8/21**
 Shipped Via:

* Matrix:
 SS - Soil AIR - Air F - Filter
 GW - Groundwater B - Bioassay
 WW - WasteWater
 DW - Drinking Water
 OT - Other

Remarks:
 pH _____ Temp _____
 Flow _____ Other _____
 Samples returned via:
 UPS FedEx Courier
 Tracking #

Sample Receipt Checklist
 COC Seal Present/Intact: NP Y N
 COC Signed/Accurate: Y N
 Bottles arrive intact: Y N
 Correct bottles used: Y N
 Sufficient volume sent: Y N
 If Applicable
 VOA Zero Headspace: Y N
 Preservation Correct/Checked: Y N
 RAD Screen <0.5 mR/hr: Y N

Relinquished by: (Signature)
JOSEPH SEPUL

Date: **09/23/2021**

Time: **1600**

Received by: (Signature)

Trip Blank Received: Yes/No
 Yes No
 HCl/MeOH
 TBR

Relinquished by: (Signature)

Date:

Time:

Received by: (Signature)

Temp: **25.1-25.5** °C
 Bottles Received: **24**

If preservation required by Login: Date/Time

Relinquished by: (Signature)

Date:

Time:

Received for lab by: (Signature)

Date: **9/24/21** Time: **945**

Hold: Condition: **NCF 10**

Arcadis - Chevron - WA

Sample Delivery Group: L1408938
Samples Received: 09/24/2021
Project Number: 30064310 07.21-Plan
Description: 97502
Site: 640 METCALF ST SEDRO-WOOLLEY
Report To: Ada Hamilton/Alex Laws
1100 Olive Way
Suite 800
Seattle, WA 98101

Entire Report Reviewed By:



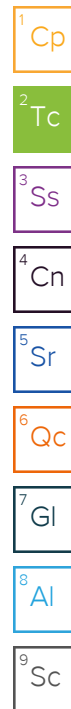
Kelly Mercer
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

Pace Analytical National12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

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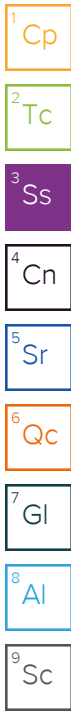


SAMPLE SUMMARY

MW-19-18.0-20.0_210922 L1408938-01 Solid

Collected by M. Andrews Collected date/time 09/22/21 13:21 Received date/time 09/24/21 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1748513	1	09/30/21 11:03	09/30/21 11:10	KDW	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1748417	1	09/30/21 11:18	10/01/21 02:42	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1749280	25	09/22/21 13:21	10/01/21 16:19	MGF	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1749857	1	09/22/21 13:21	10/01/21 13:10	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1749727	1	10/01/21 11:54	10/02/21 02:07	JDG	Mt. Juliet, TN



MW-19-7.5-8.5_210922 L1408938-02 Solid

Collected by M. Andrews Collected date/time 09/22/21 13:16 Received date/time 09/24/21 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1748513	1	09/30/21 11:03	09/30/21 11:10	KDW	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1748417	1	09/30/21 11:18	10/01/21 03:00	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1749280	25	09/22/21 13:16	10/01/21 16:40	MGF	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1749857	1	09/22/21 13:16	10/01/21 13:29	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1749721	1	10/01/21 11:58	10/02/21 02:53	JDG	Mt. Juliet, TN

SB-3-7.5-8.5_210923 L1408938-03 Solid

Collected by M. Andrews Collected date/time 09/23/21 07:43 Received date/time 09/24/21 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1748513	1	09/30/21 11:03	09/30/21 11:10	KDW	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1748417	1	09/30/21 11:18	10/01/21 03:07	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1749280	25	09/23/21 07:43	10/01/21 17:02	MGF	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1749857	1	09/23/21 07:43	10/01/21 13:48	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1749721	1	10/01/21 11:58	10/02/21 03:06	JDG	Mt. Juliet, TN

MW-20-19.0-20.0_210922 L1408938-04 Solid

Collected by M. Andrews Collected date/time 09/22/21 12:15 Received date/time 09/24/21 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1748513	1	09/30/21 11:03	09/30/21 11:10	KDW	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1748417	1	09/30/21 11:18	10/01/21 03:10	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1749280	25	09/22/21 12:15	10/01/21 17:23	MGF	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1749857	1	09/22/21 12:15	10/01/21 14:07	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1749727	1	10/01/21 11:54	10/01/21 23:54	JDG	Mt. Juliet, TN

MW-18-8.0-9.0_210923 L1408938-05 Solid

Collected by M. Andrews Collected date/time 09/23/21 10:25 Received date/time 09/24/21 09:45

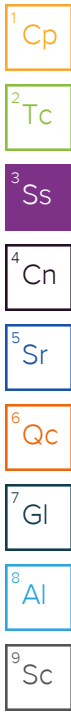
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1748513	1	09/30/21 11:03	09/30/21 11:10	KDW	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1748417	1	09/30/21 11:18	10/01/21 03:13	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1749280	25	09/23/21 10:25	10/01/21 17:45	MGF	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1749857	1	09/23/21 10:25	10/01/21 14:26	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1751182	1	10/04/21 16:27	10/04/21 21:22	TJD	Mt. Juliet, TN

SAMPLE SUMMARY

TRIP BLANK_210923 L1408938-06 GW

Collected by M. Andrews Collected date/time 09/23/21 00:00 Received date/time 09/24/21 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1749141	1	10/01/21 06:08	10/01/21 06:08	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1748953	1	09/30/21 03:33	09/30/21 03:33	TJJ	Mt. Juliet, TN



MW-16-4.0-5.0_210923 L1408938-07 Solid

Collected by M. Andrews Collected date/time 09/23/21 14:55 Received date/time 09/24/21 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1748513	1	09/30/21 11:03	09/30/21 11:10	KDW	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1748417	1	09/30/21 11:18	10/01/21 03:15	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1749280	25	09/23/21 14:55	10/01/21 18:06	MGF	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1749857	1	09/23/21 14:55	10/01/21 14:45	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1751182	1	10/04/21 16:27	10/04/21 22:03	TJD	Mt. Juliet, TN

DUP-3-092321_210923 L1408938-08 Solid

Collected by M. Andrews Collected date/time 09/23/21 00:00 Received date/time 09/24/21 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1748513	1	09/30/21 11:03	09/30/21 11:10	KDW	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1748417	1	09/30/21 11:18	10/01/21 03:18	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1749280	25	09/23/21 00:00	10/01/21 18:28	MGF	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1749857	1	09/23/21 00:00	10/01/21 15:04	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1751182	1	10/04/21 16:27	10/04/21 22:17	TJD	Mt. Juliet, TN

MW-16-14.0-15.0_210923 L1408938-09 Solid

Collected by M. Andrews Collected date/time 09/23/21 15:05 Received date/time 09/24/21 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1748513	1	09/30/21 11:03	09/30/21 11:10	KDW	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1748417	1	09/30/21 11:18	10/01/21 03:20	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1749280	25	09/23/21 15:05	10/01/21 18:49	MGF	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1749857	1	09/23/21 15:05	10/01/21 15:23	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1751182	1	10/04/21 16:27	10/04/21 21:36	TJD	Mt. Juliet, TN

MW-16-19.0-20.0_210923 L1408938-10 Solid

Collected by M. Andrews Collected date/time 09/23/21 15:12 Received date/time 09/24/21 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1748513	1	09/30/21 11:03	09/30/21 11:10	KDW	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1748417	1	09/30/21 11:18	10/01/21 03:23	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1749280	25	09/23/21 15:12	10/01/21 19:11	MGF	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1749857	1	09/23/21 15:12	10/01/21 15:42	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1751182	1	10/04/21 16:27	10/04/21 21:50	TJD	Mt. Juliet, TN

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Kelly Mercer
Project Manager

- ¹ Cp
- ² Tc
- ³ Ss
- ⁴ Cn
- ⁵ Sr
- ⁶ Qc
- ⁷ Gl
- ⁸ Al
- ⁹ Sc

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
Total Solids	69.8		1	09/30/2021 11:10	WG1748513

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Lead	6.17		0.298	0.716	1	10/01/2021 02:42	WG1748417

Volatile Organic Compounds (GC) by Method NWTPHGX

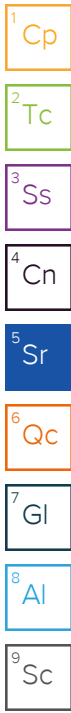
Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Gasoline Range Organics-NWTPH	U		1.64	4.83	25	10/01/2021 16:19	WG1749280
(S) a,a,a-Trifluorotoluene(FID)	113			77.0-120		10/01/2021 16:19	WG1749280

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Benzene	0.00181	J J3	0.000902	0.00193	1	10/01/2021 13:10	WG1749857
Toluene	U	J3	0.00251	0.00965	1	10/01/2021 13:10	WG1749857
Ethylbenzene	U	J3	0.00142	0.00483	1	10/01/2021 13:10	WG1749857
Total Xylenes	0.00647	J J3	0.00170	0.0125	1	10/01/2021 13:10	WG1749857
Methyl tert-butyl ether	U		0.000676	0.00193	1	10/01/2021 13:10	WG1749857
(S) Toluene-d8	105			75.0-131		10/01/2021 13:10	WG1749857
(S) 4-Bromofluorobenzene	99.1			67.0-138		10/01/2021 13:10	WG1749857
(S) 1,2-Dichloroethane-d4	120			70.0-130		10/01/2021 13:10	WG1749857

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Diesel Range Organics (DRO)	2.21	J	1.90	5.73	1	10/02/2021 02:07	WG1749727
Residual Range Organics (RRO)	10.8	J	4.77	14.3	1	10/02/2021 02:07	WG1749727
(S) o-Terphenyl	48.4			18.0-148		10/02/2021 02:07	WG1749727



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
Total Solids	75.8		1	09/30/2021 11:10	WG1748513

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Lead	3.99		0.275	0.660	1	10/01/2021 03:00	WG1748417

Volatile Organic Compounds (GC) by Method NWTPHGX

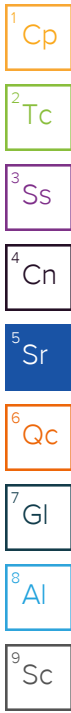
Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Gasoline Range Organics-NWTPH	U		1.47	4.33	25	10/01/2021 16:40	WG1749280
(S) a,a,a-Trifluorotoluene(FID)	113			77.0-120		10/01/2021 16:40	WG1749280

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Benzene	U		0.000809	0.00173	1	10/01/2021 13:29	WG1749857
Toluene	U		0.00225	0.00867	1	10/01/2021 13:29	WG1749857
Ethylbenzene	U		0.00128	0.00433	1	10/01/2021 13:29	WG1749857
Total Xylenes	U		0.00153	0.0113	1	10/01/2021 13:29	WG1749857
Methyl tert-butyl ether	U		0.000607	0.00173	1	10/01/2021 13:29	WG1749857
(S) Toluene-d8	107			75.0-131		10/01/2021 13:29	WG1749857
(S) 4-Bromofluorobenzene	99.2			67.0-138		10/01/2021 13:29	WG1749857
(S) 1,2-Dichloroethane-d4	119			70.0-130		10/01/2021 13:29	WG1749857

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Diesel Range Organics (DRO)	U		1.76	5.28	1	10/02/2021 02:53	WG1749721
Residual Range Organics (RRO)	U		4.39	13.2	1	10/02/2021 02:53	WG1749721
(S) o-Terphenyl	61.7			18.0-148		10/02/2021 02:53	WG1749721



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
Total Solids	72.9		1	09/30/2021 11:10	WG1748513

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Lead	4.93		0.285	0.686	1	10/01/2021 03:07	WG1748417

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Gasoline Range Organics-NWTPH	U		1.55	4.58	25	10/01/2021 17:02	WG1749280
(S) a,a,a-Trifluorotoluene(FID)	113			77.0-120		10/01/2021 17:02	WG1749280

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Benzene	U		0.000855	0.00183	1	10/01/2021 13:48	WG1749857
Toluene	U		0.00238	0.00915	1	10/01/2021 13:48	WG1749857
Ethylbenzene	U		0.00135	0.00458	1	10/01/2021 13:48	WG1749857
Total Xylenes	U		0.00161	0.0119	1	10/01/2021 13:48	WG1749857
Methyl tert-butyl ether	U		0.000641	0.00183	1	10/01/2021 13:48	WG1749857
(S) Toluene-d8	107			75.0-131		10/01/2021 13:48	WG1749857
(S) 4-Bromofluorobenzene	98.9			67.0-138		10/01/2021 13:48	WG1749857
(S) 1,2-Dichloroethane-d4	123			70.0-130		10/01/2021 13:48	WG1749857

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Diesel Range Organics (DRO)	U		1.82	5.49	1	10/02/2021 03:06	WG1749721
Residual Range Organics (RRO)	U		4.57	13.7	1	10/02/2021 03:06	WG1749721
(S) o-Terphenyl	48.6			18.0-148		10/02/2021 03:06	WG1749721



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	74.7		1	09/30/2021 11:10	WG1748513

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Lead	5.84		0.278	0.669	1	10/01/2021 03:10	WG1748417

Volatile Organic Compounds (GC) by Method NWTPHGX

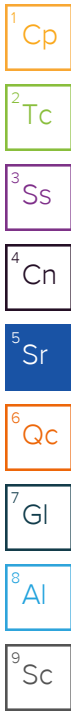
Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Gasoline Range Organics-NWTPH	U		1.50	4.42	25	10/01/2021 17:23	WG1749280
(S) a,a,a-Trifluorotoluene(FID)	113			77.0-120		10/01/2021 17:23	WG1749280

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	U		0.000825	0.00177	1	10/01/2021 14:07	WG1749857
Toluene	U		0.00230	0.00884	1	10/01/2021 14:07	WG1749857
Ethylbenzene	U		0.00130	0.00442	1	10/01/2021 14:07	WG1749857
Total Xylenes	U		0.00156	0.0115	1	10/01/2021 14:07	WG1749857
Methyl tert-butyl ether	U		0.000619	0.00177	1	10/01/2021 14:07	WG1749857
(S) Toluene-d8	108			75.0-131		10/01/2021 14:07	WG1749857
(S) 4-Bromofluorobenzene	100			67.0-138		10/01/2021 14:07	WG1749857
(S) 1,2-Dichloroethane-d4	122			70.0-130		10/01/2021 14:07	WG1749857

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Diesel Range Organics (DRO)	U		1.78	5.35	1	10/01/2021 23:54	WG1749727
Residual Range Organics (RRO)	U		4.46	13.4	1	10/01/2021 23:54	WG1749727
(S) o-Terphenyl	53.7			18.0-148		10/01/2021 23:54	WG1749727



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
Total Solids	75.1		1	09/30/2021 11:10	WG1748513

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Lead	2.25		0.277	0.666	1	10/01/2021 03:13	WG1748417

Volatile Organic Compounds (GC) by Method NWTPHGX

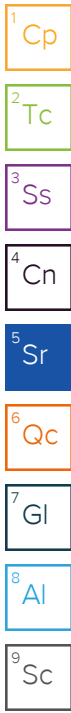
Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Gasoline Range Organics-NWTPH	U		1.46	4.31	25	10/01/2021 17:45	WG1749280
(S) a,a,a-Trifluorotoluene(FID)	113			77.0-120		10/01/2021 17:45	WG1749280

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Benzene	U		0.000805	0.00172	1	10/01/2021 14:26	WG1749857
Toluene	U		0.00224	0.00862	1	10/01/2021 14:26	WG1749857
Ethylbenzene	U		0.00127	0.00431	1	10/01/2021 14:26	WG1749857
Total Xylenes	U		0.00152	0.0112	1	10/01/2021 14:26	WG1749857
Methyl tert-butyl ether	U		0.000603	0.00172	1	10/01/2021 14:26	WG1749857
(S) Toluene-d8	108			75.0-131		10/01/2021 14:26	WG1749857
(S) 4-Bromofluorobenzene	102			67.0-138		10/01/2021 14:26	WG1749857
(S) 1,2-Dichloroethane-d4	124			70.0-130		10/01/2021 14:26	WG1749857

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Diesel Range Organics (DRO)	1.82	J	1.77	5.33	1	10/04/2021 21:22	WG1751182
Residual Range Organics (RRO)	U		4.44	13.3	1	10/04/2021 21:22	WG1751182
(S) o-Terphenyl	63.9			18.0-148		10/04/2021 21:22	WG1751182



Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	10/01/2021 06:08	WG1749141
(S) a,a,-Trifluorotoluene(FID)	92.1			78.0-120		10/01/2021 06:08	WG1749141

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	09/30/2021 03:33	WG1748953
Toluene	U		0.278	1.00	1	09/30/2021 03:33	WG1748953
Ethylbenzene	U		0.137	1.00	1	09/30/2021 03:33	WG1748953
Total Xylenes	U		0.174	3.00	1	09/30/2021 03:33	WG1748953
Methyl tert-butyl ether	U		0.101	1.00	1	09/30/2021 03:33	WG1748953
(S) Toluene-d8	98.9			80.0-120		09/30/2021 03:33	WG1748953
(S) 4-Bromofluorobenzene	99.2			77.0-126		09/30/2021 03:33	WG1748953
(S) 1,2-Dichloroethane-d4	101			70.0-130		09/30/2021 03:33	WG1748953

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
Total Solids	91.3		1	09/30/2021 11:10	WG1748513

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Lead	6.55		0.228	0.548	1	10/01/2021 03:15	WG1748417

Volatile Organic Compounds (GC) by Method NWTPHGX

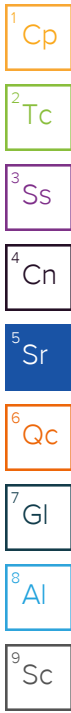
Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Gasoline Range Organics-NWTPH	33.1		1.02	2.99	25	10/01/2021 18:06	WG1749280
(S) a,a,a-Trifluorotoluene(FID)	110			77.0-120		10/01/2021 18:06	WG1749280

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Benzene	0.00454		0.000559	0.00120	1	10/01/2021 14:45	WG1749857
Toluene	0.00916		0.00156	0.00599	1	10/01/2021 14:45	WG1749857
Ethylbenzene	0.00839		0.000883	0.00299	1	10/01/2021 14:45	WG1749857
Total Xylenes	0.0454		0.00105	0.00779	1	10/01/2021 14:45	WG1749857
Methyl tert-butyl ether	U		0.000419	0.00120	1	10/01/2021 14:45	WG1749857
(S) Toluene-d8	106			75.0-131		10/01/2021 14:45	WG1749857
(S) 4-Bromofluorobenzene	106			67.0-138		10/01/2021 14:45	WG1749857
(S) 1,2-Dichloroethane-d4	121			70.0-130		10/01/2021 14:45	WG1749857

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Diesel Range Organics (DRO)	79.2		1.46	4.38	1	10/04/2021 22:03	WG1751182
Residual Range Organics (RRO)	60.2		3.65	11.0	1	10/04/2021 22:03	WG1751182
(S) o-Terphenyl	50.3			18.0-148		10/04/2021 22:03	WG1751182



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
Total Solids	90.0		1	09/30/2021 11:10	WG1748513

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Lead	10.9		0.231	0.556	1	10/01/2021 03:18	WG1748417

Volatile Organic Compounds (GC) by Method NWTPHGX

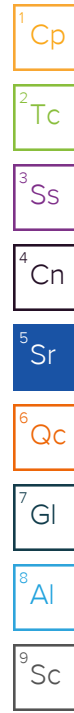
Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Gasoline Range Organics-NWTPH	21.9		1.04	3.06	25	10/01/2021 18:28	WG1749280
(S) a,a,a-Trifluorotoluene(FID)	110			77.0-120		10/01/2021 18:28	WG1749280

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Benzene	0.00294		0.000572	0.00122	1	10/01/2021 15:04	WG1749857
Toluene	0.00786		0.00159	0.00612	1	10/01/2021 15:04	WG1749857
Ethylbenzene	0.00465		0.000902	0.00306	1	10/01/2021 15:04	WG1749857
Total Xylenes	0.0260		0.00108	0.00796	1	10/01/2021 15:04	WG1749857
Methyl tert-butyl ether	U		0.000429	0.00122	1	10/01/2021 15:04	WG1749857
(S) Toluene-d8	107			75.0-131		10/01/2021 15:04	WG1749857
(S) 4-Bromofluorobenzene	107			67.0-138		10/01/2021 15:04	WG1749857
(S) 1,2-Dichloroethane-d4	119			70.0-130		10/01/2021 15:04	WG1749857

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Diesel Range Organics (DRO)	73.0		1.48	4.44	1	10/04/2021 22:17	WG1751182
Residual Range Organics (RRO)	68.3		3.70	11.1	1	10/04/2021 22:17	WG1751182
(S) o-Terphenyl	32.2			18.0-148		10/04/2021 22:17	WG1751182



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	75.4		1	09/30/2021 11:10	WG1748513

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Lead	0.514	J	0.276	0.663	1	10/01/2021 03:20	WG1748417

Volatile Organic Compounds (GC) by Method NWTPHGX

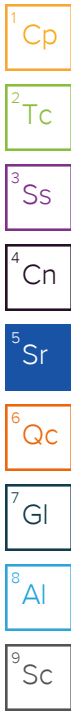
Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Gasoline Range Organics-NWTPH	4.51		1.45	4.27	25	10/01/2021 18:49	WG1749280
(S) a,a,a-Trifluorotoluene(FID)	111			77.0-120		10/01/2021 18:49	WG1749280

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	U		0.000798	0.00171	1	10/01/2021 15:23	WG1749857
Toluene	U		0.00222	0.00854	1	10/01/2021 15:23	WG1749857
Ethylbenzene	U		0.00126	0.00427	1	10/01/2021 15:23	WG1749857
Total Xylenes	0.00430	J	0.00150	0.0111	1	10/01/2021 15:23	WG1749857
Methyl tert-butyl ether	U		0.000598	0.00171	1	10/01/2021 15:23	WG1749857
(S) Toluene-d8	105			75.0-131		10/01/2021 15:23	WG1749857
(S) 4-Bromofluorobenzene	102			67.0-138		10/01/2021 15:23	WG1749857
(S) 1,2-Dichloroethane-d4	117			70.0-130		10/01/2021 15:23	WG1749857

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Diesel Range Organics (DRO)	5.94		1.76	5.31	1	10/04/2021 21:36	WG1751182
Residual Range Organics (RRO)	11.0	J	4.42	13.3	1	10/04/2021 21:36	WG1751182
(S) o-Terphenyl	60.8			18.0-148		10/04/2021 21:36	WG1751182



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	68.2		1	09/30/2021 11:10	WG1748513

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Lead	5.08		0.305	0.733	1	10/01/2021 03:23	WG1748417

Volatile Organic Compounds (GC) by Method NWTPHGX

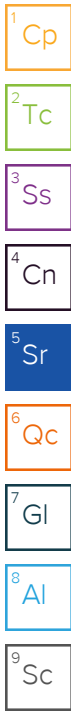
Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Gasoline Range Organics-NWTPH	U		1.70	5.00	25	10/01/2021 19:11	WG1749280
<i>(S) a,a,a-Trifluorotoluene(FID)</i>	113			77.0-120		10/01/2021 19:11	WG1749280

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	0.0220		0.000934	0.00200	1	10/01/2021 15:42	WG1749857
Toluene	U		0.00260	0.0100	1	10/01/2021 15:42	WG1749857
Ethylbenzene	U		0.00147	0.00500	1	10/01/2021 15:42	WG1749857
Total Xylenes	U		0.00176	0.0130	1	10/01/2021 15:42	WG1749857
Methyl tert-butyl ether	U		0.000700	0.00200	1	10/01/2021 15:42	WG1749857
<i>(S) Toluene-d8</i>	109			75.0-131		10/01/2021 15:42	WG1749857
<i>(S) 4-Bromofluorobenzene</i>	103			67.0-138		10/01/2021 15:42	WG1749857
<i>(S) 1,2-Dichloroethane-d4</i>	119			70.0-130		10/01/2021 15:42	WG1749857

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Diesel Range Organics (DRO)	8.68		1.95	5.87	1	10/04/2021 21:50	WG1751182
Residual Range Organics (RRO)	104		4.88	14.7	1	10/04/2021 21:50	WG1751182
<i>(S) o-Terphenyl</i>	47.5			18.0-148		10/04/2021 21:50	WG1751182



Method Blank (MB)

(MB) R3711177-1 09/30/21 11:10

Analyte	MB Result %	MB Qualifier	MB MDL %	MB RDL %
Total Solids	0.00100			

¹Cp

²Tc

³Ss

L1408938-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1408938-01 09/30/21 11:10 • (DUP) R3711177-3 09/30/21 11:10

Analyte	Original Result %	DUP Result %	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits
Total Solids	69.8	68.8	1	1.44		10

⁴Cn

⁵Sr

Laboratory Control Sample (LCS)

(LCS) R3711177-2 09/30/21 11:10

Analyte	Spike Amount %	LCS Result %	LCS Rec. %	Rec. Limits %	LCS Qualifier
Total Solids	50.0	50.0	100	85.0-115	

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3711322-1 10/01/21 02:37

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Lead	U		0.208	0.500

Laboratory Control Sample (LCS)

(LCS) R3711322-2 10/01/21 02:39

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Lead	100	99.4	99.4	80.0-120	

L1408938-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1408938-01 10/01/21 02:42 • (MS) R3711322-5 10/01/21 02:49 • (MSD) R3711322-6 10/01/21 02:51

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Lead	143	6.17	143	143	95.6	95.5	1	75.0-125			0.129	20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3711746-2 10/01/21 01:42

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	45.6	J	31.6	100
(S) a,a,a-Trifluorotoluene(FID)	95.3			78.0-120

Laboratory Control Sample (LCS)

(LCS) R3711746-1 10/01/21 00:34

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5500	4740	86.2	70.0-124	
(S) a,a,a-Trifluorotoluene(FID)			101	78.0-120	

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Method Blank (MB)

(MB) R3712980-2 10/01/21 11:44

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Gasoline Range Organics-NWTPH	U		0.848	2.50
(S) a,a,a-Trifluorotoluene(FID)	112			77.0-120

Laboratory Control Sample (LCS)

(LCS) R3712980-1 10/01/21 11:01

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5.50	4.49	81.6	71.0-124	
(S) a,a,a-Trifluorotoluene(FID)			97.8	77.0-120	

L1408935-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1408935-04 10/01/21 13:48 • (MS) R3712980-3 10/01/21 19:54 • (MSD) R3712980-4 10/01/21 20:15

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Gasoline Range Organics-NWTPH	193	U	145	161	75.1	83.5	25	10.0-149			10.6	27
(S) a,a,a-Trifluorotoluene(FID)					101	105		77.0-120				

L1408938-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1408938-01 10/01/21 16:19 • (MS) R3712980-5 10/01/21 20:37 • (MSD) R3712980-6 10/01/21 20:58

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Gasoline Range Organics-NWTPH	232	U	184	172	79.4	74.3	25	10.0-149			6.72	27
(S) a,a,a-Trifluorotoluene(FID)					101	102		77.0-120				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3711539-2 09/30/21 03:11

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Benzene	U		0.0941	1.00
Ethylbenzene	U		0.137	1.00
Methyl tert-butyl ether	U		0.101	1.00
Toluene	U		0.278	1.00
Xylenes, Total	U		0.174	3.00
<i>(S) Toluene-d8</i>	99.6			80.0-120
<i>(S) 4-Bromofluorobenzene</i>	100			77.0-126
<i>(S) 1,2-Dichloroethane-d4</i>	103			70.0-130

Laboratory Control Sample (LCS)

(LCS) R3711539-1 09/30/21 02:27

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Benzene	5.00	4.92	98.4	70.0-123	
Ethylbenzene	5.00	4.55	91.0	79.0-123	
Methyl tert-butyl ether	5.00	5.21	104	68.0-125	
Toluene	5.00	4.64	92.8	79.0-120	
Xylenes, Total	15.0	13.6	90.7	79.0-123	
<i>(S) Toluene-d8</i>			97.7	80.0-120	
<i>(S) 4-Bromofluorobenzene</i>			101	77.0-126	
<i>(S) 1,2-Dichloroethane-d4</i>			105	70.0-130	

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3711907-2 10/01/21 07:27

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/kg		mg/kg	mg/kg
Benzene	U		0.000467	0.00100
Ethylbenzene	U		0.000737	0.00250
Methyl tert-butyl ether	U		0.000350	0.00100
Toluene	U		0.00130	0.00500
Xylenes, Total	U		0.000880	0.00650
(S) Toluene-d8	109			75.0-131
(S) 4-Bromofluorobenzene	100			67.0-138
(S) 1,2-Dichloroethane-d4	116			70.0-130

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3711907-1 10/01/21 06:11 • (LCSD) R3711907-3 10/01/21 08:39

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	mg/kg	mg/kg	mg/kg	%	%	%			%	%
Benzene	0.125	0.103	0.109	82.4	87.2	70.0-123			5.66	20
Ethylbenzene	0.125	0.108	0.115	86.4	92.0	74.0-126			6.28	20
Methyl tert-butyl ether	0.125	0.121	0.125	96.8	100	66.0-132			3.25	20
Toluene	0.125	0.111	0.117	88.8	93.6	75.0-121			5.26	20
Xylenes, Total	0.375	0.333	0.356	88.8	94.9	72.0-127			6.68	20
(S) Toluene-d8				107	106	75.0-131				
(S) 4-Bromofluorobenzene				102	101	67.0-138				
(S) 1,2-Dichloroethane-d4				129	130	70.0-130				

7 Gl

8 Al

9 Sc

L1408935-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1408935-04 10/01/21 10:57 • (MS) R3711907-4 10/01/21 16:20 • (MSD) R3711907-5 10/01/21 16:39

Analyte	Spike Amount (dry)	Original Result (dry)	MS Result (dry)	MSD Result (dry)	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Benzene	0.176	0.00275	0.0938	0.106	51.6	58.3	1	10.0-149			11.9	37
Ethylbenzene	0.176	0.0309	0.127	0.138	54.3	60.8	1	10.0-160			8.58	38
Methyl tert-butyl ether	0.176	U	0.154	0.151	87.1	85.7	1	11.0-147			1.67	35
Toluene	0.176	0.0290	0.124	0.137	53.9	61.1	1	10.0-156			9.62	38
Xylenes, Total	0.529	0.171	0.458	0.500	54.2	62.2	1	10.0-160			8.85	38
(S) Toluene-d8					107	107		75.0-131				
(S) 4-Bromofluorobenzene					97.9	99.7		67.0-138				
(S) 1,2-Dichloroethane-d4					122	120		70.0-130				

L1408938-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1408938-01 10/01/21 13:10 • (MS) R3711907-6 10/01/21 16:58 • (MSD) R3711907-7 10/01/21 17:17

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	0.210	0.00181	0.111	0.220	51.8	104	1	10.0-149		J3	66.0	37
Ethylbenzene	0.210	U	0.110	0.230	52.5	109	1	10.0-160		J3	70.1	38
Methyl tert-butyl ether	0.210	U	0.197	0.199	93.6	94.5	1	11.0-147			0.976	35
Toluene	0.210	U	0.123	0.243	58.5	116	1	10.0-156		J3	65.5	38
Xylenes, Total	0.631	0.00647	0.376	0.716	58.6	112	1	10.0-160		J3	62.2	38
<i>(S) Toluene-d8</i>					106	110		75.0-131				
<i>(S) 4-Bromofluorobenzene</i>					99.3	102		67.0-138				
<i>(S) 1,2-Dichloroethane-d4</i>					123	121		70.0-130				

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Method Blank (MB)

(MB) R3711653-1 10/02/21 02:26

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Diesel Range Organics (DRO)	U		1.33	4.00
Residual Range Organics (RRO)	U		3.33	10.0
<i>(S) o-Terphenyl</i>	61.6			18.0-148

Laboratory Control Sample (LCS)

(LCS) R3711653-2 10/02/21 02:39

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Diesel Range Organics (DRO)	50.0	35.5	71.0	50.0-150	
<i>(S) o-Terphenyl</i>			61.1	18.0-148	

L1407434-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1407434-01 10/02/21 21:56 • (MS) R3711653-3 10/02/21 22:10 • (MSD) R3711653-4 10/02/21 22:23

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Diesel Range Organics (DRO)	59.0	U	33.1	40.2	56.1	68.6	1	50.0-150			19.4	20
<i>(S) o-Terphenyl</i>					39.7	50.6		18.0-148				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3711658-1 10/01/21 22:34

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Diesel Range Organics (DRO)	U		1.33	4.00
Residual Range Organics (RRO)	U		3.33	10.0
<i>(S) o-Terphenyl</i>	56.9			18.0-148

Laboratory Control Sample (LCS)

(LCS) R3711658-2 10/01/21 22:47

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Diesel Range Organics (DRO)	50.0	34.1	68.2	50.0-150	
<i>(S) o-Terphenyl</i>			74.6	18.0-148	

L1408938-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1408938-01 10/02/21 02:07 • (MS) R3711658-3 10/02/21 02:20 • (MSD) R3711658-4 10/02/21 02:33

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Diesel Range Organics (DRO)	67.7	2.21	38.1	38.4	53.0	53.0	1	50.0-150			0.749	20
<i>(S) o-Terphenyl</i>					60.6	50.9		18.0-148				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3712295-1 10/04/21 20:55

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Diesel Range Organics (DRO)	U		1.33	4.00
Residual Range Organics (RRO)	U		3.33	10.0
(S) o-Terphenyl	51.7			18.0-148

Laboratory Control Sample (LCS)

(LCS) R3712295-2 10/04/21 21:09

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Diesel Range Organics (DRO)	50.0	47.0	94.0	50.0-150	
(S) o-Terphenyl			62.6	18.0-148	

L1408880-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1408880-01 10/05/21 01:38 • (MS) R3712295-3 10/05/21 01:52 • (MSD) R3712295-4 10/05/21 02:06

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Diesel Range Organics (DRO)	48.9	6.74	53.4	48.4	95.4	85.7	1	50.0-150			9.82	20
(S) o-Terphenyl					57.2	52.8		18.0-148				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

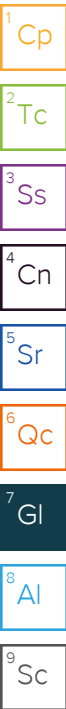
The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
MDL	Method Detection Limit.
MDL (dry)	Method Detection Limit.
RDL	Reported Detection Limit.
RDL (dry)	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.
J3	The associated batch QC was outside the established quality control range for precision.



ACCREDITATIONS & LOCATIONS

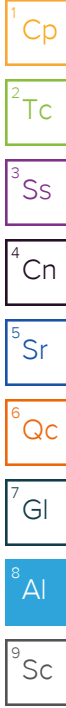
Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122


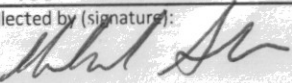
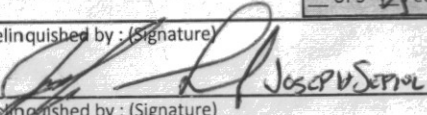
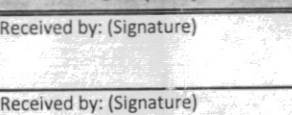
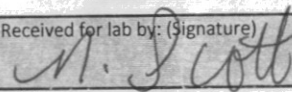
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Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey-NELAP	TN002
California	2932	New Mexico ¹	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio-VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	KY90010	South Carolina	84004002
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas ⁵	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA-Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.



Company Name/Address: Arcadis - Chevron - WA 1100 Olive Way Suite 800 Seattle, WA 98101		Billing Information: Attn: Accounts Payable 630 Plaza Dr., Ste. 600 Highlands Ranch, CO 80129		Analysis / Container / Preservative										Chain of Custody Page 1 of 1					
Report to: Ada Hamilton/Alex Laws		Email To: alexander.laws@arcadis.com; Ada.Hamilton@ar		Pres Chk										 12065 Lebanon Rd Mount Juliet, TN 37122 Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubs/pas-standard-terms.pdf					
Project Description: 97502		City/State Collected: Sedro Woolley, WA		Please Circle: <input checked="" type="radio"/> PT <input type="radio"/> MT <input type="radio"/> CT <input type="radio"/> ET												SDG # <u>21408938</u> F150			
Phone: 206-325-5254		Client Project # 30064310 07.21-Plan		Lab Project # CHEVARCWA-97502												Acctnum: CHEVARCWA Template: T194612 Prelogin: P871785 PM: 110 - Brian Ford PB: <u>mm91021</u>			
Collected by (print): M. Andrews		Site/Facility ID # 640 METCALF ST SEDRO-		P.O. #												Shipped Via:			
Collected by (signature): 		Rush? (Lab MUST Be Notified) <input type="checkbox"/> Same Day <input type="checkbox"/> Five Day <input type="checkbox"/> Next Day <input type="checkbox"/> 5 Day (Rad Only) <input type="checkbox"/> Two Day <input type="checkbox"/> 10 Day (Rad Only) <input type="checkbox"/> Three Day		Quote #												Remarks			
Immediately Packed on Ice N <input type="checkbox"/> Y <input checked="" type="checkbox"/>				Date Results Needed												Sample # (lab only)			
Sample ID		Comp/Grab	Matrix *	Depth	Date	Time	Cntrs	soil BTEXM 8260D 40mlAmb/MeOH10ml/Syr	soil NWTPHDX NOSGT 8ozClr-NoPres	soil NWTPHGX 40mlAmb/MeOH10ml/Syr	soil Pb 6010 8ozClr-NoPres	water BTEXM 8260D 40mlAmb-HCl	water NWTPHDX NOSGT 40mlAmb-HCl-BT	water NWTPHGX 40mlAmb HCl	water PAHs 8270ESIM 40mlAmb-NoPres-WT	water Total Pb 6010 250mlHDPE-HNO3			
MW-19-18.0-20.0		G	SS	-	9/22/21	13:21	6	X	X	X	X							MS/MSD	-1
MW-19-7.5-8.5		G	SS	-	9/22/21	13:16	2												-2
SB-3-7.5-8.5		G	SS	-	9/23/21	0743	2												-3
MW-20-19.0-20.0		G	SS	-	9/22/21	1215	2												-4
MW-18-8.0-9.0		G	SS	-	9/23/21	10:25	2												-5
Trip Blank		←	SS	-	9/23/21	-	4												-6
MW-16-4.0-5.0		G	SS	-	9/23/21	14:55	2												-7
DUP-3-092321		G	SS	-	9/23/21	-	2												-8
MW-16-14.0-15.0		G	SS	-	9/23/21	15:05	2												-9
MW-16-14.0-20.0		G	SS	-	9/23/21	15:12	2												-10
* Matrix: SS - Soil AIR - Air F - Filter GW - Groundwater B - Bioassay WW - WasteWater DW - Drinking Water OT - Other _____		Remarks: pH _____ Temp _____ Flow _____ Other _____										Sample Receipt Checklist COC Seal Present/Intact: <input type="checkbox"/> NP <input type="checkbox"/> Y <input type="checkbox"/> N COC Signed/Accurate: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Bottles arrive intact: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Correct bottles used: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Sufficient volume sent: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N If Applicable VOA Zero Headspace: <input type="checkbox"/> Y <input type="checkbox"/> N Preservation Correct/Checked: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N RAD Screen <0.5 mR/hr: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N							
Samples returned via: <input type="checkbox"/> UPS <input checked="" type="checkbox"/> FedEx <input type="checkbox"/> Courier _____		Tracking # <u>5217 3307 7563</u>																	
Relinquished by: (Signature) 		Date: 09/23/2021	Time: 12:00	Received by: (Signature) 				Trip Blank Received: <input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No HCL / MeOH TBR											
Relinquished by: (Signature)		Date:	Time:	Received by: (Signature)				Temp <u>7.0</u> °C Bottles Received: <u>22</u>				If preservation required by Login: Date/Time							
Relinquished by: (Signature)		Date:	Time:	Received for lab by: (Signature) 				Date: <u>9/24/21</u> Time: <u>0945</u>				Hold:		Condition: <input checked="" type="checkbox"/> OK					

Appendix I

Groundwater Lab Data

Chevron - WA

DATA REVIEW

SEDRO-WOOLLEY, WA

Volatile organic compounds, semi volatile organic compounds, Total Petroleum Hydrocarbons, and Metal Analyses

SDG# L1411457

Analyses Performed By:
Pace Analytical National
Mount Juliet, TN 37122

Report # 44128R
Review Level: Tier II
Project: 30064310.08.82



DATA REVIEW REPORT

SUMMARY

This data quality assessment summarizes the review of Sample Delivery Groups (SDGs) # L1411457 for samples collected in association with the Chevron SEDRO-WOOLLEY, WA Site. The review was conducted as a Tier II evaluation and included review of data package completeness. Only analytical data associated with constituents of concern were reviewed for this validation. Field documentation was not included in this review. Included with this assessment are the validation annotated sample result sheets and chain of custody. Analyses were performed on the following samples:

Sample ID	Lab ID	Matrix	Sample Collection Date	Parent Sample	Analysis			
					VOC	SVOC	TPH	MET
RS-1-092821	L1411457-01	Water	09/28/2021		X		X	X
MW-17_210928	L1411457-02	Water	09/28/2021		X		X	X
MW-14_210928	L1411457-03	Water	09/28/2021		X		X	X
MW-4_210928	L1411457-04	Water	09/28/2021		X		X	X
MW-8_210928	L1411457-05	Water	09/28/2021		X		X	X
MW-18_210928	L1411457-06	Water	09/28/2021		X		X	X
MW-7_210928	L1411457-07	Water	09/28/2021		X	X	X	X
MW-21_210928	L1411457-08	Water	09/28/2021		X		X	X
DUP-1_210928	L1411457-09	Water	09/28/2021	MW-13_210928	X		X	X
MW-13_210928	L1411457-10	Water	09/28/2021		X		X	X
MW-5_210928	L1411457-11	Water	09/28/2021		X		X	X

Notes:

VOC = volatile organic compounds.

TPH = total petroleum hydrocarbons.

MET = metals.

DATA REVIEW REPORT

ANALYTICAL DATA PACKAGE DOCUMENTATION

The table below is the evaluation of the data package completeness.

Items Reviewed	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
1. Sample receipt condition		X		X	
2. Requested analyses and sample results		X		X	
3. Master tracking list		X		X	
4. Methods of analysis		X		X	
5. Reporting limits		X		X	
6. Sample collection date		X		X	
7. Laboratory sample received date		X		X	
8. Sample preservation verification (as applicable)		X		X	
9. Sample preparation/extraction/analysis dates		X		X	
10. Fully executed Chain-of-Custody (COC) form		X		X	
11. Narrative summary of QA or sample problems provided		X		X	
12. Data Package Completeness and Compliance		X		X	

Note:

QA - Quality Assurance

DATA REVIEW REPORT

ORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) SW-846 Methods 8260D, NWTPHDX, NWTPHGX and 8270 E by SIM. Validation was performed following the USEPA National Functional Guidelines NFG for Organic Superfund Methods Data Review, EPA-540-R-20-005 (November 2020), with reference to the historical (USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review, OSWER 9240.1-05A-P, October 1999, as appropriate).

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and had already been subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with USEPA National Functional Guidelines:

- Concentration (C) Qualifiers
 - U The compound was analyzed for but not detected. The associated value is the compound quantitation limit.
 - B The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.
- Quantitation (Q) Qualifiers
 - E The compound was quantitated above the calibration range.
 - D Concentration is based on a diluted sample analysis.
- Validation Qualifiers
 - J The compound was positively identified; however, the associated numerical value is an estimated concentration only.
 - UJ The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.
 - JN The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification. The associated numerical value is an estimated concentration only.
 - UB Compound considered non-detect at the listed value due to associated blank contamination.
 - N The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.
 - R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is

DATA REVIEW REPORT

that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

DATA REVIEW REPORT

VOLATILE ORGANIC COMPOUND (VOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8260D	Water	14 days from collection to analysis (preserved)	Cool to <6 °C; preserved to a pH of less than 2 s.u.

Note:

s.u. Standard units

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the sample detection limit (SDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the SDL in the associated blanks; therefore, detected sample results were not associated with blank contamination.

3. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. VOC analysis requires that all surrogates associated with the analysis exhibit recoveries within the laboratory-established acceptance limits.

Sample locations associated with surrogates exhibiting recoveries outside of the control limits presented in the following table.

Sample ID	Surrogate	Recovery
MW-14_210928	4-Bromofluorobenzene	< LL but > 10%
MW-8_210928	Toluene-d8	> UL
MW-7_210928	Toluene-d8	> UL
MW-21_210928	Toluene-d8	> UL

Notes:

UL - Upper limit

LL - Lower control limit

DATA REVIEW REPORT

The criteria used to evaluate the surrogate recoveries are presented in the following table. In the case of a surrogate deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> UL	Non-detect	No Action
	Detect	J
< LL but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J
Surrogates diluted below the calibration curve due to the high concentration of a target compounds	Non-detect	UJ ¹
	Detect	J ¹

Note:

- ¹ A more concentrated analysis was not performed with surrogate compounds within the calibration range; therefore, no determination of extraction efficiency could be made.

4. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analyses

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

MS/MSD analysis was not performed on sample within this SDG.

5. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS/LCSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All compounds associated with the LCS/LCSD analysis exhibited recoveries within the control limits.

6. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

Results for duplicate samples are summarized in the following table.

DATA REVIEW REPORT

Sample ID/Duplicate ID	Compounds	Sample Result (ug/l)	Duplicate Result (ug/l)	RPD
MW-13_210928 / DUP-1_210928	Benzene	0.147 J	0.194 J	AC
	Toluene	1.61	1.56	AC
	Ethylbenzene	76.3	73.4	4%
	Total Xylenes	108	122	12%

Notes:

AC - Acceptable

The calculated RPDs between the parent sample and field duplicate were acceptable.

7. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA REVIEW REPORT

DATA VALIDATION CHECKLIST FOR VOCs

VOCs: SW-846 8260D	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks	X				X
C. Trip blanks	X				X
Laboratory Control Sample (LCS)		X		X	
Laboratory Control Sample Duplicate (LCSD)		X		X	
LCS/LCSD Precision (RPD)		X		X	
Matrix Spike (MS)	X				X
Matrix Spike Duplicate (MSD)	X				X
MS/MSD Precision (RPD)	X				X
Field/Lab Duplicate (RPD)		X		X	
Surrogate Spike Recoveries		X	X		
Dilution Factor		X		X	

Notes:

%R Percent recovery

RPD Relative percent difference

DATA REVIEW REPORT

SEMIVOLATILE ORGANIC COMPOUND (SVOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8270 E by SIM	Water	7 days from collection to extraction and 40 days from extraction to analysis	Cool to <6 °C

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore detected sample results were not associated with blank contamination.

3. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. SVOC analysis requires that two of the three SVOC surrogate compounds within each fraction exhibit recoveries within the laboratory-established acceptance limits.

All surrogate recoveries were within control limits.

4. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

MS/MSD analysis was not performed on sample within this SDG.

DATA REVIEW REPORT

5. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS/LCSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All compounds associated with the LCS/LCSD analysis exhibited recoveries within the control limits.

6. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices

A field duplicate sample was not collected from sample locations associated with this SDG.

7. Compound Identification

Sample results associated with compound that exhibited a concentration greater than the linear range of the instrument calibration are summarized in the following table.

Sample ID	Compound	Original Analysis (ug/l)	Diluted Analysis (ug/l)	Reported Analysis
MW-7_210928	Naphthalene	--	105	105 D

Note: In the instance where both the original analysis and the diluted analysis sample results exhibited a concentration greater than and/or less than the calibration linear range of the instrument; the sample result exhibiting the greatest concentration will be reported as the final result.

Sample results associated with compounds exhibiting concentrations greater than the linear range are qualified as documented in the table below when reported as the final reported sample result.

Reported Sample Results	Qualification
Diluted sample result within calibration range	D
Diluted sample result less than the calibration range	DJ
Diluted sample result greater than the calibration range	EDJ
Original sample result greater than the calibration range	EJ

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA REVIEW REPORT

DATA VALIDATION CHECKLIST FOR SVOCs

SVOCs: SW-846 8270 E By SIM	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks	X				X
Laboratory Control Sample (LCS) %R		X		X	
Laboratory Control Sample Duplicate(LCSD) %R		X		X	
LCS/LCSD Precision (RPD)		X		X	
Matrix Spike (MS) %R	X				X
Matrix Spike Duplicate(MSD) %R	X				X
MS/MSD Precision (RPD)	X				X
Field/Lab Duplicate (RPD)	X				X
Surrogate Spike Recoveries		X		X	
Dilution Factor		X		X	
Moisture Content	X				X

Notes:

%R Percent recovery

RPD Relative percent difference

%D Percent difference

DATA REVIEW REPORT

TOTAL PETROLEUM HYDROCARBONS ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
GRO by Method NWTPHGX	Water	14 days from collection to analysis	Cool to <6 °C; preserved to a pH of less than 2.
DRO by Method NWTPHDX	Water	14 days from collection to extraction and 40 days from extraction to analysis	Cool to <6 °C; preserved to a pH of less than 2.

All samples were analyzed within the specified holding times.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the sample detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

All compounds associated with the QA blanks exhibited a concentration less than the MDL, with the exception of the compounds listed in the following table. Sample results associated with QA blank contamination that were greater than the BAL resulted in the removal of the laboratory qualifier (B) of data. Sample results less than the BAL associated with the following sample locations were qualified as listed in the following table.

Sample ID	Compound	Sample Result	Qualification
RS-1-092821	Gasoline Range Organics-NWTPH (MB)	Detected sample results <RL and <BAL	"UB" at the RL

Note:

RL = reporting limit

3. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. The analysis requires surrogate compounds exhibit recoveries within the laboratory-established acceptance limits.

All surrogate recoveries were within control limits.

DATA REVIEW REPORT

4. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analyses

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

MS/MSD analysis was not performed on sample within this SDG.

5. Laboratory Control Sample (LCS)/Laboratory Control Sample Duplicate Analysis (LCSD)

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All compounds associated with the LCS/LCSD analysis exhibited recoveries within the control limits.

6. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

Results for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compounds	Sample Result (ug/l)	Duplicate Result (ug/l)	RPD
MW-13_210928 / DUP-1_210928	Gasoline Range Organics (GRO)	4940	4530	9%
	Diesel Range Organics (DRO)	730	752	AC

Notes:

AC = Acceptable.

The calculated RPDs between the parent sample and field duplicate were acceptable.

7. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA REVIEW REPORT

DATA VALIDATION CHECKLIST FOR TPH

TPH: NWTPHGX and NWTPHDX	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY (GC/FID)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X	X		
B. Equipment blanks	X				X
Laboratory Control Sample (LCS) %R		X		X	
Laboratory Control Sample Duplicate(LCSD) %R		X		X	
LCS/LCSD Precision (RPD)		X		X	
Matrix Spike (MS) %R	X				X
Matrix Spike Duplicate (MSD) %R	X				X
MS/MSD Precision (RPD)	X				X
Field/Lab Duplicate (RPD)		X		X	
Surrogate Spike Recoveries		X		X	
Dilution Factor		X		X	

Notes:

%R - percent recovery

RPD - relative percent difference

DATA REVIEW REPORT

INORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) SW-846 Methods 6010D. Data were reviewed in accordance USEPA National Functional Guidelines NFG for Inorganic Superfund Methods Data Review, EPA-540-R-20-006 (November 2020), with reference to the historical (USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, OSWER 9240.1-05A-P, October 2004, as appropriate).

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and that it was already subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with the USEPA National Functional Guidelines:

- Concentration (C) Qualifiers
 - U The analyte was analyzed for but not detected. The associated value is the analyte instrument detection limit.
 - J The reported value was obtained from a reading less than the reporting limit (RL), but greater than or equal to the method detection limit (MDL).
- Quantitation (Q) Qualifiers
 - E The reported value is estimated due to the presence of interference.
 - N Spiked sample recovery is not within control limits.
 - * Duplicate analysis is not within control limits.
- Validation Qualifiers
 - J The analyte was positively identified; however, the associated numerical value is an estimated concentration only.
 - UJ The analyte was not detected above the reporting limit. However, the reported limit is approximate and may or may not represent the actual limit of detection.
 - UB Analyte considered non-detect at the listed value due to associated blank contamination.
 - R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

DATA REVIEW REPORT

METALS ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 6010D	Water	180 days from collection to analysis	Preserved to a pH of less than 2.

All samples were analyzed within the specified holding times.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank is calculated for QA blanks containing concentrations greater than the sample detection limit (SDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

All analytes were not detected above the SDL in the associated blanks; therefore, detected sample results were not associated with blank contamination.

3. Matrix Spike/Matrix Spike Duplicate (MS/MSD)/Laboratory Duplicate Analysis

MS/MSD and laboratory duplicate data are used to assess the precision and accuracy of the analytical method.

3.1 MS/MSD Analysis

All metal analytes must exhibit a percent recovery within the established acceptance limits of 75% to 125%. The MS/MSD recovery control limits do not apply for MS performed on sample locations where the analyte's concentration detected in the parent sample exceeds the MS concentration by a factor of four or greater. In instance where this is true, the data will not be qualified even if the percent recovery does not meet the control limits and the laboratory flag will be removed.

MS/MSD analysis was performed on sample RS-1-092821. MS/MSD analysis exhibited recoveries and RPDs within the laboratory established acceptance limits.

3.2 Laboratory Duplicate Analysis

The laboratory duplicates relative percent difference (RPD) criterion is applied when parent and duplicate sample concentrations are greater than or equal to 5 times the RL. A control limit of 20% for water matrices is applied when the criteria above is true. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of one times the RL is applied for water matrices.

Laboratory duplicate analysis was not performed on any of the samples from this SDG.

4. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices is applied to the RPD between the parent

DATA REVIEW REPORT

sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

Results for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Analyte	Sample Result (ug/l)	Duplicate Result (ug/l)	RPD
MW-13_210928 / DUP-1_210928	Lead, Dissolved	U	U	AC

Notes:

AC - Acceptable

The calculated RPDs between the parent sample and field duplicate were acceptable.

5. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the accuracy of the analytical method independent of matrix interferences. The analytes associated with the LCS analysis must exhibit a percent recovery between the control limits of 80% and 120%.

The LCS analysis exhibited recoveries within the control limits.

6. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA REVIEW REPORT

DATA VALIDATION CHECKLIST FOR METAL

METALS; SW-846 6010D	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Inductively Coupled Plasma-Mass Spectrometry (ICP-MS)					
Tier II Validation					
Holding Times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Instrument Blanks	X				X
B. Method Blanks		X		X	
C. Equipment/Field Blanks	X				X
Laboratory Control Sample (LCS)		X		X	
Laboratory Control Sample Duplicate (LCSD) %R	X				X
LCS/LCSD Precision (RPD)	X				X
Matrix Spike (MS) %R		X		X	
Matrix Spike Duplicate (MSD) %R		X		X	
MS/MSD Precision (RPD)		X		X	
Lab Duplicate (RPD)	X				X
Field Duplicate (RPD)		X		X	
ICP Serial Dilution %D	X				X
Reporting Limit Verification		X		X	

Notes:


%R Percent recovery

RPD Relative percent difference

%D Percent difference

DATA REVIEW REPORT

VALIDATION PERFORMED BY: Bhagyashree Fulzele

SIGNATURE: 

DATE: January 11, 2022

PEER REVIEW: Dennis Capria

DATE: January 17, 2022

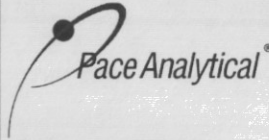
**CHAIN OF CUSTODY
CORRECTED SAMPLE ANALYSIS DATA
SHEETS**



Company Name/Address:
Arcadis - Chevron - WA
 1100 Olive Way
 Suite 800
 Seattle, WA 98101

Billing Information:
 Attn: Accounts Payable
 630 Plaza Dr., Ste. 600
 Highlands Ranch, CO 80129

Analysis / Container / Preservative
 Pres Chk

Chain of Custody Page 2 of 3


Report to:
Ada Hamilton/Alex Laws

Email To:
 alexander.laws@arcadis.com;Ada.Hamilton@ar

Project Description:
 97502

City/State Collected:
 SEDRO WOLEY, WA

Please Circle:
 PT MT CT ET

Phone: 206-325-5254

Client Project #
 30064310 07.21-Plan

Lab Project #
 CHEVARCWA-97502

Collected by (print):
 B. PAULEY
 J. SEPIC/M. ANDREWS

Site/Facility ID #
 640 METCALF ST SEDRO-

P.O. #

Collected by (signature):
 J. SEPIC/M. ANDREWS
 B. PAULEY
 Immediately
 Packed on Ice N

Rush? (Lab MUST Be Notified)
 Same Day Five Day
 Next Day 5 Day (Rad Only)
 Two Day 10 Day (Rad Only)
 Three Day

Quote #
 Date Results Needed
 No. of Cntrs

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	BTEXM 8260D 40mlAmb-HCl	Diss Pb 6010 250mlHDPE-NoPres	NWTPHDX LVINOSGT 40mlAmb-HCl-BT	NWTPHGX 40mlAmb HCl	PAHs 8270ESIM 40mlAmb-NoPres-WT
RS-1-092821	G	GW	—	09/28/21	1645	9	X	X	X	X	
MW-17-20210928	G	GW	—	09/28/21	1131	9	X	X	X	X	
MW-14-20210928	G	GW	—	09/28/21	1606	9	X	X	X	X	
MW-4-20210928	G	GW	—	09/28/21	1300	9	X	X	X	X	
MW-8-20210928	G	GW	—	09/28/21	1600	9	X	X	X	X	
MW-18-20210928	G	GW	—	09/28/21	1021	9	X	X	X	X	
MW-7-20210928	G	GW	—	09/28/21	1415	11	X	X	X	X	
MW-21-20210928	G	GW	—	09/28/21	11035	9	X	X	X	X	
DUP-1-092821	G	GW	—	09/28/21	—	9	X	X	X	X	
MW-13-20210928	G	GW	—	09/28/21	1252	9	X	X	X	X	

12065 Lebanon Rd Mount Juliet, TN 37122
 Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at:
<https://info.pacelabs.com/hubfs/pas-standard-terms.pdf>

SDG # **L1411457**
 Table **1225**

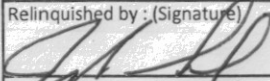
Acctnum: CHEVARCWA
 Template: T194616
 Prelogin: P871798
 PM: 110 - Brian Ford
 PB: **WS 9/19/21**

Shipped Via:
 Remarks Sample # (lab only)

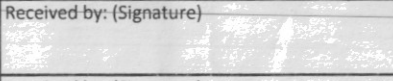
* Matrix:
 SS - Soil AIR - Air F - Filter
 GW - Groundwater B - Bioassay
 WW - WasteWater
 DW - Drinking Water
 OT - Other

Remarks:
 pH _____ Temp _____
 Flow _____ Other _____
 Samples returned via:
 UPS FedEx Courier _____
 Tracking # **5217 333 6680**

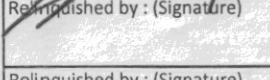
Sample Receipt Checklist
 COC Seal Present/Intact: NP Y N
 COC Signed/Accurate: Y N
 Bottles arrive intact: Y N
 Correct bottles used: Y N
 Sufficient volume sent: Y N
 If Applicable
 VOA Zero Headpace: Y N
 Preservation Correct/Checked: Y N
 RAD Screen <0.5 mR/hr: Y N

Relinquished by: (Signature)


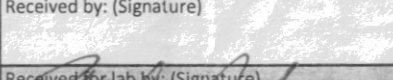
Date: 09/29/21
 Time: 1400

Received by: (Signature)


Trip Blank Received: Yes/No
 Yes No
 MeOH TBR
 Temp: 21.0/21.1 °C
 Bottles Received: 101

Relinquished by: (Signature)


Date:
 Time:

Received for Lab by: (Signature)


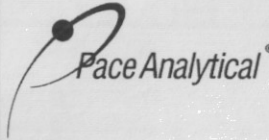
Date: 9/30/21
 Time: 0900

If preservation required by Login: Date/Time
 Hold:
 Condition:
 NCF OK

Company Name/Address:
Arcadis - Chevron - WA
 1100 Olive Way
 Suite 800
 Seattle, WA 98101

Billing Information:
 Attn: Accounts Payable
 630 Plaza Dr., Ste. 600
 Highlands Ranch, CO 80129

Analysis / Container / Preservative

Chain of Custody Page **3** of **3**

 12065 Lebanon Rd Mount Juliet, TN 37122
 Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: <https://info.pacelabs.com/hubfs/pas-standard-terms.pdf>

Report to:
Ada Hamilton/Alex Laws

Email To:
 alexander.laws@arcadis.com;Ada.Hamilton@ar

Project Description:
97502

City/State Collected:
SEDRO-WOODLEY, WA

Please Circle:
 PT MT CT ET

Phone: **206-325-5254**

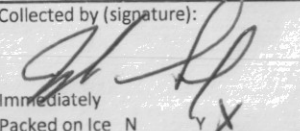
Client Project #
30064310 07.21-Plan

Lab Project #
CHEVARCWA-97502

Collected by (print):
J. SEVINC / M. ANDREWS / B. PAULEY

Site/Facility ID #
640 METCALF ST SEDRO-

P.O. #

Collected by (signature):

 Immediately Packed on Ice N Y X

Rush? (Lab MUST Be Notified)
 Same Day Five Day
 Next Day 5 Day (Rad Only)
 Two Day 10 Day (Rad Only)
 Three Day

Quote #
 Date Results Needed
 No. of Cntrs

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	BTEXM 8260D 40mlAmb-HCl	Diss Pb 6010 250mlHDPE-NoPres	NWTPHDX LVINOSGT 40mlAmb-HCl-BT	NWTPHGX 40mlAmb HCl	PAHs 8270ESIM 40mlAmb-NoPres-WT
MW-5-20210928	G	GW	—	09/28/21	1155	9	X	X	X	X	
TRIP BLANK	—	GW	—	—	—	4					
		GW									
		GW									
		GW									
		GW									

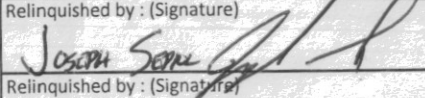
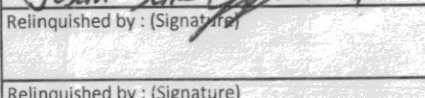
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SDG # **L1411457**
 Table #
 Acctnum: **CHEVARCWA**
 Template: **T194616**
 Prelogin: **P871798**
 PM: **110 - Brian Ford**
 PB: **NS 9/9/21**
 Shipped Via:

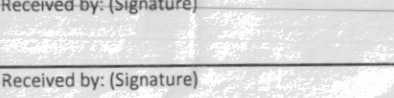
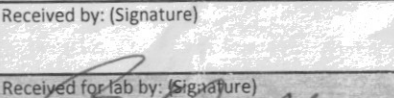
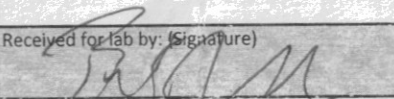
* Matrix:
 SS - Soil AIR - Air F - Filter
 GW - Groundwater B - Bioassay
 WW - WasteWater
 DW - Drinking Water
 OT - Other

Remarks:
 pH _____ Temp _____
 Flow _____ Other _____
 Samples returned via:
 UPS FedEx Courier
 Tracking # **5217 3313 6680**

Sample Receipt Checklist
 COC Seal Present/Intact: NP N
 COC Signed/Accurate: N N
 Bottles arrive intact: N N
 Correct bottles used: N N
 Sufficient volume sent: N N
 If Applicable
 VOA Zero Headspace: N N
 Preservation Correct/Checked: N N
 RAD Screen <0.5 mR/hr: N N

Relinquished by: (Signature)

 Relinquished by: (Signature)

 Relinquished by: (Signature)

Date: **09/29/21**
 Time: **1400**

Received by: (Signature)

 Received by: (Signature)

 Received for lab by: (Signature)


Trip Blank Received: Yes No
 HCl / MeOH TBR
 Temp: **21.21** °C
 Bottles Received: **191**
 Date: **9/29/21** Time: **0900**

If preservation required by Login: Date/Time
 Hold:
 Condition: **NCF / OK**

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lead,Dissolved	U		2.99	6.00	1	10/08/2021 02:27	WG1753399

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	72.6	B	31.6	100 UB	1	10/07/2021 06:25	WG1752149
(S) a,a,a-Trifluorotoluene(FID)	95.9			78.0-120		10/07/2021 06:25	WG1752149

- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	10/07/2021 07:10	WG1752724
Toluene	U		0.278	1.00	1	10/07/2021 07:10	WG1752724
Ethylbenzene	U		0.137	1.00	1	10/07/2021 07:10	WG1752724
Total Xylenes	U		0.174	3.00	1	10/07/2021 07:10	WG1752724
Methyl tert-butyl ether	U		0.101	1.00	1	10/07/2021 07:10	WG1752724
(S) Toluene-d8	120			80.0-120		10/07/2021 07:10	WG1752724
(S) 4-Bromofluorobenzene	89.3			77.0-126		10/07/2021 07:10	WG1752724
(S) 1,2-Dichloroethane-d4	90.2			70.0-130		10/07/2021 07:10	WG1752724

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	U		66.7	200	1	10/11/2021 20:40	WG1754008
Residual Range Organics (RRO)	U		83.3	250	1	10/11/2021 20:40	WG1754008
(S) o-Terphenyl	111			52.0-156		10/11/2021 20:40	WG1754008

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lead,Dissolved	U		2.99	6.00	1	10/08/2021 03:00	WG1753399

1 Cp

2 Tc

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	10/07/2021 06:46	WG1752149
(S) a,a,a-Trifluorotoluene(FID)	95.4			78.0-120		10/07/2021 06:46	WG1752149

3 Ss

4 Cn

5 Sr

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	0.124	J	0.0941	1.00	1	10/07/2021 07:30	WG1752724
Toluene	125	IE	0.278	1.00	1	10/07/2021 07:30	WG1752724
Ethylbenzene	152	IE	0.137	1.00	1	10/07/2021 07:30	WG1752724
Total Xylenes	616	IE	0.174	3.00	1	10/07/2021 07:30	WG1752724
Methyl tert-butyl ether	U		0.101	1.00	1	10/07/2021 07:30	WG1752724
(S) Toluene-d8	114			80.0-120		10/07/2021 07:30	WG1752724
(S) 4-Bromofluorobenzene	93.6			77.0-126		10/07/2021 07:30	WG1752724
(S) 1,2-Dichloroethane-d4	91.8			70.0-130		10/07/2021 07:30	WG1752724

6 Qc

7 Gl

8 Al

9 Sc

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	546		66.7	200	1	10/11/2021 21:06	WG1754008
Residual Range Organics (RRO)	U		83.3	250	1	10/11/2021 21:06	WG1754008
(S) o-Terphenyl	106			52.0-156		10/11/2021 21:06	WG1754008

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lead,Dissolved	U		2.99	6.00	1	10/08/2021 03:03	WG1753399

1 Cp

2 Tc

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	5110		31.6	100	1	10/07/2021 07:08	WG1752149
(S) a,a,a-Trifluorotoluene(FID)	99.1			78.0-120		10/07/2021 07:08	WG1752149

3 Ss

4 Cn

5 Sr

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	0.394	J	0.0941	1.00	1	10/07/2021 07:48	WG1752724
Toluene	7.98	J	0.278	1.00	1	10/07/2021 07:48	WG1752724
Ethylbenzene	454	J	0.137	1.00	1	10/07/2021 07:48	WG1752724
Total Xylenes	837	J	0.174	3.00	1	10/07/2021 07:48	WG1752724
Methyl tert-butyl ether	U	JJ	0.101	1.00	1	10/07/2021 07:48	WG1752724
(S) Toluene-d8	113			80.0-120		10/07/2021 07:48	WG1752724
(S) 4-Bromofluorobenzene	74.6	J2		77.0-126		10/07/2021 07:48	WG1752724
(S) 1,2-Dichloroethane-d4	96.6			70.0-130		10/07/2021 07:48	WG1752724

6 Qc

7 Gl

8 Al

9 Sc

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	556		66.7	200	1	10/11/2021 21:32	WG1754008
Residual Range Organics (RRO)	U		83.3	250	1	10/11/2021 21:32	WG1754008
(S) o-Terphenyl	103			52.0-156		10/11/2021 21:32	WG1754008

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lead,Dissolved	U		2.99	6.00	1	10/08/2021 03:06	WG1753399

1 Cp

2 Tc

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	8850		31.6	100	1	10/07/2021 07:30	WG1752149
(S) a,a,a-Trifluorotoluene(FID)	94.8			78.0-120		10/07/2021 07:30	WG1752149

3 Ss

4 Cn

5 Sr

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	10/07/2021 11:36	WG1752727
Toluene	U		0.278	1.00	1	10/07/2021 11:36	WG1752727
Ethylbenzene	U		0.137	1.00	1	10/07/2021 11:36	WG1752727
Total Xylenes	U		0.174	3.00	1	10/07/2021 11:36	WG1752727
Methyl tert-butyl ether	U		0.101	1.00	1	10/07/2021 11:36	WG1752727
(S) Toluene-d8	119			80.0-120		10/07/2021 11:36	WG1752727
(S) 4-Bromofluorobenzene	89.1			77.0-126		10/07/2021 11:36	WG1752727
(S) 1,2-Dichloroethane-d4	91.1			70.0-130		10/07/2021 11:36	WG1752727

6 Qc

7 Gl

8 Al

9 Sc

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	440		66.7	200	1	10/11/2021 21:58	WG1754008
Residual Range Organics (RRO)	U		83.3	250	1	10/11/2021 21:58	WG1754008
(S) o-Terphenyl	114			52.0-156		10/11/2021 21:58	WG1754008

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lead,Dissolved	U		2.99	6.00	1	10/08/2021 03:09	WG1753399

1 Cp

2 Tc

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	3600		31.6	100	1	10/07/2021 08:44	WG1752149
(S) a,a,a-Trifluorotoluene(FID)	80.8			78.0-120		10/07/2021 08:44	WG1752149

3 Ss

4 Cn

5 Sr

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	10/07/2021 11:55	WG1752727
Toluene	U		0.278	1.00	1	10/07/2021 11:55	WG1752727
Ethylbenzene	1.11	J	0.137	1.00	1	10/07/2021 11:55	WG1752727
Total Xylenes	0.574	J	0.174	3.00	1	10/07/2021 11:55	WG1752727
Methyl tert-butyl ether	U		0.101	1.00	1	10/07/2021 11:55	WG1752727
(S) Toluene-d8	126	J1		80.0-120		10/07/2021 11:55	WG1752727
(S) 4-Bromofluorobenzene	96.1			77.0-126		10/07/2021 11:55	WG1752727
(S) 1,2-Dichloroethane-d4	90.1			70.0-130		10/07/2021 11:55	WG1752727

6 Qc

7 Gl

8 Al

9 Sc

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	305		66.7	200	1	10/11/2021 22:24	WG1754008
Residual Range Organics (RRO)	U		83.3	250	1	10/11/2021 22:24	WG1754008
(S) o-Terphenyl	107			52.0-156		10/11/2021 22:24	WG1754008

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lead,Dissolved	3.80	J	2.99	6.00	1	10/08/2021 03:12	WG1753399

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	367		31.6	100	1	10/06/2021 20:48	WG1752816
(S) a,a,a-Trifluorotoluene(FID)	91.1			78.0-120		10/06/2021 20:48	WG1752816

- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	10/07/2021 12:14	WG1752727
Toluene	U		0.278	1.00	1	10/07/2021 12:14	WG1752727
Ethylbenzene	U		0.137	1.00	1	10/07/2021 12:14	WG1752727
Total Xylenes	U		0.174	3.00	1	10/07/2021 12:14	WG1752727
Methyl tert-butyl ether	U		0.101	1.00	1	10/07/2021 12:14	WG1752727
(S) Toluene-d8	120			80.0-120		10/07/2021 12:14	WG1752727
(S) 4-Bromofluorobenzene	81.3			77.0-126		10/07/2021 12:14	WG1752727
(S) 1,2-Dichloroethane-d4	91.4			70.0-130		10/07/2021 12:14	WG1752727

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	161	J	66.7	200	1	10/11/2021 22:50	WG1754008
Residual Range Organics (RRO)	U		83.3	250	1	10/11/2021 22:50	WG1754008
(S) o-Terphenyl	108			52.0-156		10/11/2021 22:50	WG1754008

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lead,Dissolved	U		2.99	6.00	1	10/08/2021 03:14	WG1753399

1 Cp
2 Tc
3 Ss
4 Cn

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	8990		31.6	100	1	10/06/2021 21:16	WG1752816
(S) a,a,a-Trifluorotoluene(FID)	99.2			78.0-120		10/06/2021 21:16	WG1752816

5 Sr
6 Qc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	0.124	J	0.0941	1.00	1	10/07/2021 12:34	WG1752727
Toluene	14.6	J	0.278	1.00	1	10/07/2021 12:34	WG1752727
Ethylbenzene	359	J	0.137	1.00	1	10/07/2021 12:34	WG1752727
Total Xylenes	1390	J	0.174	3.00	1	10/07/2021 12:34	WG1752727
Methyl tert-butyl ether	U		0.101	1.00	1	10/07/2021 12:34	WG1752727
(S) Toluene-d8	122	J1		80.0-120		10/07/2021 12:34	WG1752727
(S) 4-Bromofluorobenzene	102			77.0-126		10/07/2021 12:34	WG1752727
(S) 1,2-Dichloroethane-d4	93.8			70.0-130		10/07/2021 12:34	WG1752727

7 Gl
8 Al
9 Sc

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	565		66.7	200	1	10/11/2021 23:15	WG1754008
Residual Range Organics (RRO)	U		83.3	250	1	10/11/2021 23:15	WG1754008
(S) o-Terphenyl	113			52.0-156		10/11/2021 23:15	WG1754008

Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzo(a)anthracene	U		0.0203	0.0500	1	10/05/2021 11:49	WG1750686
Benzo(a)pyrene	U		0.0184	0.0500	1	10/05/2021 11:49	WG1750686
Benzo(b)fluoranthene	U		0.0168	0.0500	1	10/05/2021 11:49	WG1750686
Benzo(k)fluoranthene	U		0.0202	0.0500	1	10/05/2021 11:49	WG1750686
Chrysene	U		0.0179	0.0500	1	10/05/2021 11:49	WG1750686
Dibenz(a,h)anthracene	U		0.0160	0.0500	1	10/05/2021 11:49	WG1750686
Indeno(1,2,3-cd)pyrene	U		0.0158	0.0500	1	10/05/2021 11:49	WG1750686
Naphthalene	105 D		1.83	5.00	20	10/06/2021 00:32	WG1750686
1-Methylnaphthalene	16.9		0.0687	0.250	1	10/05/2021 11:49	WG1750686
2-Methylnaphthalene	19.7		0.0674	0.250	1	10/05/2021 11:49	WG1750686
(S) Nitrobenzene-d5	97.0			31.0-160		10/05/2021 11:49	WG1750686
(S) Nitrobenzene-d5	90.0	J7		31.0-160		10/06/2021 00:32	WG1750686
(S) 2-Fluorobiphenyl	107			48.0-148		10/05/2021 11:49	WG1750686
(S) 2-Fluorobiphenyl	105	J7		48.0-148		10/06/2021 00:32	WG1750686
(S) p-Terphenyl-d14	134			37.0-146		10/05/2021 11:49	WG1750686
(S) p-Terphenyl-d14	116	J7		37.0-146		10/06/2021 00:32	WG1750686

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lead,Dissolved	4.16	J	2.99	6.00	1	10/08/2021 03:17	WG1753399

1 Cp

2 Tc

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	233		31.6	100	1	10/06/2021 21:44	WG1752816
(S) a,a,a-Trifluorotoluene(FID)	94.9			78.0-120		10/06/2021 21:44	WG1752816

3 Ss

4 Cn

5 Sr

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	10/07/2021 12:53	WG1752727
Toluene	U		0.278	1.00	1	10/07/2021 12:53	WG1752727
Ethylbenzene	2.30	J	0.137	1.00	1	10/07/2021 12:53	WG1752727
Total Xylenes	12.9	J	0.174	3.00	1	10/07/2021 12:53	WG1752727
Methyl tert-butyl ether	U		0.101	1.00	1	10/07/2021 12:53	WG1752727
(S) Toluene-d8	121	J1		80.0-120		10/07/2021 12:53	WG1752727
(S) 4-Bromofluorobenzene	79.7			77.0-126		10/07/2021 12:53	WG1752727
(S) 1,2-Dichloroethane-d4	87.9			70.0-130		10/07/2021 12:53	WG1752727

6 Qc

7 Gl

8 Al

9 Sc

Sample Narrative:

L1411457-08 WG1752727: Ethylbenzene and Xylenes possibly biased high due to instrument carryover.

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	244		66.7	200	1	10/11/2021 23:41	WG1754008
Residual Range Organics (RRO)	U		83.3	250	1	10/11/2021 23:41	WG1754008
(S) o-Terphenyl	113			52.0-156		10/11/2021 23:41	WG1754008

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lead,Dissolved	U		2.99	6.00	1	10/08/2021 03:20	WG1753399

1 Cp

2 Tc

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	4530		31.6	100	1	10/06/2021 22:13	WG1752816
(S) a,a,a-Trifluorotoluene(FID)	87.6			78.0-120		10/06/2021 22:13	WG1752816

3 Ss

4 Cn

5 Sr

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	0.194	J	0.0941	1.00	1	10/07/2021 13:12	WG1752727
Toluene	1.56		0.278	1.00	1	10/07/2021 13:12	WG1752727
Ethylbenzene	73.4		0.137	1.00	1	10/07/2021 13:12	WG1752727
Total Xylenes	122		0.174	3.00	1	10/07/2021 13:12	WG1752727
Methyl tert-butyl ether	U		0.101	1.00	1	10/07/2021 13:12	WG1752727
(S) Toluene-d8	116			80.0-120		10/07/2021 13:12	WG1752727
(S) 4-Bromofluorobenzene	91.6			77.0-126		10/07/2021 13:12	WG1752727
(S) 1,2-Dichloroethane-d4	86.1			70.0-130		10/07/2021 13:12	WG1752727

6 Qc

7 Gl

8 Al

9 Sc

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	752		66.7	200	1	10/12/2021 00:07	WG1754008
Residual Range Organics (RRO)	U		83.3	250	1	10/12/2021 00:07	WG1754008
(S) o-Terphenyl	107			52.0-156		10/12/2021 00:07	WG1754008

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lead,Dissolved	U		2.99	6.00	1	10/08/2021 03:28	WG1753399

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	4940		31.6	100	1	10/06/2021 22:41	WG1752816
(S) a,a,a-Trifluorotoluene(FID)	86.9			78.0-120		10/06/2021 22:41	WG1752816

6 Qc
7 Gl
8 Al
9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	0.147	J	0.0941	1.00	1	10/07/2021 13:31	WG1752727
Toluene	1.61		0.278	1.00	1	10/07/2021 13:31	WG1752727
Ethylbenzene	76.3		0.137	1.00	1	10/07/2021 13:31	WG1752727
Total Xylenes	108		0.174	3.00	1	10/07/2021 13:31	WG1752727
Methyl tert-butyl ether	U		0.101	1.00	1	10/07/2021 13:31	WG1752727
(S) Toluene-d8	119			80.0-120		10/07/2021 13:31	WG1752727
(S) 4-Bromofluorobenzene	81.0			77.0-126		10/07/2021 13:31	WG1752727
(S) 1,2-Dichloroethane-d4	86.6			70.0-130		10/07/2021 13:31	WG1752727

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	730		66.7	200	1	10/12/2021 00:33	WG1754008
Residual Range Organics (RRO)	U		83.3	250	1	10/12/2021 00:33	WG1754008
(S) o-Terphenyl	105			52.0-156		10/12/2021 00:33	WG1754008

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lead,Dissolved	U		2.99	6.00	1	10/08/2021 03:31	WG1753399

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	539		31.6	100	1	10/06/2021 23:09	WG1752816
(S) a,a,a-Trifluorotoluene(FID)	94.8			78.0-120		10/06/2021 23:09	WG1752816

- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	10/07/2021 13:50	WG1752727
Toluene	U		0.278	1.00	1	10/07/2021 13:50	WG1752727
Ethylbenzene	0.593	J	0.137	1.00	1	10/07/2021 13:50	WG1752727
Total Xylenes	1.36	J	0.174	3.00	1	10/07/2021 13:50	WG1752727
Methyl tert-butyl ether	U		0.101	1.00	1	10/07/2021 13:50	WG1752727
(S) Toluene-d8	117			80.0-120		10/07/2021 13:50	WG1752727
(S) 4-Bromofluorobenzene	94.4			77.0-126		10/07/2021 13:50	WG1752727
(S) 1,2-Dichloroethane-d4	90.1			70.0-130		10/07/2021 13:50	WG1752727

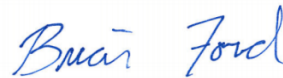
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	305		66.7	200	1	10/12/2021 00:59	WG1754008
Residual Range Organics (RRO)	U		83.3	250	1	10/12/2021 00:59	WG1754008
(S) o-Terphenyl	108			52.0-156		10/12/2021 00:59	WG1754008

Arcadis - Chevron - WA

Sample Delivery Group: L1411457
Samples Received: 09/30/2021
Project Number: 30064310 07.21-Plan
Description: 97502
Site: 640 METCALF ST SEDRO-WOOLLEY
Report To: Ada Hamilton/Alex Laws
1100 Olive Way
Suite 800
Seattle, WA 98101

Entire Report Reviewed By:



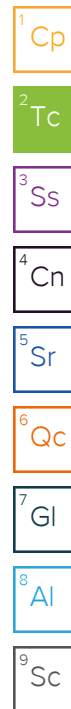
Brian Ford
Project Manager

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Pace Analytical National12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

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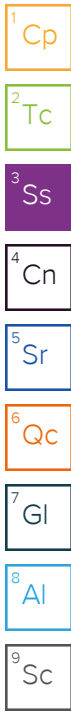


SAMPLE SUMMARY

RS-1-092821 L1411457-01 GW

Collected by: BP/JS/MA
 Collected date/time: 09/28/21 16:45
 Received date/time: 09/30/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG1753399	1	10/07/21 17:54	10/08/21 02:27	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1752149	1	10/07/21 06:25	10/07/21 06:25	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1752724	1	10/07/21 07:10	10/07/21 07:10	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1754008	1	10/11/21 04:08	10/11/21 20:40	DMG	Mt. Juliet, TN



MW-17_210928 L1411457-02 GW

Collected by: BP/JS/MA
 Collected date/time: 09/28/21 11:31
 Received date/time: 09/30/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG1753399	1	10/07/21 17:54	10/08/21 03:00	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1752149	1	10/07/21 06:46	10/07/21 06:46	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1752724	1	10/07/21 07:30	10/07/21 07:30	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1754008	1	10/11/21 04:08	10/11/21 21:06	DMG	Mt. Juliet, TN

MW-14_210928 L1411457-03 GW

Collected by: BP/JS/MA
 Collected date/time: 09/28/21 16:06
 Received date/time: 09/30/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG1753399	1	10/07/21 17:54	10/08/21 03:03	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1752149	1	10/07/21 07:08	10/07/21 07:08	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1752724	1	10/07/21 07:48	10/07/21 07:48	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1754008	1	10/11/21 04:08	10/11/21 21:32	DMG	Mt. Juliet, TN

MW-4_210928 L1411457-04 GW

Collected by: BP/JS/MA
 Collected date/time: 09/28/21 13:00
 Received date/time: 09/30/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG1753399	1	10/07/21 17:54	10/08/21 03:06	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1752149	1	10/07/21 07:30	10/07/21 07:30	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1752727	1	10/07/21 11:36	10/07/21 11:36	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1754008	1	10/11/21 04:08	10/11/21 21:58	DMG	Mt. Juliet, TN

MW-8_210928 L1411457-05 GW

Collected by: BP/JS/MA
 Collected date/time: 09/28/21 16:00
 Received date/time: 09/30/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG1753399	1	10/07/21 17:54	10/08/21 03:09	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1752149	1	10/07/21 08:44	10/07/21 08:44	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1752727	1	10/07/21 11:55	10/07/21 11:55	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1754008	1	10/11/21 04:08	10/11/21 22:24	DMG	Mt. Juliet, TN

MW-18_210928 L1411457-06 GW

Collected by: BP/JS/MA
 Collected date/time: 09/28/21 10:21
 Received date/time: 09/30/21 09:00

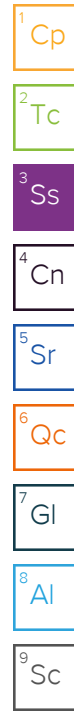
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG1753399	1	10/07/21 17:54	10/08/21 03:12	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1752816	1	10/06/21 20:48	10/06/21 20:48	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1752727	1	10/07/21 12:14	10/07/21 12:14	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1754008	1	10/11/21 04:08	10/11/21 22:50	DMG	Mt. Juliet, TN

SAMPLE SUMMARY

MW-7_210928 L1411457-07 GW

Collected by
BP/JS/MA Collected date/time
09/28/21 14:15 Received date/time
09/30/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG1753399	1	10/07/21 17:54	10/08/21 03:14	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1752816	1	10/06/21 21:16	10/06/21 21:16	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1752727	1	10/07/21 12:34	10/07/21 12:34	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1754008	1	10/11/21 04:08	10/11/21 23:15	DMG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG1750686	1	10/04/21 18:34	10/05/21 11:49	LEA	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG1750686	20	10/04/21 18:34	10/06/21 00:32	AAT	Mt. Juliet, TN



MW-21_210928 L1411457-08 GW

Collected by
BP/JS/MA Collected date/time
09/28/21 10:35 Received date/time
09/30/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG1753399	1	10/07/21 17:54	10/08/21 03:17	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1752816	1	10/06/21 21:44	10/06/21 21:44	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1752727	1	10/07/21 12:53	10/07/21 12:53	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1754008	1	10/11/21 04:08	10/11/21 23:41	DMG	Mt. Juliet, TN

DUP-1_210928 L1411457-09 GW

Collected by
BP/JS/MA Collected date/time
09/28/21 00:00 Received date/time
09/30/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG1753399	1	10/07/21 17:54	10/08/21 03:20	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1752816	1	10/06/21 22:13	10/06/21 22:13	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1752727	1	10/07/21 13:12	10/07/21 13:12	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1754008	1	10/11/21 04:08	10/12/21 00:07	DMG	Mt. Juliet, TN

MW-13_210928 L1411457-10 GW

Collected by
BP/JS/MA Collected date/time
09/28/21 12:52 Received date/time
09/30/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG1753399	1	10/07/21 17:54	10/08/21 03:28	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1752816	1	10/06/21 22:41	10/06/21 22:41	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1752727	1	10/07/21 13:31	10/07/21 13:31	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1754008	1	10/11/21 04:08	10/12/21 00:33	DMG	Mt. Juliet, TN

MW-5_210928 L1411457-11 GW

Collected by
BP/JS/MA Collected date/time
09/28/21 11:55 Received date/time
09/30/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG1753399	1	10/07/21 17:54	10/08/21 03:31	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1752816	1	10/06/21 23:09	10/06/21 23:09	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1752727	1	10/07/21 13:50	10/07/21 13:50	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1754008	1	10/11/21 04:08	10/12/21 00:59	DMG	Mt. Juliet, TN

TRIP BLANK_210928 L1411457-12 GW

Collected by
BP/JS/MA Collected date/time
09/28/21 00:00 Received date/time
09/30/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
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CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Brian Ford
Project Manager

- ¹ Cp
- ² Tc
- ³ Ss
- ⁴ Cn
- ⁵ Sr
- ⁶ Qc
- ⁷ Gl
- ⁸ Al
- ⁹ Sc

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lead,Dissolved	U		2.99	6.00	1	10/08/2021 02:27	WG1753399

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	72.6	<u>B</u>	31.6	100	1	10/07/2021 06:25	WG1752149
(S) a,a,a-Trifluorotoluene(FID)	95.9			78.0-120		10/07/2021 06:25	WG1752149

- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	10/07/2021 07:10	WG1752724
Toluene	U		0.278	1.00	1	10/07/2021 07:10	WG1752724
Ethylbenzene	U		0.137	1.00	1	10/07/2021 07:10	WG1752724
Total Xylenes	U		0.174	3.00	1	10/07/2021 07:10	WG1752724
Methyl tert-butyl ether	U		0.101	1.00	1	10/07/2021 07:10	WG1752724
(S) Toluene-d8	120			80.0-120		10/07/2021 07:10	WG1752724
(S) 4-Bromofluorobenzene	89.3			77.0-126		10/07/2021 07:10	WG1752724
(S) 1,2-Dichloroethane-d4	90.2			70.0-130		10/07/2021 07:10	WG1752724

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	U		66.7	200	1	10/11/2021 20:40	WG1754008
Residual Range Organics (RRO)	U		83.3	250	1	10/11/2021 20:40	WG1754008
(S) o-Terphenyl	111			52.0-156		10/11/2021 20:40	WG1754008

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lead,Dissolved	U		2.99	6.00	1	10/08/2021 03:00	WG1753399

1 Cp

2 Tc

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	10/07/2021 06:46	WG1752149
(S) a,a,a-Trifluorotoluene(FID)	95.4			78.0-120		10/07/2021 06:46	WG1752149

3 Ss

4 Cn

5 Sr

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	0.124	J	0.0941	1.00	1	10/07/2021 07:30	WG1752724
Toluene	125	E	0.278	1.00	1	10/07/2021 07:30	WG1752724
Ethylbenzene	152	E	0.137	1.00	1	10/07/2021 07:30	WG1752724
Total Xylenes	616	E	0.174	3.00	1	10/07/2021 07:30	WG1752724
Methyl tert-butyl ether	U		0.101	1.00	1	10/07/2021 07:30	WG1752724
(S) Toluene-d8	114			80.0-120		10/07/2021 07:30	WG1752724
(S) 4-Bromofluorobenzene	93.6			77.0-126		10/07/2021 07:30	WG1752724
(S) 1,2-Dichloroethane-d4	91.8			70.0-130		10/07/2021 07:30	WG1752724

6 Qc

7 Gl

8 Al

9 Sc

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	546		66.7	200	1	10/11/2021 21:06	WG1754008
Residual Range Organics (RRO)	U		83.3	250	1	10/11/2021 21:06	WG1754008
(S) o-Terphenyl	106			52.0-156		10/11/2021 21:06	WG1754008

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lead,Dissolved	U		2.99	6.00	1	10/08/2021 03:03	WG1753399

1 Cp

2 Tc

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	5110		31.6	100	1	10/07/2021 07:08	WG1752149
(S) a,a,a-Trifluorotoluene(FID)	99.1			78.0-120		10/07/2021 07:08	WG1752149

3 Ss

4 Cn

5 Sr

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	0.394	J	0.0941	1.00	1	10/07/2021 07:48	WG1752724
Toluene	7.98		0.278	1.00	1	10/07/2021 07:48	WG1752724
Ethylbenzene	454	E	0.137	1.00	1	10/07/2021 07:48	WG1752724
Total Xylenes	837	E	0.174	3.00	1	10/07/2021 07:48	WG1752724
Methyl tert-butyl ether	U		0.101	1.00	1	10/07/2021 07:48	WG1752724
(S) Toluene-d8	113			80.0-120		10/07/2021 07:48	WG1752724
(S) 4-Bromofluorobenzene	74.6	J2		77.0-126		10/07/2021 07:48	WG1752724
(S) 1,2-Dichloroethane-d4	96.6			70.0-130		10/07/2021 07:48	WG1752724

6 Qc

7 Gl

8 Al

9 Sc

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	556		66.7	200	1	10/11/2021 21:32	WG1754008
Residual Range Organics (RRO)	U		83.3	250	1	10/11/2021 21:32	WG1754008
(S) o-Terphenyl	103			52.0-156		10/11/2021 21:32	WG1754008

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lead,Dissolved	U		2.99	6.00	1	10/08/2021 03:06	WG1753399

1 Cp

2 Tc

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	8850		31.6	100	1	10/07/2021 07:30	WG1752149
(S) a,a,a-Trifluorotoluene(FID)	94.8			78.0-120		10/07/2021 07:30	WG1752149

3 Ss

4 Cn

5 Sr

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	10/07/2021 11:36	WG1752727
Toluene	U		0.278	1.00	1	10/07/2021 11:36	WG1752727
Ethylbenzene	U		0.137	1.00	1	10/07/2021 11:36	WG1752727
Total Xylenes	U		0.174	3.00	1	10/07/2021 11:36	WG1752727
Methyl tert-butyl ether	U		0.101	1.00	1	10/07/2021 11:36	WG1752727
(S) Toluene-d8	119			80.0-120		10/07/2021 11:36	WG1752727
(S) 4-Bromofluorobenzene	89.1			77.0-126		10/07/2021 11:36	WG1752727
(S) 1,2-Dichloroethane-d4	91.1			70.0-130		10/07/2021 11:36	WG1752727

6 Qc

7 Gl

8 Al

9 Sc

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	440		66.7	200	1	10/11/2021 21:58	WG1754008
Residual Range Organics (RRO)	U		83.3	250	1	10/11/2021 21:58	WG1754008
(S) o-Terphenyl	114			52.0-156		10/11/2021 21:58	WG1754008

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lead,Dissolved	U		2.99	6.00	1	10/08/2021 03:09	WG1753399

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	3600		31.6	100	1	10/07/2021 08:44	WG1752149
(S) a,a,a-Trifluorotoluene(FID)	80.8			78.0-120		10/07/2021 08:44	WG1752149

6 Qc
7 Gl
8 Al
9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	10/07/2021 11:55	WG1752727
Toluene	U		0.278	1.00	1	10/07/2021 11:55	WG1752727
Ethylbenzene	1.11		0.137	1.00	1	10/07/2021 11:55	WG1752727
Total Xylenes	0.574	J	0.174	3.00	1	10/07/2021 11:55	WG1752727
Methyl tert-butyl ether	U		0.101	1.00	1	10/07/2021 11:55	WG1752727
(S) Toluene-d8	126	J1		80.0-120		10/07/2021 11:55	WG1752727
(S) 4-Bromofluorobenzene	96.1			77.0-126		10/07/2021 11:55	WG1752727
(S) 1,2-Dichloroethane-d4	90.1			70.0-130		10/07/2021 11:55	WG1752727

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	305		66.7	200	1	10/11/2021 22:24	WG1754008
Residual Range Organics (RRO)	U		83.3	250	1	10/11/2021 22:24	WG1754008
(S) o-Terphenyl	107			52.0-156		10/11/2021 22:24	WG1754008

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lead,Dissolved	3.80	J	2.99	6.00	1	10/08/2021 03:12	WG1753399

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	367		31.6	100	1	10/06/2021 20:48	WG1752816
(S) a,a,a-Trifluorotoluene(FID)	91.1			78.0-120		10/06/2021 20:48	WG1752816

- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	10/07/2021 12:14	WG1752727
Toluene	U		0.278	1.00	1	10/07/2021 12:14	WG1752727
Ethylbenzene	U		0.137	1.00	1	10/07/2021 12:14	WG1752727
Total Xylenes	U		0.174	3.00	1	10/07/2021 12:14	WG1752727
Methyl tert-butyl ether	U		0.101	1.00	1	10/07/2021 12:14	WG1752727
(S) Toluene-d8	120			80.0-120		10/07/2021 12:14	WG1752727
(S) 4-Bromofluorobenzene	81.3			77.0-126		10/07/2021 12:14	WG1752727
(S) 1,2-Dichloroethane-d4	91.4			70.0-130		10/07/2021 12:14	WG1752727

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	161	J	66.7	200	1	10/11/2021 22:50	WG1754008
Residual Range Organics (RRO)	U		83.3	250	1	10/11/2021 22:50	WG1754008
(S) o-Terphenyl	108			52.0-156		10/11/2021 22:50	WG1754008

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lead,Dissolved	U		2.99	6.00	1	10/08/2021 03:14	WG1753399

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	8990		31.6	100	1	10/06/2021 21:16	WG1752816
(S) a,a,a-Trifluorotoluene(FID)	99.2			78.0-120		10/06/2021 21:16	WG1752816

6 Qc
7 Gl
8 Al
9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	0.124	J	0.0941	1.00	1	10/07/2021 12:34	WG1752727
Toluene	14.6		0.278	1.00	1	10/07/2021 12:34	WG1752727
Ethylbenzene	359	E	0.137	1.00	1	10/07/2021 12:34	WG1752727
Total Xylenes	1390	E	0.174	3.00	1	10/07/2021 12:34	WG1752727
Methyl tert-butyl ether	U		0.101	1.00	1	10/07/2021 12:34	WG1752727
(S) Toluene-d8	122	J1		80.0-120		10/07/2021 12:34	WG1752727
(S) 4-Bromofluorobenzene	102			77.0-126		10/07/2021 12:34	WG1752727
(S) 1,2-Dichloroethane-d4	93.8			70.0-130		10/07/2021 12:34	WG1752727

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	565		66.7	200	1	10/11/2021 23:15	WG1754008
Residual Range Organics (RRO)	U		83.3	250	1	10/11/2021 23:15	WG1754008
(S) o-Terphenyl	113			52.0-156		10/11/2021 23:15	WG1754008

Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzo(a)anthracene	U		0.0203	0.0500	1	10/05/2021 11:49	WG1750686
Benzo(a)pyrene	U		0.0184	0.0500	1	10/05/2021 11:49	WG1750686
Benzo(b)fluoranthene	U		0.0168	0.0500	1	10/05/2021 11:49	WG1750686
Benzo(k)fluoranthene	U		0.0202	0.0500	1	10/05/2021 11:49	WG1750686
Chrysene	U		0.0179	0.0500	1	10/05/2021 11:49	WG1750686
Dibenz(a,h)anthracene	U		0.0160	0.0500	1	10/05/2021 11:49	WG1750686
Indeno(1,2,3-cd)pyrene	U		0.0158	0.0500	1	10/05/2021 11:49	WG1750686
Naphthalene	105		1.83	5.00	20	10/06/2021 00:32	WG1750686
1-Methylnaphthalene	16.9		0.0687	0.250	1	10/05/2021 11:49	WG1750686
2-Methylnaphthalene	19.7		0.0674	0.250	1	10/05/2021 11:49	WG1750686
(S) Nitrobenzene-d5	97.0			31.0-160		10/05/2021 11:49	WG1750686
(S) Nitrobenzene-d5	90.0	J7		31.0-160		10/06/2021 00:32	WG1750686
(S) 2-Fluorobiphenyl	107			48.0-148		10/05/2021 11:49	WG1750686
(S) 2-Fluorobiphenyl	105	J7		48.0-148		10/06/2021 00:32	WG1750686
(S) p-Terphenyl-d14	134			37.0-146		10/05/2021 11:49	WG1750686
(S) p-Terphenyl-d14	116	J7		37.0-146		10/06/2021 00:32	WG1750686

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lead,Dissolved	4.16	J	2.99	6.00	1	10/08/2021 03:17	WG1753399

1 Cp

2 Tc

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	233		31.6	100	1	10/06/2021 21:44	WG1752816
(S) a,a,a-Trifluorotoluene(FID)	94.9			78.0-120		10/06/2021 21:44	WG1752816

3 Ss

4 Cn

5 Sr

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	10/07/2021 12:53	WG1752727
Toluene	U		0.278	1.00	1	10/07/2021 12:53	WG1752727
Ethylbenzene	2.30		0.137	1.00	1	10/07/2021 12:53	WG1752727
Total Xylenes	12.9		0.174	3.00	1	10/07/2021 12:53	WG1752727
Methyl tert-butyl ether	U		0.101	1.00	1	10/07/2021 12:53	WG1752727
(S) Toluene-d8	121	J1		80.0-120		10/07/2021 12:53	WG1752727
(S) 4-Bromofluorobenzene	79.7			77.0-126		10/07/2021 12:53	WG1752727
(S) 1,2-Dichloroethane-d4	87.9			70.0-130		10/07/2021 12:53	WG1752727

6 Qc

7 Gl

8 Al

9 Sc

Sample Narrative:

L1411457-08 WG1752727: Ethylbenzene and Xylenes possibly biased high due to instrument carryover.

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	244		66.7	200	1	10/11/2021 23:41	WG1754008
Residual Range Organics (RRO)	U		83.3	250	1	10/11/2021 23:41	WG1754008
(S) o-Terphenyl	113			52.0-156		10/11/2021 23:41	WG1754008

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lead,Dissolved	U		2.99	6.00	1	10/08/2021 03:20	WG1753399

1 Cp

2 Tc

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	4530		31.6	100	1	10/06/2021 22:13	WG1752816
(S) a,a,a-Trifluorotoluene(FID)	87.6			78.0-120		10/06/2021 22:13	WG1752816

3 Ss

4 Cn

5 Sr

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	0.194	J	0.0941	1.00	1	10/07/2021 13:12	WG1752727
Toluene	1.56		0.278	1.00	1	10/07/2021 13:12	WG1752727
Ethylbenzene	73.4		0.137	1.00	1	10/07/2021 13:12	WG1752727
Total Xylenes	122		0.174	3.00	1	10/07/2021 13:12	WG1752727
Methyl tert-butyl ether	U		0.101	1.00	1	10/07/2021 13:12	WG1752727
(S) Toluene-d8	116			80.0-120		10/07/2021 13:12	WG1752727
(S) 4-Bromofluorobenzene	91.6			77.0-126		10/07/2021 13:12	WG1752727
(S) 1,2-Dichloroethane-d4	86.1			70.0-130		10/07/2021 13:12	WG1752727

6 Qc

7 Gl

8 Al

9 Sc

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	752		66.7	200	1	10/12/2021 00:07	WG1754008
Residual Range Organics (RRO)	U		83.3	250	1	10/12/2021 00:07	WG1754008
(S) o-Terphenyl	107			52.0-156		10/12/2021 00:07	WG1754008

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lead,Dissolved	U		2.99	6.00	1	10/08/2021 03:28	WG1753399

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	4940		31.6	100	1	10/06/2021 22:41	WG1752816
(S) a,a,a-Trifluorotoluene(FID)	86.9			78.0-120		10/06/2021 22:41	WG1752816

- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	0.147	J	0.0941	1.00	1	10/07/2021 13:31	WG1752727
Toluene	1.61		0.278	1.00	1	10/07/2021 13:31	WG1752727
Ethylbenzene	76.3		0.137	1.00	1	10/07/2021 13:31	WG1752727
Total Xylenes	108		0.174	3.00	1	10/07/2021 13:31	WG1752727
Methyl tert-butyl ether	U		0.101	1.00	1	10/07/2021 13:31	WG1752727
(S) Toluene-d8	119			80.0-120		10/07/2021 13:31	WG1752727
(S) 4-Bromofluorobenzene	81.0			77.0-126		10/07/2021 13:31	WG1752727
(S) 1,2-Dichloroethane-d4	86.6			70.0-130		10/07/2021 13:31	WG1752727

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	730		66.7	200	1	10/12/2021 00:33	WG1754008
Residual Range Organics (RRO)	U		83.3	250	1	10/12/2021 00:33	WG1754008
(S) o-Terphenyl	105			52.0-156		10/12/2021 00:33	WG1754008

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lead,Dissolved	U		2.99	6.00	1	10/08/2021 03:31	WG1753399

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	539		31.6	100	1	10/06/2021 23:09	WG1752816
(S) a,a,a-Trifluorotoluene(FID)	94.8			78.0-120		10/06/2021 23:09	WG1752816

6 Qc
7 Gl
8 Al
9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	10/07/2021 13:50	WG1752727
Toluene	U		0.278	1.00	1	10/07/2021 13:50	WG1752727
Ethylbenzene	0.593	J	0.137	1.00	1	10/07/2021 13:50	WG1752727
Total Xylenes	1.36	J	0.174	3.00	1	10/07/2021 13:50	WG1752727
Methyl tert-butyl ether	U		0.101	1.00	1	10/07/2021 13:50	WG1752727
(S) Toluene-d8	117			80.0-120		10/07/2021 13:50	WG1752727
(S) 4-Bromofluorobenzene	94.4			77.0-126		10/07/2021 13:50	WG1752727
(S) 1,2-Dichloroethane-d4	90.1			70.0-130		10/07/2021 13:50	WG1752727

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	305		66.7	200	1	10/12/2021 00:59	WG1754008
Residual Range Organics (RRO)	U		83.3	250	1	10/12/2021 00:59	WG1754008
(S) o-Terphenyl	108			52.0-156		10/12/2021 00:59	WG1754008

Method Blank (MB)

(MB) R3713928-1 10/08/21 02:21

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Lead,Dissolved	U		2.99	6.00

¹Cp

²Tc

³Ss

Laboratory Control Sample (LCS)

(LCS) R3713928-2 10/08/21 02:24

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Lead,Dissolved	1000	933	93.3	80.0-120	

⁴Cn

⁵Sr

L1411457-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1411457-01 10/08/21 02:27 • (MS) R3713928-4 10/08/21 02:32 • (MSD) R3713928-5 10/08/21 02:35

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Lead,Dissolved	1000	U	927	928	92.7	92.8	1	75.0-125			0.0786	20

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3715023-2 10/07/21 02:02

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	40.5	J	31.6	100
(S) a,a,a-Trifluorotoluene(FID)	95.2			78.0-120

Laboratory Control Sample (LCS)

(LCS) R3715023-1 10/07/21 01:18

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5500	4960	90.2	70.0-124	
(S) a,a,a-Trifluorotoluene(FID)			103	78.0-120	

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Method Blank (MB)

(MB) R3717577-2 10/06/21 19:52

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	U		31.6	100
(S) a,a,a-Trifluorotoluene(FID)	95.8			78.0-120

Laboratory Control Sample (LCS)

(LCS) R3717577-1 10/06/21 18:35

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5500	6390	116	70.0-124	
(S) a,a,a-Trifluorotoluene(FID)			99.9	78.0-120	

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Method Blank (MB)

(MB) R3715554-3 10/07/21 01:27

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Benzene	U		0.0941	1.00
Ethylbenzene	U		0.137	1.00
Methyl tert-butyl ether	U		0.101	1.00
Toluene	U		0.278	1.00
Xylenes, Total	U		0.174	3.00
<i>(S) Toluene-d8</i>	117			80.0-120
<i>(S) 4-Bromofluorobenzene</i>	88.8			77.0-126
<i>(S) 1,2-Dichloroethane-d4</i>	93.9			70.0-130

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3715554-1 10/07/21 00:30 • (LCSD) R3715554-2 10/07/21 00:49

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Benzene	5.00	5.20	5.09	104	102	70.0-123			2.14	20
Ethylbenzene	5.00	5.62	5.92	112	118	79.0-123			5.20	20
Methyl tert-butyl ether	5.00	4.49	4.37	89.8	87.4	68.0-125			2.71	20
Toluene	5.00	5.73	5.66	115	113	79.0-120			1.23	20
Xylenes, Total	15.0	15.9	15.9	106	106	79.0-123			0.000	20
<i>(S) Toluene-d8</i>				117	117	80.0-120				
<i>(S) 4-Bromofluorobenzene</i>				91.3	92.0	77.0-126				
<i>(S) 1,2-Dichloroethane-d4</i>				92.7	92.8	70.0-130				

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3715555-2 10/07/21 10:31

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Benzene	U		0.0941	1.00
Ethylbenzene	U		0.137	1.00
Methyl tert-butyl ether	U		0.101	1.00
Toluene	U		0.278	1.00
Xylenes, Total	U		0.174	3.00
<i>(S) Toluene-d8</i>	111			80.0-120
<i>(S) 4-Bromofluorobenzene</i>	96.6			77.0-126
<i>(S) 1,2-Dichloroethane-d4</i>	95.9			70.0-130

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

Laboratory Control Sample (LCS)

(LCS) R3715555-1 10/07/21 08:46

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Benzene	5.00	5.12	102	70.0-123	
Ethylbenzene	5.00	5.94	119	79.0-123	
Methyl tert-butyl ether	5.00	4.62	92.4	68.0-125	
Toluene	5.00	5.71	114	79.0-120	
Xylenes, Total	15.0	16.8	112	79.0-123	
<i>(S) Toluene-d8</i>			118	80.0-120	
<i>(S) 4-Bromofluorobenzene</i>			90.7	77.0-126	
<i>(S) 1,2-Dichloroethane-d4</i>			93.8	70.0-130	

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3714878-1 10/11/21 09:30

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Diesel Range Organics (DRO)	U		66.7	200
Residual Range Organics (RRO)	U		83.3	250
<i>(S) o-Terphenyl</i>	81.0			52.0-156

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3714878-2 10/11/21 09:56 • (LCSD) R3714878-3 10/11/21 10:22

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Diesel Range Organics (DRO)	1500	1370	1260	91.3	84.0	50.0-150			8.37	20
<i>(S) o-Terphenyl</i>				103	98.0	52.0-156				

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Method Blank (MB)

(MB) R3712733-3 10/05/21 08:28

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Benzo(a)anthracene	U		0.0203	0.0500
Benzo(a)pyrene	U		0.0184	0.0500
Benzo(b)fluoranthene	U		0.0168	0.0500
Benzo(k)fluoranthene	U		0.0202	0.0500
Chrysene	U		0.0179	0.0500
Dibenz(a,h)anthracene	U		0.0160	0.0500
Indeno(1,2,3-cd)pyrene	U		0.0158	0.0500
Naphthalene	U		0.0917	0.250
1-Methylnaphthalene	U		0.0687	0.250
2-Methylnaphthalene	U		0.0674	0.250
(S) Nitrobenzene-d5	92.0			31.0-160
(S) 2-Fluorobiphenyl	108			48.0-148
(S) p-Terphenyl-d14	138			37.0-146

Method Blank (MB)

(MB) R3717954-1 10/15/21 20:33

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Benzo(a)anthracene	U		0.0203	0.0500
Benzo(a)pyrene	U		0.0184	0.0500
Benzo(b)fluoranthene	U		0.0168	0.0500
Benzo(k)fluoranthene	U		0.0202	0.0500
Chrysene	U		0.0179	0.0500
Dibenz(a,h)anthracene	U		0.0160	0.0500
Indeno(1,2,3-cd)pyrene	U		0.0158	0.0500
Naphthalene	U		0.0917	0.250
1-Methylnaphthalene	U		0.0687	0.250
2-Methylnaphthalene	U		0.0674	0.250
(S) Nitrobenzene-d5	86.5			31.0-160
(S) 2-Fluorobiphenyl	109			48.0-148
(S) p-Terphenyl-d14	133			37.0-146

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3712733-1 10/05/21 07:48 • (LCSD) R3712733-2 10/05/21 08:08

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	<u>LCS Qualifier</u>	<u>LCSD Qualifier</u>	RPD %	RPD Limits %
Benzo(a)anthracene	2.00	1.84	1.81	92.0	90.5	61.0-140			1.64	20
Benzo(a)pyrene	2.00	1.83	1.78	91.5	89.0	60.0-143			2.77	20
Benzo(b)fluoranthene	2.00	1.86	1.81	93.0	90.5	58.0-141			2.72	20
Benzo(k)fluoranthene	2.00	1.74	1.68	87.0	84.0	58.0-148			3.51	20
Chrysene	2.00	1.96	1.91	98.0	95.5	64.0-144			2.58	20
Dibenz(a,h)anthracene	2.00	1.53	1.43	76.5	71.5	52.0-155			6.76	20
Indeno(1,2,3-cd)pyrene	2.00	1.65	1.56	82.5	78.0	54.0-153			5.61	20
Naphthalene	2.00	1.93	1.91	96.5	95.5	61.0-137			1.04	20
1-Methylnaphthalene	2.00	2.00	1.97	100	98.5	66.0-142			1.51	20
2-Methylnaphthalene	2.00	1.91	1.88	95.5	94.0	62.0-136			1.58	20
<i>(S) Nitrobenzene-d5</i>				94.0	90.5	31.0-160				
<i>(S) 2-Fluorobiphenyl</i>				106	106	48.0-148				
<i>(S) p-Terphenyl-d14</i>				126	121	37.0-146				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

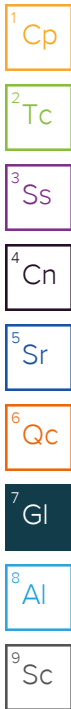
The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
B	The same analyte is found in the associated blank.
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits.
J2	Surrogate recovery limits have been exceeded; values are outside lower control limits.
J7	Surrogate recovery cannot be used for control limit evaluation due to dilution.



ACCREDITATIONS & LOCATIONS

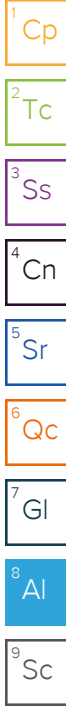
Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico ¹	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	KY90010	South Carolina	84004002
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas ⁵	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

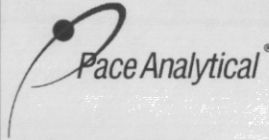
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.



Company Name/Address:
Arcadis - Chevron - WA
 1100 Olive Way
 Suite 800
 Seattle, WA 98101

Billing Information:
 Attn: Accounts Payable
 630 Plaza Dr., Ste. 600
 Highlands Ranch, CO 80129

Analysis / Container / Preservative
 Pres Chk

Chain of Custody Page 2 of 3


Report to:
Ada Hamilton/Alex Laws

Email To:
 alexander.laws@arcadis.com;Ada.Hamilton@ar

Project Description:
 97502

City/State Collected:
 SEDRO WOLEY, WA

Please Circle:
 PT MT CT ET

Phone: 206-325-5254

Client Project #
 30064310 07.21-Plan

Lab Project #
 CHEVARCWA-97502

Collected by (print): **B. PAULEY**
J. SEPIC / M. ANDREWS

Site/Facility ID #
 640 METCALF ST SEDRO-

P.O. #

Collected by (signature):
J. SEPIC / M. ANDREWS
B. PAULEY
 Immediately
 Packed on Ice N Y

Rush? (Lab MUST Be Notified)
 Same Day Five Day
 Next Day 5 Day (Rad Only)
 Two Day 10 Day (Rad Only)
 Three Day

Quote #
 Date Results Needed
 No. of Cntrs

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	BTEXM 8260D 40mlAmb-HCl	Diss Pb 6010 250mlHDPE-NoPres	NWTPHDX LVINOSGT 40mlAmb-HCl-BT	NWTPHGX 40mlAmb HCl	PAHs 8270ESIM 40mlAmb-NoPres-WT
RS-1-092821	G	GW	—	09/28/21	1645	9	X	X	X	X	
MW-17-20210928	G	GW	—	09/28/21	1131	9	X	X	X	X	
MW-14-20210928	G	GW	—	09/28/21	1606	9	X	X	X	X	
MW-4-20210928	G	GW	—	09/28/21	1300	9	X	X	X	X	
MW-8-20210928	G	GW	—	09/28/21	1600	9	X	X	X	X	
MW-18-20210928	G	GW	—	09/28/21	1021	9	X	X	X	X	
MW-7-20210928	G	GW	—	09/28/21	1415	11	X	X	X	X	
MW-21-20210928	G	GW	—	09/28/21	11035	9	X	X	X	X	
DUP-1-092821	G	GW	—	09/28/21	—	9	X	X	X	X	
MW-13-20210928	G	GW	—	09/28/21	1252	9	X	X	X	X	

12065 Lebanon Rd Mount Juliet, TN 37122
 Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at:
<https://info.pacelabs.com/hubfs/pas-standard-terms.pdf>

SDG # **L1411457**
 Table **1225**
 Acctnum: **CHEVARCWA**
 Template: **T194616**
 Prelogin: **P871798**
 PM: **110 - Brian Ford**
 PB: **RS 9/19/21**

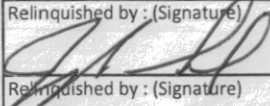
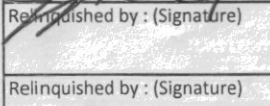
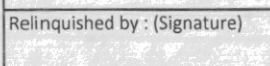
Shipped Via:

Remarks	Sample # (lab only)
	-61
	02
	03
	04
	05
	06
	07
	08
	09
	10

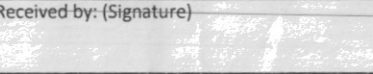

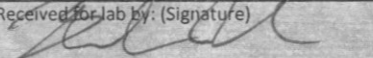
* Matrix:
 SS - Soil AIR - Air F - Filter
 GW - Groundwater B - Bioassay
 WW - WasteWater
 DW - Drinking Water
 OT - Other

Remarks:
 pH _____ Temp _____
 Flow _____ Other _____
 Samples returned via:
 UPS FedEx Courier _____
 Tracking # **5217 333 6680**

Sample Receipt Checklist
 COC Seal Present/Intact: NP Y N
 COC Signed/Accurate: Y N
 Bottles arrive intact: Y N
 Correct bottles used: Y N
 Sufficient volume sent: Y N
 If Applicable
 VOA Zero HeadSpace: Y N
 Preservation Correct/Checked: Y N
 RAD Screen <0.5 mR/hr: Y N

Relinquished by: (Signature)

 Relinquished by: (Signature)

 Relinquished by: (Signature)


Date: **09/29/21**
 Time: **1400**

Received by: (Signature)

 Received by: (Signature)

 Received for Lab by: (Signature)


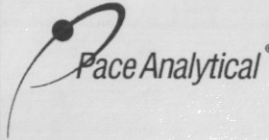
Trip Blank Received: Yes No
 MeOH
 TBR
 Temp: **21.0** °C
 Bottles Received: **101**

If preservation required by Login: Date/Time
 Hold:
 Condition:
 NCF OK

Company Name/Address:
Arcadis - Chevron - WA
 1100 Olive Way
 Suite 800
 Seattle, WA 98101

Billing Information:
 Attn: Accounts Payable
 630 Plaza Dr., Ste. 600
 Highlands Ranch, CO 80129

Analysis / Container / Preservative

Chain of Custody Page **3** of **3**

 12065 Lebanon Rd Mount Juliet, TN 37122
 Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: <https://info.pacelabs.com/hubfs/pas-standard-terms.pdf>

Report to:
Ada Hamilton/Alex Laws

Email To:
 alexander.laws@arcadis.com;Ada.Hamilton@ar

Project Description:
97502

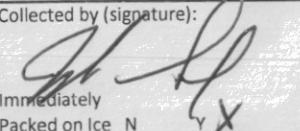
City/State Collected:
SEDRO-WOOLEY, WA

Please Circle:
 PT MT CT ET

Client Project #
30064310 07.21-Plan

Lab Project #
CHEVARCWA-97502

P.O. #

Collected by (signature):

 Immediately Packed on Ice N Y X

Site/Facility ID #
640 METCALF ST SEDRO-

Quote #
 Date Results Needed

Collected by (print):
J. SEPULVEDA / M. ANDREWS / B. PAULEY

Rush? (Lab MUST Be Notified)
 Same Day Five Day
 Next Day 5 Day (Rad Only)
 Two Day 10 Day (Rad Only)
 Three Day

No. of Cntrs

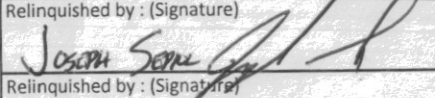
Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	BTEXM 8260D 40mlAmb-HCl	Diss Pb 6010 250mlHDPE-NoPres	NWTPHDX LVINOSGT 40mlAmb-HCl-BT	NWTPHGX 40mlAmb HCl	PAHs 8270ESIM 40mlAmb-NoPres-WT
MW-5-20210928	G	GW	—	09/28/21	1155	9	X	X	X	X	
TRIP BLANK	—	GW	—	—	—	4					
		GW									
		GW									
		GW									
		GW									

SDG # **L1411457**
 Table #
 Acctnum: **CHEVARCWA**
 Template: **T194616**
 Prelogin: **P871798**
 PM: **110 - Brian Ford**
 PB: **NS 9/9/21**
 Shipped Via:
 Remarks | Sample # (lab only)

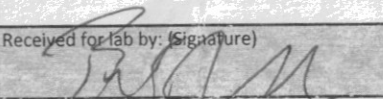
* Matrix:
 SS - Soil AIR - Air F - Filter
 GW - Groundwater B - Bioassay
 WW - WasteWater
 DW - Drinking Water
 OT - Other

Remarks:
 pH _____ Temp _____
 Flow _____ Other _____
 Samples returned via:
 UPS FedEx Courier
 Tracking # **5217 3313 6680**

Sample Receipt Checklist
 COC Seal Present/Intact: NP N
 COC Signed/Accurate: N
 Bottles arrive intact: N
 Correct bottles used: N
 Sufficient volume sent: N
 If Applicable
 VOA Zero Headspace: N
 Preservation Correct/Checked: N
 RAD Screen <0.5 mR/hr: N

Relinquished by: (Signature)

 Relinquished by: (Signature)
 Relinquished by: (Signature)

Date:
09/29/21
 Date:
 Date:
 Date:

Time:
1400
 Time:
 Time:
 Time:
 Received for lab by: (Signature)


Received by: (Signature)
 Trip Blank Received: Yes/ No
 Yes No
 Temp: **21.21** °C
 Bottles Received: **191**
 Date: **9/29/21** Time: **0900**

If preservation required by Login: Date/Time
 Hold:
 Condition:
 NCF / OK

Chevron - WA

DATA REVIEW

SEDRO-WOOLLEY, WA

Volatile organic compounds, Total Petroleum Hydrocarbons, and Metal Analyses

SDG# L1412143

Analyses Performed By:
Pace Analytical National
Mount Juliet, TN 37122

Report #44129R
Review Level: Tier II
Project: 30064310.08.82



DATA REVIEW REPORT

SUMMARY

This data quality assessment summarizes the review of Sample Delivery Groups (SDGs) # L1412143 for samples collected in association with the Chevron SEDRO-WOOLLEY, WA Site. The review was conducted as a Tier II evaluation and included review of data package completeness. Only analytical data associated with constituents of concern were reviewed for this validation. Field documentation was not included in this review. Included with this assessment are the validation annotated sample result sheets and chain of custody. Analyses were performed on the following samples:

Sample ID	Lab ID	Matrix	Sample Collection Date	Parent Sample	Analysis		
					VOC	TPH	MET
MW-10-20210929	L1412143-01	Water	09/29/2021		X	X	X
MW-6-20210927	L1412143-02	Water	09/27/2021		X	X	X
DUP-2-092921	L1412143-03	Water	09/29/2021	MW-11-20210929	X	X	X
MW-15-20210927	L1412143-04	Water	09/27/2021		X	X	X
MW-16-20210927	L1412143-05	Water	09/27/2021		X	X	X
MW-11-20210929	L1412143-06	Water	09/29/2021		X	X	X
RS-1-092721	L1412143-07	Water	09/27/2021		X	X	X
RS-1-092921	L1412143-08	Water	09/29/2021		X	X	X
MW-12-20210928	L1412143-09	Water	09/28/2021		X	X	X

Notes:

VOC = volatile organic compounds.

TPH = total petroleum hydrocarbons.

MET = metals.

DATA REVIEW REPORT

ANALYTICAL DATA PACKAGE DOCUMENTATION

The table below is the evaluation of the data package completeness.

Items Reviewed	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
1. Sample receipt condition		X		X	
2. Requested analyses and sample results		X		X	
3. Master tracking list		X		X	
4. Methods of analysis		X		X	
5. Reporting limits		X		X	
6. Sample collection date		X		X	
7. Laboratory sample received date		X		X	
8. Sample preservation verification (as applicable)		X		X	
9. Sample preparation/extraction/analysis dates		X		X	
10. Fully executed Chain-of-Custody (COC) form		X		X	
11. Narrative summary of QA or sample problems provided		X		X	
12. Data Package Completeness and Compliance		X		X	

Note:

QA - Quality Assurance

DATA REVIEW REPORT

ORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) SW-846 Methods 8260D, NWTPHDX and NWTPHGX. Validation was performed following the USEPA National Functional Guidelines NFG for Organic Superfund Methods Data Review, EPA-540-R-20-005 (November 2020), with reference to the historical (USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review, OSWER 9240.1-05A-P, October 1999, as appropriate).

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and had already been subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with USEPA National Functional Guidelines:

- Concentration (C) Qualifiers
 - U The compound was analyzed for but not detected. The associated value is the compound quantitation limit.
 - B The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.
- Quantitation (Q) Qualifiers
 - E The compound was quantitated above the calibration range.
 - D Concentration is based on a diluted sample analysis.
- Validation Qualifiers
 - J The compound was positively identified; however, the associated numerical value is an estimated concentration only.
 - UJ The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.
 - JN The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification. The associated numerical value is an estimated concentration only.
 - UB Compound considered non-detect at the listed value due to associated blank contamination.
 - N The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.
 - R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is

DATA REVIEW REPORT

that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

DATA REVIEW REPORT

VOLATILE ORGANIC COMPOUND (VOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8260D	Water	14 days from collection to analysis (preserved)	Cool to <6 °C; preserved to a pH of less than 2 s.u.

Note:

s.u. Standard units

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the sample detection limit (SDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the SDL in the associated blanks; therefore, detected sample results were not associated with blank contamination.

3. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. VOC analysis requires that all surrogates associated with the analysis exhibit recoveries within the laboratory-established acceptance limits.

All surrogate recoveries were within the control limits.

4. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analyses

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

MS/MSD analysis was not performed on sample within this SDG.

5. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS/LCSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

DATA REVIEW REPORT

All compounds associated with the LCS/LCSD analysis exhibited recoveries within the control limits.

6. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

Results for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compounds	Sample Result ug/l	Duplicate Result ug/l	RPD
MW-11-20210929 / DUP-2-092921	Benzene	3.03	0.230 J	AC
	Toluene	1.78	9.78	NC
	Ethylbenzene	67.9	19.4	111%
	Total Xylenes	4.36	85.6	NC

Notes:

NC Not compliant

The compounds toluene, ethylbenzene, and total xylenes associated with sample IDs MW-11-20210929 / DUP-2-092921 exhibited a field duplicate RPDs and results greater than the control limit. The associated sample results from sample IDs for the listed compound were qualified as estimated.

7. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA REVIEW REPORT

DATA VALIDATION CHECKLIST FOR VOCs

VOCs: SW-846 8260D	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks	X				X
C. Trip blanks	X				X
Laboratory Control Sample (LCS)		X		X	
Laboratory Control Sample Duplicate (LCSD)		X		X	
LCS/LCSD Precision (RPD)		X		X	
Matrix Spike (MS)	X				X
Matrix Spike Duplicate (MSD)	X				X
MS/MSD Precision (RPD)	X				X
Field/Lab Duplicate (RPD)		X	X		
Surrogate Spike Recoveries		X		X	
Dilution Factor		X		X	

Notes:

%R Percent recovery

RPD Relative percent difference

DATA REVIEW REPORT

TOTAL PETROLEUM HYDROCARBONS ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
GRO by Method NWTPHGX	Water	14 days from collection to analysis	Cool to <6 °C; preserved to a pH of less than 2.
DRO by Method NWTPHDX	Water	14 days from collection to extraction and 40 days from extraction to analysis	Cool to <6 °C; preserved to a pH of less than 2.

All samples were analyzed within the specified holding times.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the sample detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

All compounds associated with the QA blanks exhibited a concentration less than the MDL, with the exception of the compounds listed in the following table. Sample results associated with QA blank contamination that were greater than the BAL resulted in the removal of the laboratory qualifier (B) of data. Sample results less than the BAL associated with the following sample locations were qualified as listed in the following table.

Sample ID	Compound	Sample Result	Qualification
MW-16-20210927	Gasoline Range Organics-NWTPH (MB)	Detected sample results <RL and <BAL	"UB" at the RL

Note:

RL = reporting limit

3. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. The analysis requires surrogate compounds exhibit recoveries within the laboratory-established acceptance limits.

All surrogate recoveries were within control limits.

DATA REVIEW REPORT

4. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analyses

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

MS/MSD analysis was not performed on sample within this SDG.

5. Laboratory Control Sample (LCS)/Laboratory Control Sample Duplicate Analysis (LCSD)

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All compounds associated with the LCS/LCSD analysis exhibited recoveries within the control limits.

6. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

Results for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compounds	Sample Result ug/l	Duplicate Result ug/l	RPD
MW-11-20210929 / DUP-2-092921	Gasoline Range Organics (GRO)	4190	4150	1%
	Diesel Range Organics (DRO)	543	1000	AC

The calculated RPDs between the parent sample and field duplicate were acceptable.

7. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA REVIEW REPORT

DATA VALIDATION CHECKLIST FOR TPH

TPH: NWTPHGX and NWTPHDX	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY (GC/FID)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X	X		
B. Equipment blanks	X				X
Laboratory Control Sample (LCS) %R		X		X	
Laboratory Control Sample Duplicate(LCSD) %R		X		X	
LCS/LCSD Precision (RPD)		X		X	
Matrix Spike (MS) %R	X				X
Matrix Spike Duplicate (MSD) %R	X				X
MS/MSD Precision (RPD)	X				X
Field/Lab Duplicate (RPD)		X		X	
Surrogate Spike Recoveries		X		X	
Dilution Factor		X		X	

Notes:

%R - percent recovery

RPD - relative percent difference

DATA REVIEW REPORT

INORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) SW-846 Methods 6010D. Data were reviewed in accordance USEPA National Functional Guidelines NFG for Inorganic Superfund Methods Data Review, EPA-540-R-20-006 (November 2020), with reference to the historical (USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, OSWER 9240.1-05A-P, October 2004, as appropriate).

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and that it was already subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with the USEPA National Functional Guidelines:

- Concentration (C) Qualifiers
 - U The analyte was analyzed for but not detected. The associated value is the analyte instrument detection limit.
 - J The reported value was obtained from a reading less than the reporting limit (RL), but greater than or equal to the method detection limit (MDL).
- Quantitation (Q) Qualifiers
 - E The reported value is estimated due to the presence of interference.
 - N Spiked sample recovery is not within control limits.
 - * Duplicate analysis is not within control limits.
- Validation Qualifiers
 - J The analyte was positively identified; however, the associated numerical value is an estimated concentration only.
 - UJ The analyte was not detected above the reporting limit. However, the reported limit is approximate and may or may not represent the actual limit of detection.
 - UB Analyte considered non-detect at the listed value due to associated blank contamination.
 - R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

DATA REVIEW REPORT

METALS ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 6010D	Water	180 days from collection to analysis	Preserved to a pH of less than 2.

All samples were analyzed within the specified holding times.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank is calculated for QA blanks containing concentrations greater than the sample detection limit (SDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

All analytes were not detected above the SDL in the associated blanks; therefore, detected sample results were not associated with blank contamination.

3. Matrix Spike/Matrix Spike Duplicate (MS/MSD)/Laboratory Duplicate Analysis

MS/MSD and laboratory duplicate data are used to assess the precision and accuracy of the analytical method.

3.1 MS/MSD Analysis

All metal analytes must exhibit a percent recovery within the established acceptance limits of 75% to 125%. The MS/MSD recovery control limits do not apply for MS performed on sample locations where the analyte's concentration detected in the parent sample exceeds the MS concentration by a factor of four or greater. In instance where this is true, the data will not be qualified even if the percent recovery does not meet the control limits and the laboratory flag will be removed.

MS/MSD analysis was not performed on sample within this SDG.

3.2 Laboratory Duplicate Analysis

The laboratory duplicates relative percent difference (RPD) criterion is applied when parent and duplicate sample concentrations are greater than or equal to 5 times the RL. A control limit of 20% for water matrices is applied when the criteria above is true. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of one times the RL is applied for water matrices.

Laboratory duplicate analysis was not performed on any of the samples from this SDG.

4. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

DATA REVIEW REPORT

Results for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Analyte	Sample Result (ug/l)	Duplicate Result (ug/l)	RPD
MW-11-20210929 / DUP-2-092921	Lead, Dissolved	U	U	AC

Notes:

AC - Acceptable

The calculated RPDs between the parent sample and field duplicate were acceptable.

5. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the accuracy of the analytical method independent of matrix interferences. The analytes associated with the LCS analysis must exhibit a percent recovery between the control limits of 80% and 120%.

The LCS analysis exhibited recoveries within the control limits.

6. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA REVIEW REPORT

DATA VALIDATION CHECKLIST FOR METAL

METALS; SW-846 6010D	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Inductively Coupled Plasma-Mass Spectrometry (ICP-MS)					
Tier II Validation					
Holding Times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Instrument Blanks	X				X
B. Method Blanks		X		X	
C. Equipment/Field Blanks	X				X
Laboratory Control Sample (LCS)		X		X	
Laboratory Control Sample Duplicate (LCSD) %R	X				X
LCS/LCSD Precision (RPD)	X				X
Matrix Spike (MS) %R	X				X
Matrix Spike Duplicate (MSD) %R	X				X
MS/MSD Precision (RPD)	X				X
Lab Duplicate (RPD)	X				X
Field Duplicate (RPD)		X		X	
ICP Serial Dilution %D	X				X
Reporting Limit Verification		X		X	

Notes:


%R Percent recovery

RPD Relative percent difference

%D Percent difference

DATA REVIEW REPORT

VALIDATION PERFORMED BY: Bhagyashree Fulzele

SIGNATURE: 

DATE: January 12,2022

PEER REVIEW: Dennis Capria

DATE: January 17,2022

**CHAIN OF CUSTODY
CORRECTED SAMPLE ANALYSIS DATA
SHEETS**



Company Name/Address:
Arcadis - Chevron - WA
 1100 Olive Way
 Suite 800
 Seattle, WA 98101

Billing Information:
 Attn: Accounts Payable
 630 Plaza Dr., Ste. 600
 Highlands Ranch, CO 80129

Analysis / Container / Preservative



12065 Lebanon Rd Mount Juliet, TN 37122
 Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: <https://info.pacelabs.com/hubs/pas-standard-terms.pdf>

Report to:
Ada Hamilton/Alex Laws

Email To:
 alexander.laws@arcadis.com; Ada.Hamilton@ar

Project Description:
 97502

City/State Collected:
 SEDRO-WOLLEY, WA

Please Circle:
 PT MT CT ET

Phone: 206-325-5254

Client Project #
 30064310 07.21-Plan

Lab Project #
 CHEVARCWA-97502

Collected by (print):
 J. SEPIOL / M. ANDREWS
 B. PAULSON

Site/Facility ID #
 640 METCALF ST SEDRO-

P.O. #

Collected by (signature):
 [Signature]

Rush? (Lab MUST Be Notified)
 Same Day Five Day
 Next Day 5 Day (Rad Only)
 Two Day 10 Day (Rad Only)
 Three Day

Quote #
 Date Results Needed

Immediately Packed on Ice N Y X

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	BTEXM 8260D 40mlAmb-HCl	Diss Pb 6010 250mlHDPE-NoPres	NWTPHDX LVINOSGT 40mlAmb-HCl-BT	NWTPHGX 40mlAmb HCl	PAHs 8270ESIM 40mlAmb-NoPres-WT
MW-10-20210929	G	GW	—	09/29/21	1030	9	X	X	X	X	
MW-6-20210927	G	GW	—	09/27/21	1400	9	X	X	X	X	
DUP-2-092921	G	GW	—	09/29/21	—	9	X	X	X	X	
MW-15-20210927	G	GW	—	09/27/21	1615	9	X	X	X	X	
MW-16-20210927	G	GW	—	09/27/21	1515	9	X	X	X	X	
MW-11-20210929	G	GW	—	09/29/21	1042	9	X	X	X	X	
RS-1-092921	G	GW	—	09/29/21	1700	9	X	X	X	X	
RS-1-092921	G	GW	—	09/29/21	1100	9	X	X	X	X	
MW-12-20210928	G	GW	—	09/28/21	1415	9	X	X	X	X	
TRIP BLANK	—	GW	—	—	—	4					

SDG # 1412143

Tab **E050**

Acctnum: CHEVARCWA
 Template: T194616
 Prelogin: P871798
 PM: 110 - Brian Ford
 PB: NS 9/9/21

Shipped Via:
 Remarks Sample # (lab only)

* Matrix:
 SS - Soil AIR - Air F - Filter
 GW - Groundwater B - Bioassay
 WW - WasteWater
 DW - Drinking Water
 OT - Other

Remarks:
 pH _____ Temp _____
 Flow _____ Other _____
 Samples returned via:
 UPS FedEx Courier
 Tracking #

Sample Receipt Checklist
 COC Seal Present/Intact: N N
 COC Signed/Accurate: N N
 Bottles arrive intact: N N
 Correct bottles used: N N
 Sufficient volume sent: Y N
 If Applicable
 VOA Zero Headspace: Y N
 Preservation Correct/Checked: Y N
 RAD Screen <0.5 mR/hr: Y N

Relinquished by: (Signature)
 [Signature]

Date: 09/29/21
 Time: 1400

Received by: (Signature)
 [Signature]

Trip Blank Received: Yes/No
 Yes No
 HCl / MeOH
 TBR

Relinquished by: (Signature)

Date: 10-1-21
 Time: 9:00

Received by: (Signature)
 [Signature]

Temp: 21.40°C
 Bottles Received: 31

If preservation required by Login: Date/Time

Relinquished by: (Signature)

Date: 10-1-21
 Time: 9:00

Received for lab by: (Signature)
 [Signature]

Date: 10-1-21
 Time: 9:00

Hold: Condition: NCF / OK

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lead,Dissolved	U		2.99	6.00	1	10/11/2021 16:37	WG1753604

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	4150		31.6	100	1	10/09/2021 07:29	WG1753838
(S) a,a,a-Trifluorotoluene(FID)	97.1			78.0-120		10/09/2021 07:29	WG1753838

- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	0.230	J	0.0941	1.00	1	10/09/2021 20:55	WG1754155
Toluene	9.90		0.278	1.00	1	10/09/2021 20:55	WG1754155
Ethylbenzene	19.7		0.137	1.00	1	10/09/2021 20:55	WG1754155
Total Xylenes	87.0		0.174	3.00	1	10/09/2021 20:55	WG1754155
Methyl tert-butyl ether	U		0.101	1.00	1	10/09/2021 20:55	WG1754155
(S) Toluene-d8	106			80.0-120		10/09/2021 20:55	WG1754155
(S) 4-Bromofluorobenzene	108			77.0-126		10/09/2021 20:55	WG1754155
(S) 1,2-Dichloroethane-d4	120			70.0-130		10/09/2021 20:55	WG1754155

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	986		66.7	200	1	10/12/2021 04:13	WG1754625
Residual Range Organics (RRO)	U		83.3	250	1	10/12/2021 04:13	WG1754625
(S) o-Terphenyl	113			52.0-156		10/12/2021 04:13	WG1754625

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lead,Dissolved	U		2.99	6.00	1	10/11/2021 16:40	WG1753604

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	10/08/2021 00:08	WG1753156
(S) a,a,a-Trifluorotoluene(FID)	95.5			78.0-120		10/08/2021 00:08	WG1753156

- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	10/09/2021 21:17	WG1754155
Toluene	U		0.278	1.00	1	10/09/2021 21:17	WG1754155
Ethylbenzene	U		0.137	1.00	1	10/09/2021 21:17	WG1754155
Total Xylenes	U		0.174	3.00	1	10/09/2021 21:17	WG1754155
Methyl tert-butyl ether	U		0.101	1.00	1	10/09/2021 21:17	WG1754155
(S) Toluene-d8	107			80.0-120		10/09/2021 21:17	WG1754155
(S) 4-Bromofluorobenzene	97.6			77.0-126		10/09/2021 21:17	WG1754155
(S) 1,2-Dichloroethane-d4	114			70.0-130		10/09/2021 21:17	WG1754155

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	U		66.7	200	1	10/12/2021 01:25	WG1754008
Residual Range Organics (RRO)	U		83.3	250	1	10/12/2021 01:25	WG1754008
(S) o-Terphenyl	101			52.0-156		10/12/2021 01:25	WG1754008

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lead,Dissolved	U		2.99	6.00	1	10/11/2021 16:43	WG1753604

1 Cp

2 Tc

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	4150		31.6	100	1	10/09/2021 07:52	WG1753838
(S) a,a,a-Trifluorotoluene(FID)	96.7			78.0-120		10/09/2021 07:52	WG1753838

3 Ss

4 Cn

5 Sr

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	0.230	J	0.0941	1.00	1	10/09/2021 21:39	WG1754155
Toluene	9.78		0.278	1.00	1	10/09/2021 21:39	WG1754155
Ethylbenzene	19.4	J	0.137	1.00	1	10/09/2021 21:39	WG1754155
Total Xylenes	85.6		0.174	3.00	1	10/09/2021 21:39	WG1754155
Methyl tert-butyl ether	U		0.101	1.00	1	10/09/2021 21:39	WG1754155
(S) Toluene-d8	108			80.0-120		10/09/2021 21:39	WG1754155
(S) 4-Bromofluorobenzene	110			77.0-126		10/09/2021 21:39	WG1754155
(S) 1,2-Dichloroethane-d4	116			70.0-130		10/09/2021 21:39	WG1754155

6 Qc

7 Gl

8 Al

9 Sc

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	1000		66.7	200	1	10/12/2021 04:40	WG1754625
Residual Range Organics (RRO)	U		83.3	250	1	10/12/2021 04:40	WG1754625
(S) o-Terphenyl	114			52.0-156		10/12/2021 04:40	WG1754625

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lead,Dissolved	U		2.99	6.00	1	10/11/2021 16:46	WG1753604

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	219	B	31.6	100	1	10/08/2021 00:30	WG1753156
(S) a,a,a-Trifluorotoluene(FID)	95.4			78.0-120		10/08/2021 00:30	WG1753156

- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	10/09/2021 22:00	WG1754155
Toluene	U		0.278	1.00	1	10/09/2021 22:00	WG1754155
Ethylbenzene	U		0.137	1.00	1	10/09/2021 22:00	WG1754155
Total Xylenes	U		0.174	3.00	1	10/09/2021 22:00	WG1754155
Methyl tert-butyl ether	U		0.101	1.00	1	10/09/2021 22:00	WG1754155
(S) Toluene-d8	110			80.0-120		10/09/2021 22:00	WG1754155
(S) 4-Bromofluorobenzene	105			77.0-126		10/09/2021 22:00	WG1754155
(S) 1,2-Dichloroethane-d4	114			70.0-130		10/09/2021 22:00	WG1754155

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	396		66.7	200	1	10/12/2021 04:27	WG1754008
Residual Range Organics (RRO)	U		83.3	250	1	10/12/2021 04:27	WG1754008
(S) o-Terphenyl	106			52.0-156		10/12/2021 04:27	WG1754008

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lead,Dissolved	U		2.99	6.00	1	10/11/2021 16:49	WG1753604

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	54.7	<u>B</u>	31.6	100 UB	1	10/08/2021 00:52	WG1753156
(S) a,a,a-Trifluorotoluene(FID)	96.1			78.0-120		10/08/2021 00:52	WG1753156

- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	10/09/2021 22:22	WG1754155
Toluene	U		0.278	1.00	1	10/09/2021 22:22	WG1754155
Ethylbenzene	U		0.137	1.00	1	10/09/2021 22:22	WG1754155
Total Xylenes	U		0.174	3.00	1	10/09/2021 22:22	WG1754155
Methyl tert-butyl ether	U		0.101	1.00	1	10/09/2021 22:22	WG1754155
(S) Toluene-d8	108			80.0-120		10/09/2021 22:22	WG1754155
(S) 4-Bromofluorobenzene	97.6			77.0-126		10/09/2021 22:22	WG1754155
(S) 1,2-Dichloroethane-d4	115			70.0-130		10/09/2021 22:22	WG1754155

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	72.0	<u>J</u>	66.7	200	1	10/12/2021 04:53	WG1754008
Residual Range Organics (RRO)	U		83.3	250	1	10/12/2021 04:53	WG1754008
(S) o-Terphenyl	105			52.0-156		10/12/2021 04:53	WG1754008

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lead,Dissolved	U		2.99	6.00	1	10/11/2021 16:52	WG1753604

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	4190		31.6	100	1	10/09/2021 08:15	WG1753838
(S) a,a,a-Trifluorotoluene(FID)	86.2			78.0-120		10/09/2021 08:15	WG1753838

- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	3.03		0.0941	1.00	1	10/09/2021 22:44	WG1754155
Toluene	1.78	J	0.278	1.00	1	10/09/2021 22:44	WG1754155
Ethylbenzene	67.9		0.137	1.00	1	10/09/2021 22:44	WG1754155
Total Xylenes	4.36		0.174	3.00	1	10/09/2021 22:44	WG1754155
Methyl tert-butyl ether	U		0.101	1.00	1	10/09/2021 22:44	WG1754155
(S) Toluene-d8	111			80.0-120		10/09/2021 22:44	WG1754155
(S) 4-Bromofluorobenzene	101			77.0-126		10/09/2021 22:44	WG1754155
(S) 1,2-Dichloroethane-d4	110			70.0-130		10/09/2021 22:44	WG1754155

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	543		66.7	200	1	10/12/2021 05:05	WG1754625
Residual Range Organics (RRO)	U		83.3	250	1	10/12/2021 05:05	WG1754625
(S) o-Terphenyl	111			52.0-156		10/12/2021 05:05	WG1754625

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lead,Dissolved	4.17	J	2.99	6.00	1	10/11/2021 16:55	WG1753604

1 Cp

2 Tc

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	10/08/2021 01:14	WG1753156
(S) a,a,a-Trifluorotoluene(FID)	95.8			78.0-120		10/08/2021 01:14	WG1753156

3 Ss

4 Cn

5 Sr

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	10/09/2021 23:06	WG1754155
Toluene	U		0.278	1.00	1	10/09/2021 23:06	WG1754155
Ethylbenzene	U		0.137	1.00	1	10/09/2021 23:06	WG1754155
Total Xylenes	U		0.174	3.00	1	10/09/2021 23:06	WG1754155
Methyl tert-butyl ether	U		0.101	1.00	1	10/09/2021 23:06	WG1754155
(S) Toluene-d8	107			80.0-120		10/09/2021 23:06	WG1754155
(S) 4-Bromofluorobenzene	96.6			77.0-126		10/09/2021 23:06	WG1754155
(S) 1,2-Dichloroethane-d4	115			70.0-130		10/09/2021 23:06	WG1754155

6 Qc

7 Gl

8 Al

9 Sc

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	282		66.7	200	1	10/12/2021 05:19	WG1754008
Residual Range Organics (RRO)	196	J	83.3	250	1	10/12/2021 05:19	WG1754008
(S) o-Terphenyl	111			52.0-156		10/12/2021 05:19	WG1754008

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lead,Dissolved	U		2.99	6.00	1	10/11/2021 16:57	WG1753604

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	37.3	J	31.6	100	1	10/09/2021 08:38	WG1753838
(S) a,a,a-Trifluorotoluene(FID)	102			78.0-120		10/09/2021 08:38	WG1753838

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	10/09/2021 23:28	WG1754155
Toluene	U		0.278	1.00	1	10/09/2021 23:28	WG1754155
Ethylbenzene	U		0.137	1.00	1	10/09/2021 23:28	WG1754155
Total Xylenes	U		0.174	3.00	1	10/09/2021 23:28	WG1754155
Methyl tert-butyl ether	U		0.101	1.00	1	10/09/2021 23:28	WG1754155
(S) Toluene-d8	108			80.0-120		10/09/2021 23:28	WG1754155
(S) 4-Bromofluorobenzene	96.9			77.0-126		10/09/2021 23:28	WG1754155
(S) 1,2-Dichloroethane-d4	116			70.0-130		10/09/2021 23:28	WG1754155

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	U		66.7	200	1	10/12/2021 05:32	WG1754625
Residual Range Organics (RRO)	U		83.3	250	1	10/12/2021 05:32	WG1754625
(S) o-Terphenyl	108			52.0-156		10/12/2021 05:32	WG1754625

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lead,Dissolved	U		2.99	6.00	1	10/11/2021 17:00	WG1753604

1 Cp

2 Tc

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	143		31.6	100	1	10/09/2021 09:02	WG1753838
(S) a,a,a-Trifluorotoluene(FID)	105			78.0-120		10/09/2021 09:02	WG1753838

3 Ss

4 Cn

5 Sr

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	10/10/2021 07:27	WG1754154
Toluene	U		0.278	1.00	1	10/10/2021 07:27	WG1754154
Ethylbenzene	U		0.137	1.00	1	10/10/2021 07:27	WG1754154
Total Xylenes	U		0.174	3.00	1	10/10/2021 07:27	WG1754154
Methyl tert-butyl ether	U		0.101	1.00	1	10/10/2021 07:27	WG1754154
(S) Toluene-d8	102			80.0-120		10/10/2021 07:27	WG1754154
(S) 4-Bromofluorobenzene	88.7			77.0-126		10/10/2021 07:27	WG1754154
(S) 1,2-Dichloroethane-d4	109			70.0-130		10/10/2021 07:27	WG1754154

6 Qc

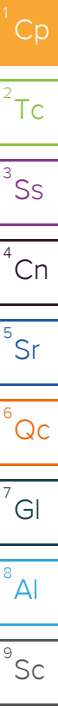
7 Gl

8 Al

9 Sc

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

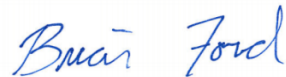
Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	190	J	66.7	200	1	10/09/2021 12:14	WG1753592
Residual Range Organics (RRO)	U		83.3	250	1	10/09/2021 12:14	WG1753592
(S) o-Terphenyl	107			52.0-156		10/09/2021 12:14	WG1753592



Arcadis - Chevron - WA

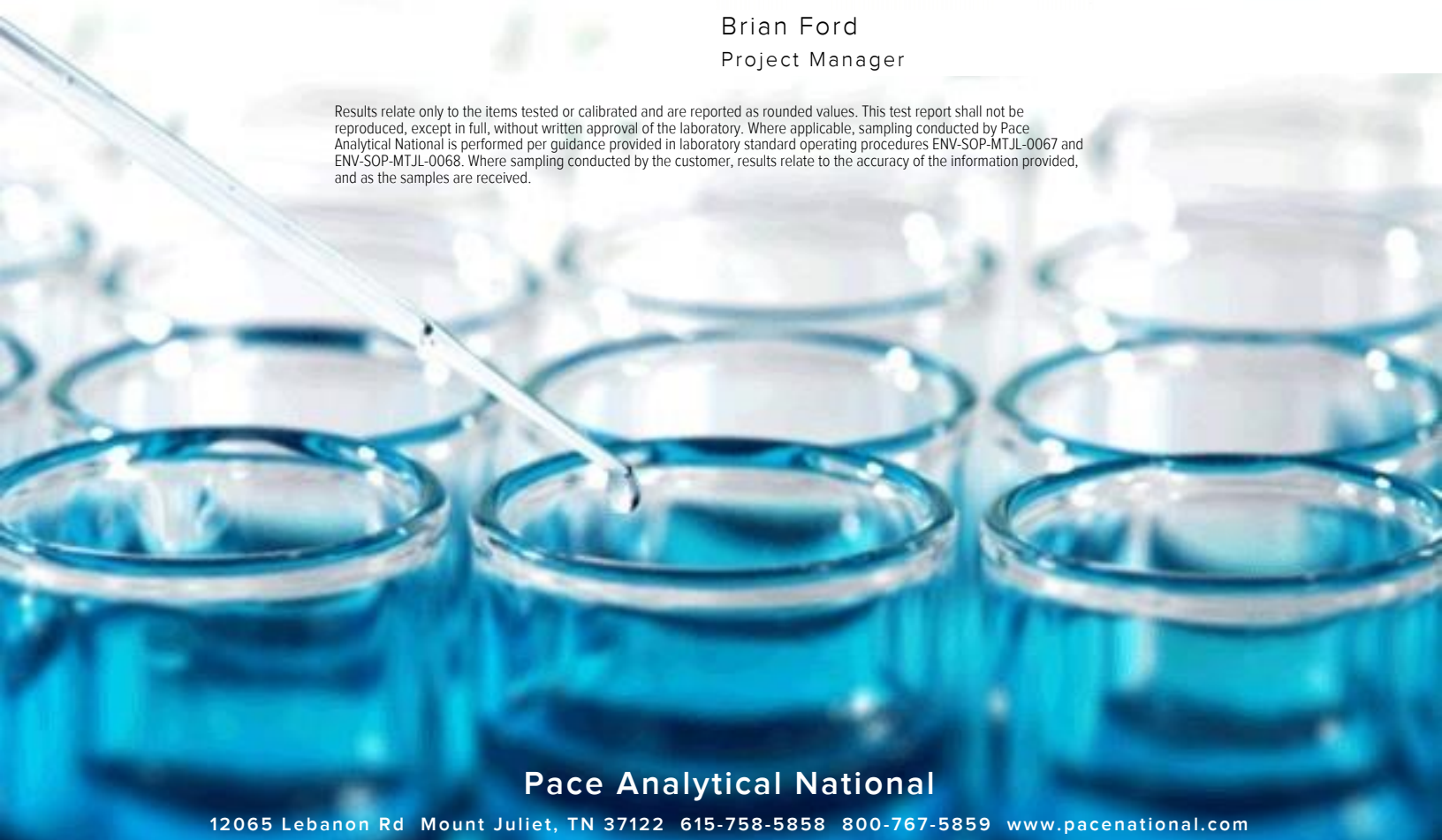
Sample Delivery Group: L1412143
Samples Received: 10/01/2021
Project Number: 30064310 07.21-Plan
Description: 97502
Site: 640 METCALF ST SEDRO-WOOLLEY
Report To: Ada Hamilton/Alex Laws
1100 Olive Way
Suite 800
Seattle, WA 98101

Entire Report Reviewed By:



Brian Ford
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

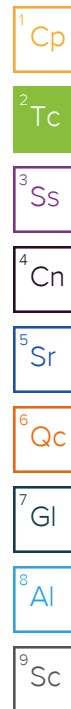


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SAMPLE SUMMARY

MW-10-20210929 L1412143-01 GW

Collected by
JS/MA/BP Collected date/time
09/29/21 10:30 Received date/time
10/01/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG1753604	1	10/08/21 10:27	10/11/21 16:37	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1753838	1	10/09/21 07:29	10/09/21 07:29	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1754155	1	10/09/21 20:55	10/09/21 20:55	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1754625	1	10/11/21 07:47	10/12/21 04:13	DMG	Mt. Juliet, TN

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

MW-6-20210927 L1412143-02 GW

Collected by
JS/MA/BP Collected date/time
09/27/21 14:00 Received date/time
10/01/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG1753604	1	10/08/21 10:27	10/11/21 16:40	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1753156	1	10/08/21 00:08	10/08/21 00:08	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1754155	1	10/09/21 21:17	10/09/21 21:17	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1754008	1	10/11/21 04:08	10/12/21 01:25	DMG	Mt. Juliet, TN

DUP-2-092921 L1412143-03 GW

Collected by
JS/MA/BP Collected date/time
09/29/21 00:00 Received date/time
10/01/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG1753604	1	10/08/21 10:27	10/11/21 16:43	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1753838	1	10/09/21 07:52	10/09/21 07:52	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1754155	1	10/09/21 21:39	10/09/21 21:39	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1754625	1	10/11/21 07:47	10/12/21 04:40	DMG	Mt. Juliet, TN

MW-15-20210927 L1412143-04 GW

Collected by
JS/MA/BP Collected date/time
09/27/21 16:15 Received date/time
10/01/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG1753604	1	10/08/21 10:27	10/11/21 16:46	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1753156	1	10/08/21 00:30	10/08/21 00:30	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1754155	1	10/09/21 22:00	10/09/21 22:00	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1754008	1	10/11/21 04:08	10/12/21 04:27	DMG	Mt. Juliet, TN

MW-16-20210927 L1412143-05 GW

Collected by
JS/MA/BP Collected date/time
09/27/21 15:15 Received date/time
10/01/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG1753604	1	10/08/21 10:27	10/11/21 16:49	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1753156	1	10/08/21 00:52	10/08/21 00:52	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1754155	1	10/09/21 22:22	10/09/21 22:22	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1754008	1	10/11/21 04:08	10/12/21 04:53	DMG	Mt. Juliet, TN

MW-11-20210929 L1412143-06 GW

Collected by
JS/MA/BP Collected date/time
09/29/21 10:42 Received date/time
10/01/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG1753604	1	10/08/21 10:27	10/11/21 16:52	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1753838	1	10/09/21 08:15	10/09/21 08:15	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1754155	1	10/09/21 22:44	10/09/21 22:44	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1754625	1	10/11/21 07:47	10/12/21 05:05	DMG	Mt. Juliet, TN

SAMPLE SUMMARY

RS-1-092721 L1412143-07 GW

Collected by
JS/MA/BP Collected date/time
09/27/21 17:00 Received date/time
10/01/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG1753604	1	10/08/21 10:27	10/11/21 16:55	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1753156	1	10/08/21 01:14	10/08/21 01:14	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1754155	1	10/09/21 23:06	10/09/21 23:06	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1754008	1	10/11/21 04:08	10/12/21 05:19	DMG	Mt. Juliet, TN

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

RS-1-092921 L1412143-08 GW

Collected by
JS/MA/BP Collected date/time
09/29/21 11:00 Received date/time
10/01/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG1753604	1	10/08/21 10:27	10/11/21 16:57	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1753838	1	10/09/21 08:38	10/09/21 08:38	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1754155	1	10/09/21 23:28	10/09/21 23:28	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1754625	1	10/11/21 07:47	10/12/21 05:32	DMG	Mt. Juliet, TN

MW-12-20210928 L1412143-09 GW

Collected by
JS/MA/BP Collected date/time
09/28/21 14:16 Received date/time
10/01/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG1753604	1	10/08/21 10:27	10/11/21 17:00	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1753838	1	10/09/21 09:02	10/09/21 09:02	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1754154	1	10/10/21 07:27	10/10/21 07:27	JCP	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1753592	1	10/08/21 20:00	10/09/21 12:14	DMG	Mt. Juliet, TN

TRIP BLANK-092921 L1412143-10 GW

Collected by
JS/MA/BP Collected date/time
09/29/21 00:00 Received date/time
10/01/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
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CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Brian Ford
Project Manager

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lead,Dissolved	U		2.99	6.00	1	10/11/2021 16:37	WG1753604

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	4150		31.6	100	1	10/09/2021 07:29	WG1753838
(S) a,a,a-Trifluorotoluene(FID)	97.1			78.0-120		10/09/2021 07:29	WG1753838

- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	0.230	J	0.0941	1.00	1	10/09/2021 20:55	WG1754155
Toluene	9.90		0.278	1.00	1	10/09/2021 20:55	WG1754155
Ethylbenzene	19.7		0.137	1.00	1	10/09/2021 20:55	WG1754155
Total Xylenes	87.0		0.174	3.00	1	10/09/2021 20:55	WG1754155
Methyl tert-butyl ether	U		0.101	1.00	1	10/09/2021 20:55	WG1754155
(S) Toluene-d8	106			80.0-120		10/09/2021 20:55	WG1754155
(S) 4-Bromofluorobenzene	108			77.0-126		10/09/2021 20:55	WG1754155
(S) 1,2-Dichloroethane-d4	120			70.0-130		10/09/2021 20:55	WG1754155

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	986		66.7	200	1	10/12/2021 04:13	WG1754625
Residual Range Organics (RRO)	U		83.3	250	1	10/12/2021 04:13	WG1754625
(S) o-Terphenyl	113			52.0-156		10/12/2021 04:13	WG1754625

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lead,Dissolved	U		2.99	6.00	1	10/11/2021 16:40	WG1753604

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	10/08/2021 00:08	WG1753156
(S) a,a,a-Trifluorotoluene(FID)	95.5			78.0-120		10/08/2021 00:08	WG1753156

- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	10/09/2021 21:17	WG1754155
Toluene	U		0.278	1.00	1	10/09/2021 21:17	WG1754155
Ethylbenzene	U		0.137	1.00	1	10/09/2021 21:17	WG1754155
Total Xylenes	U		0.174	3.00	1	10/09/2021 21:17	WG1754155
Methyl tert-butyl ether	U		0.101	1.00	1	10/09/2021 21:17	WG1754155
(S) Toluene-d8	107			80.0-120		10/09/2021 21:17	WG1754155
(S) 4-Bromofluorobenzene	97.6			77.0-126		10/09/2021 21:17	WG1754155
(S) 1,2-Dichloroethane-d4	114			70.0-130		10/09/2021 21:17	WG1754155

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	U		66.7	200	1	10/12/2021 01:25	WG1754008
Residual Range Organics (RRO)	U		83.3	250	1	10/12/2021 01:25	WG1754008
(S) o-Terphenyl	101			52.0-156		10/12/2021 01:25	WG1754008

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lead,Dissolved	U		2.99	6.00	1	10/11/2021 16:43	WG1753604

1 Cp

2 Tc

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	4150		31.6	100	1	10/09/2021 07:52	WG1753838
(S) a,a,a-Trifluorotoluene(FID)	96.7			78.0-120		10/09/2021 07:52	WG1753838

3 Ss

4 Cn

5 Sr

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	0.230	J	0.0941	1.00	1	10/09/2021 21:39	WG1754155
Toluene	9.78		0.278	1.00	1	10/09/2021 21:39	WG1754155
Ethylbenzene	19.4		0.137	1.00	1	10/09/2021 21:39	WG1754155
Total Xylenes	85.6		0.174	3.00	1	10/09/2021 21:39	WG1754155
Methyl tert-butyl ether	U		0.101	1.00	1	10/09/2021 21:39	WG1754155
(S) Toluene-d8	108			80.0-120		10/09/2021 21:39	WG1754155
(S) 4-Bromofluorobenzene	110			77.0-126		10/09/2021 21:39	WG1754155
(S) 1,2-Dichloroethane-d4	116			70.0-130		10/09/2021 21:39	WG1754155

6 Qc

7 Gl

8 Al

9 Sc

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	1000		66.7	200	1	10/12/2021 04:40	WG1754625
Residual Range Organics (RRO)	U		83.3	250	1	10/12/2021 04:40	WG1754625
(S) o-Terphenyl	114			52.0-156		10/12/2021 04:40	WG1754625

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lead,Dissolved	U		2.99	6.00	1	10/11/2021 16:46	WG1753604

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	219	<u>B</u>	31.6	100	1	10/08/2021 00:30	WG1753156
(S) a,a,a-Trifluorotoluene(FID)	95.4			78.0-120		10/08/2021 00:30	WG1753156

- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	10/09/2021 22:00	WG1754155
Toluene	U		0.278	1.00	1	10/09/2021 22:00	WG1754155
Ethylbenzene	U		0.137	1.00	1	10/09/2021 22:00	WG1754155
Total Xylenes	U		0.174	3.00	1	10/09/2021 22:00	WG1754155
Methyl tert-butyl ether	U		0.101	1.00	1	10/09/2021 22:00	WG1754155
(S) Toluene-d8	110			80.0-120		10/09/2021 22:00	WG1754155
(S) 4-Bromofluorobenzene	105			77.0-126		10/09/2021 22:00	WG1754155
(S) 1,2-Dichloroethane-d4	114			70.0-130		10/09/2021 22:00	WG1754155

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	396		66.7	200	1	10/12/2021 04:27	WG1754008
Residual Range Organics (RRO)	U		83.3	250	1	10/12/2021 04:27	WG1754008
(S) o-Terphenyl	106			52.0-156		10/12/2021 04:27	WG1754008

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lead,Dissolved	U		2.99	6.00	1	10/11/2021 16:49	WG1753604

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	54.7	<u>B</u>	31.6	100	1	10/08/2021 00:52	WG1753156
(S) a,a,a-Trifluorotoluene(FID)	96.1			78.0-120		10/08/2021 00:52	WG1753156

- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	10/09/2021 22:22	WG1754155
Toluene	U		0.278	1.00	1	10/09/2021 22:22	WG1754155
Ethylbenzene	U		0.137	1.00	1	10/09/2021 22:22	WG1754155
Total Xylenes	U		0.174	3.00	1	10/09/2021 22:22	WG1754155
Methyl tert-butyl ether	U		0.101	1.00	1	10/09/2021 22:22	WG1754155
(S) Toluene-d8	108			80.0-120		10/09/2021 22:22	WG1754155
(S) 4-Bromofluorobenzene	97.6			77.0-126		10/09/2021 22:22	WG1754155
(S) 1,2-Dichloroethane-d4	115			70.0-130		10/09/2021 22:22	WG1754155

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	72.0	<u>J</u>	66.7	200	1	10/12/2021 04:53	WG1754008
Residual Range Organics (RRO)	U		83.3	250	1	10/12/2021 04:53	WG1754008
(S) o-Terphenyl	105			52.0-156		10/12/2021 04:53	WG1754008

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lead,Dissolved	U		2.99	6.00	1	10/11/2021 16:52	WG1753604

1 Cp

2 Tc

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	4190		31.6	100	1	10/09/2021 08:15	WG1753838
(S) a,a,a-Trifluorotoluene(FID)	86.2			78.0-120		10/09/2021 08:15	WG1753838

3 Ss

4 Cn

5 Sr

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	3.03		0.0941	1.00	1	10/09/2021 22:44	WG1754155
Toluene	1.78		0.278	1.00	1	10/09/2021 22:44	WG1754155
Ethylbenzene	67.9		0.137	1.00	1	10/09/2021 22:44	WG1754155
Total Xylenes	4.36		0.174	3.00	1	10/09/2021 22:44	WG1754155
Methyl tert-butyl ether	U		0.101	1.00	1	10/09/2021 22:44	WG1754155
(S) Toluene-d8	111			80.0-120		10/09/2021 22:44	WG1754155
(S) 4-Bromofluorobenzene	101			77.0-126		10/09/2021 22:44	WG1754155
(S) 1,2-Dichloroethane-d4	110			70.0-130		10/09/2021 22:44	WG1754155

6 Qc

7 Gl

8 Al

9 Sc

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	543		66.7	200	1	10/12/2021 05:05	WG1754625
Residual Range Organics (RRO)	U		83.3	250	1	10/12/2021 05:05	WG1754625
(S) o-Terphenyl	111			52.0-156		10/12/2021 05:05	WG1754625

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lead,Dissolved	4.17	J	2.99	6.00	1	10/11/2021 16:55	WG1753604

1 Cp

2 Tc

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	10/08/2021 01:14	WG1753156
(S) a,a,a-Trifluorotoluene(FID)	95.8			78.0-120		10/08/2021 01:14	WG1753156

3 Ss

4 Cn

5 Sr

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	10/09/2021 23:06	WG1754155
Toluene	U		0.278	1.00	1	10/09/2021 23:06	WG1754155
Ethylbenzene	U		0.137	1.00	1	10/09/2021 23:06	WG1754155
Total Xylenes	U		0.174	3.00	1	10/09/2021 23:06	WG1754155
Methyl tert-butyl ether	U		0.101	1.00	1	10/09/2021 23:06	WG1754155
(S) Toluene-d8	107			80.0-120		10/09/2021 23:06	WG1754155
(S) 4-Bromofluorobenzene	96.6			77.0-126		10/09/2021 23:06	WG1754155
(S) 1,2-Dichloroethane-d4	115			70.0-130		10/09/2021 23:06	WG1754155

6 Qc

7 Gl

8 Al

9 Sc

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	282		66.7	200	1	10/12/2021 05:19	WG1754008
Residual Range Organics (RRO)	196	J	83.3	250	1	10/12/2021 05:19	WG1754008
(S) o-Terphenyl	111			52.0-156		10/12/2021 05:19	WG1754008

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lead,Dissolved	U		2.99	6.00	1	10/11/2021 16:57	WG1753604

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	37.3	J	31.6	100	1	10/09/2021 08:38	WG1753838
(S) a,a,a-Trifluorotoluene(FID)	102			78.0-120		10/09/2021 08:38	WG1753838

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	10/09/2021 23:28	WG1754155
Toluene	U		0.278	1.00	1	10/09/2021 23:28	WG1754155
Ethylbenzene	U		0.137	1.00	1	10/09/2021 23:28	WG1754155
Total Xylenes	U		0.174	3.00	1	10/09/2021 23:28	WG1754155
Methyl tert-butyl ether	U		0.101	1.00	1	10/09/2021 23:28	WG1754155
(S) Toluene-d8	108			80.0-120		10/09/2021 23:28	WG1754155
(S) 4-Bromofluorobenzene	96.9			77.0-126		10/09/2021 23:28	WG1754155
(S) 1,2-Dichloroethane-d4	116			70.0-130		10/09/2021 23:28	WG1754155

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	U		66.7	200	1	10/12/2021 05:32	WG1754625
Residual Range Organics (RRO)	U		83.3	250	1	10/12/2021 05:32	WG1754625
(S) o-Terphenyl	108			52.0-156		10/12/2021 05:32	WG1754625

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lead,Dissolved	U		2.99	6.00	1	10/11/2021 17:00	WG1753604

1 Cp

2 Tc

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	143		31.6	100	1	10/09/2021 09:02	WG1753838
(S) a,a,a-Trifluorotoluene(FID)	105			78.0-120		10/09/2021 09:02	WG1753838

3 Ss

4 Cn

5 Sr

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	10/10/2021 07:27	WG1754154
Toluene	U		0.278	1.00	1	10/10/2021 07:27	WG1754154
Ethylbenzene	U		0.137	1.00	1	10/10/2021 07:27	WG1754154
Total Xylenes	U		0.174	3.00	1	10/10/2021 07:27	WG1754154
Methyl tert-butyl ether	U		0.101	1.00	1	10/10/2021 07:27	WG1754154
(S) Toluene-d8	102			80.0-120		10/10/2021 07:27	WG1754154
(S) 4-Bromofluorobenzene	88.7			77.0-126		10/10/2021 07:27	WG1754154
(S) 1,2-Dichloroethane-d4	109			70.0-130		10/10/2021 07:27	WG1754154

6 Qc

7 Gl

8 Al

9 Sc

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	190	J	66.7	200	1	10/09/2021 12:14	WG1753592
Residual Range Organics (RRO)	U		83.3	250	1	10/09/2021 12:14	WG1753592
(S) o-Terphenyl	107			52.0-156		10/09/2021 12:14	WG1753592

Method Blank (MB)

(MB) R3715046-1 10/11/21 16:00

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Lead,Dissolved	U		2.99	6.00

¹Cp

²Tc

³Ss

Laboratory Control Sample (LCS)

(LCS) R3715046-2 10/11/21 16:03

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Lead,Dissolved	1000	948	94.8	80.0-120	

⁴Cn

⁵Sr

L1412098-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1412098-01 10/11/21 16:06 • (MS) R3715046-4 10/11/21 16:12 • (MSD) R3715046-5 10/11/21 16:14

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Lead,Dissolved	1000	U	977	973	97.7	97.3	1	75.0-125			0.360	20

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3714816-2 10/07/21 22:19

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	38.1	↓	31.6	100
(S) a,a,a-Trifluorotoluene(FID)	95.4			78.0-120

Laboratory Control Sample (LCS)

(LCS) R3714816-1 10/07/21 21:35

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5500	4820	87.6	70.0-124	
(S) a,a,a-Trifluorotoluene(FID)			103	78.0-120	

L1412185-10 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1412185-10 10/08/21 03:04 • (MS) R3714816-3 10/08/21 05:58 • (MSD) R3714816-4 10/08/21 06:20

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Gasoline Range Organics-NWTPH	5500	36.9	727	737	12.5	12.7	1	10.0-155			1.37	21
(S) a,a,a-Trifluorotoluene(FID)					97.0	97.1		78.0-120				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3715003-2 10/09/21 01:23

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	U		31.6	100
(S) a,a,a-Trifluorotoluene(FID)	104			78.0-120

Laboratory Control Sample (LCS)

(LCS) R3715003-1 10/09/21 00:37

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5500	4800	87.3	70.0-124	
(S) a,a,a-Trifluorotoluene(FID)			98.8	78.0-120	

L1412156-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1412156-04 10/09/21 10:11 • (MS) R3715003-3 10/09/21 10:57 • (MSD) R3715003-4 10/09/21 11:21

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Gasoline Range Organics-NWTPH	5500	82.4	2790	4120	49.2	73.4	1	10.0-155		J3	38.5	21
(S) a,a,a-Trifluorotoluene(FID)					97.9	96.1		78.0-120				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3715014-3 10/10/21 02:38

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Benzene	U		0.0941	1.00
Ethylbenzene	U		0.137	1.00
Methyl tert-butyl ether	U		0.101	1.00
Toluene	U		0.278	1.00
Xylenes, Total	U		0.174	3.00
(S) Toluene-d8	103			80.0-120
(S) 4-Bromofluorobenzene	87.6			77.0-126
(S) 1,2-Dichloroethane-d4	111			70.0-130

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3715014-1 10/10/21 01:35 • (LCSD) R3715014-2 10/10/21 01:56

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	5.00	4.79	4.68	95.8	93.6	70.0-123			2.32	20
Ethylbenzene	5.00	5.27	5.03	105	101	79.0-123			4.66	20
Methyl tert-butyl ether	5.00	4.53	4.55	90.6	91.0	68.0-125			0.441	20
Toluene	5.00	4.63	4.41	92.6	88.2	79.0-120			4.87	20
Xylenes, Total	15.0	14.5	14.0	96.7	93.3	79.0-123			3.51	20
(S) Toluene-d8				101	99.2	80.0-120				
(S) 4-Bromofluorobenzene				91.4	89.9	77.0-126				
(S) 1,2-Dichloroethane-d4				111	108	70.0-130				

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3715033-2 10/09/21 18:43

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Benzene	U		0.0941	1.00
Ethylbenzene	U		0.137	1.00
Methyl tert-butyl ether	U		0.101	1.00
Toluene	U		0.278	1.00
Xylenes, Total	U		0.174	3.00
(S) Toluene-d8	108			80.0-120
(S) 4-Bromofluorobenzene	96.8			77.0-126
(S) 1,2-Dichloroethane-d4	119			70.0-130

Laboratory Control Sample (LCS)

(LCS) R3715033-1 10/09/21 17:38

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	5.00	5.01	100	70.0-123	
Ethylbenzene	5.00	4.49	89.8	79.0-123	
Methyl tert-butyl ether	5.00	5.38	108	68.0-125	
Toluene	5.00	4.91	98.2	79.0-120	
Xylenes, Total	15.0	13.9	92.7	79.0-123	
(S) Toluene-d8			105	80.0-120	
(S) 4-Bromofluorobenzene			99.3	77.0-126	
(S) 1,2-Dichloroethane-d4			116	70.0-130	

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3714719-1 10/09/21 08:02

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Diesel Range Organics (DRO)	U		66.7	200
Residual Range Organics (RRO)	U		83.3	250
<i>(S) o-Terphenyl</i>	100			52.0-156

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3714719-2 10/09/21 08:30 • (LCSD) R3714719-3 10/09/21 08:58

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Diesel Range Organics (DRO)	1500	1460	1460	97.3	97.3	50.0-150			0.000	20
<i>(S) o-Terphenyl</i>				126	126	52.0-156				

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Method Blank (MB)

(MB) R3714878-1 10/11/21 09:30

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Diesel Range Organics (DRO)	U		66.7	200
Residual Range Organics (RRO)	U		83.3	250
<i>(S) o-Terphenyl</i>	81.0			52.0-156

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3714878-2 10/11/21 09:56 • (LCSD) R3714878-3 10/11/21 10:22

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Diesel Range Organics (DRO)	1500	1370	1260	91.3	84.0	50.0-150			8.37	20
<i>(S) o-Terphenyl</i>				103	98.0	52.0-156				

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Method Blank (MB)

(MB) R3715045-1 10/11/21 16:05

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Diesel Range Organics (DRO)	U		66.7	200
Residual Range Organics (RRO)	U		83.3	250
<i>(S) o-Terphenyl</i>	109			52.0-156

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3715045-2 10/11/21 16:31 • (LCSD) R3715045-3 10/11/21 16:57

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Diesel Range Organics (DRO)	1500	1780	1820	119	121	50.0-150			2.22	20
<i>(S) o-Terphenyl</i>				113	114	52.0-156				

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier Description

B	The same analyte is found in the associated blank.
J	The identification of the analyte is acceptable; the reported value is an estimate.
J3	The associated batch QC was outside the established quality control range for precision.

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 GI

8 AI

9 Sc

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico ¹	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	KY90010	South Carolina	84004002
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas ⁵	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Company Name/Address:
Arcadis - Chevron - WA
 1100 Olive Way
 Suite 800
 Seattle, WA 98101

Billing Information:
 Attn: Accounts Payable
 630 Plaza Dr., Ste. 600
 Highlands Ranch, CO 80129

Analysis / Container / Preservative



12065 Lebanon Rd Mount Juliet, TN 37122
 Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: <https://info.pacelabs.com/hubs/pas-standard-terms.pdf>

Report to:
Ada Hamilton/Alex Laws

Email To:
 alexander.laws@arcadis.com; Ada.Hamilton@ar

Project Description:
 97502

City/State Collected:
 SEDRO-WOLLEY, WA

Please Circle:
 PT MT CT ET

Phone: 206-325-5254

Client Project #
 30064310 07.21-Plan

Lab Project #
 CHEVARCWA-97502

Collected by (print):
 J. SEPIOL / M. ANDREWS
 B. PAULSON

Site/Facility ID #
 640 METCALF ST SEDRO-

P.O. #

Collected by (signature):
 [Signature]

Rush? (Lab MUST Be Notified)
 Same Day Five Day
 Next Day 5 Day (Rad Only)
 Two Day 10 Day (Rad Only)
 Three Day

Quote #
 Date Results Needed

Immediately Packed on Ice N Y X

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	BTEXM 8260D 40mlAmb-HCl	Diss Pb 6010 250mlHDPE-NoPres	NWTPHDX LVINOSGT 40mlAmb-HCl-BT	NWTPHGX 40mlAmb HCl	PAHs 8270ESIM 40mlAmb-NoPres-WT
MW-10-20210929	G	GW	—	09/29/21	1030	9	X	X	X	X	
MW-6-20210927	G	GW	—	09/27/21	1400	9	X	X	X	X	
DUP-2-092921	G	GW	—	09/29/21	—	9	X	X	X	X	
MW-15-20210927	G	GW	—	09/27/21	1615	9	X	X	X	X	
MW-16-20210927	G	GW	—	09/27/21	1515	9	X	X	X	X	
MW-11-20210929	G	GW	—	09/29/21	1042	9	X	X	X	X	
RS-1-092921	G	GW	—	09/29/21	1700	9	X	X	X	X	
RS-1-092921	G	GW	—	09/29/21	1100	9	X	X	X	X	
MW-12-20210928	G	GW	—	09/28/21	1415	9	X	X	X	X	
TRIP BLANK	—	GW	—	—	—	4					

SDG # 1412143

Tab **E050**

Acctnum: CHEVARCWA
 Template: T194616
 Prelogin: P871798
 PM: 110 - Brian Ford
 PB: NS 9/9/21

Shipped Via:
 Remarks Sample # (lab only)

* Matrix:
 SS - Soil AIR - Air F - Filter
 GW - Groundwater B - Bioassay
 WW - WasteWater
 DW - Drinking Water
 OT - Other

Remarks:
 pH _____ Temp _____
 Flow _____ Other _____
 Samples returned via:
 ___ UPS X FedEx ___ Courier _____
 Tracking # _____

Sample Receipt Checklist
 COC Seal Present/Intact: Y N
 COC Signed/Accurate: X N
 Bottles arrive intact: X N
 Correct bottles used: X N
 Sufficient volume sent: Y N
 If Applicable
 VOA Zero Headspace: X N
 Preservation Correct/Checked: Y N
 RAD Screen <0.5 mR/hr: X N

Relinquished by: (Signature)
 [Signature]
 Date: 09/29/21
 Time: 1400

Date:
 Time:

Received by: (Signature)
 [Signature]

Trip Blank Received: Yes/No
 HCl / MeOH
 TBR
 Temp: 21.40 °C
 Bottles Received: 21

If preservation required by Login: Date/Time
 Hold:
 Condition: NCF / OK

Chevron - WA

DATA REVIEW

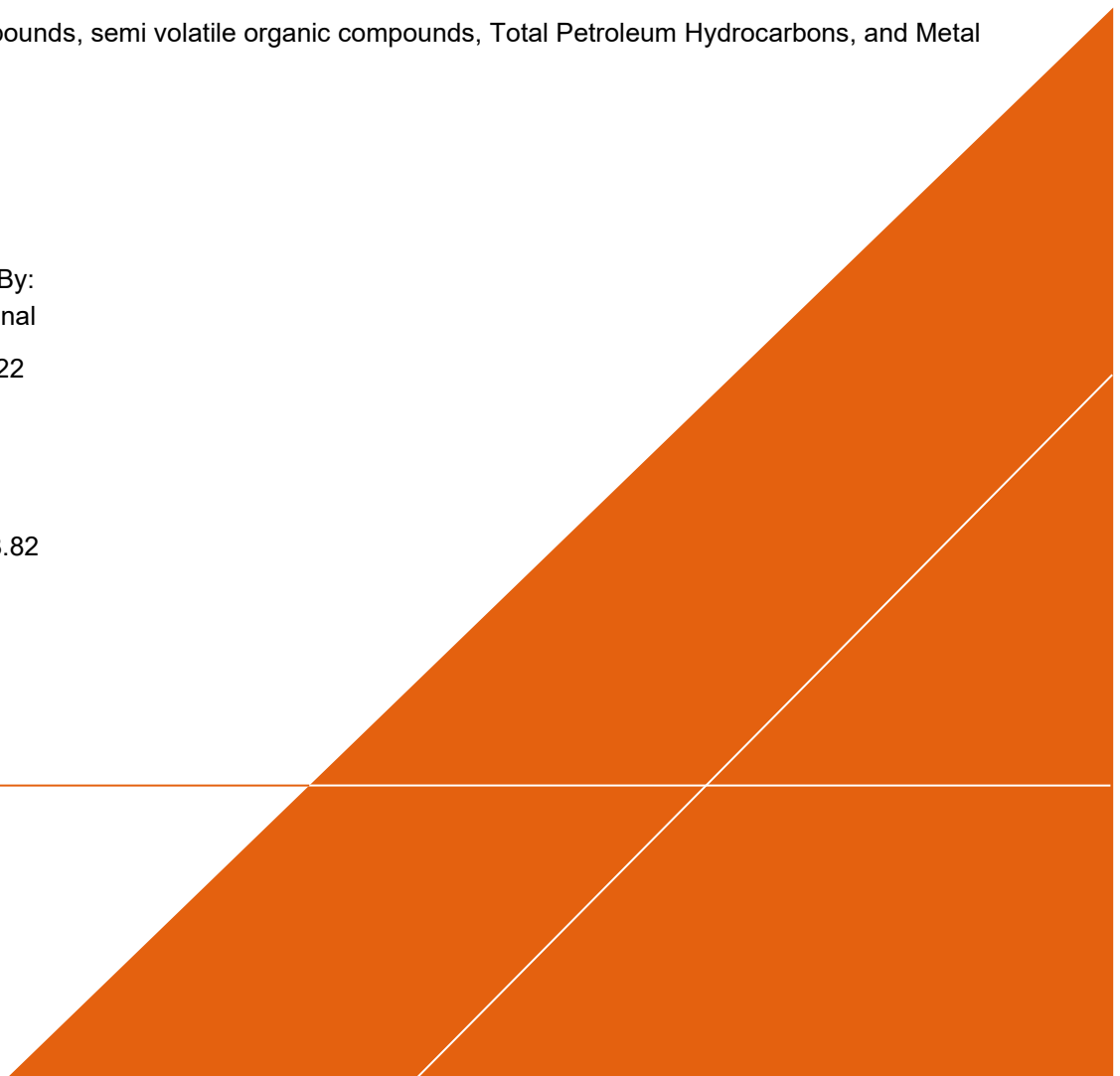
SEDRO-WOOLLEY, WA

Volatile organic compounds, semi volatile organic compounds, Total Petroleum Hydrocarbons, and Metal Analyses

SDG# L1443594

Analyses Performed By:
Pace Analytical National
Mount Juliet, TN 37122

Report # 44193R
Review Level: Tier II
Project: 30064310.08.82



DATA REVIEW REPORT

SUMMARY

This data quality assessment summarizes the review of Sample Delivery Groups (SDG) # L1443594 for samples collected in association with the Chevron SEDRO-WOOLLEY, WA Site. The review was conducted as a Tier II evaluation and included review of data package completeness. Only analytical data associated with constituents of concern were reviewed for this validation. Field documentation was not included in this review. Included with this assessment are the validation annotated sample result sheets and chain of custody. Analyses were performed on the following samples:

Sample ID	Lab ID	Matrix	Sample Collection Date	Parent Sample	Analysis			
					VOC	SVOC	TPH	MET
MW-4-W-20211214	L1443594-01	Water	12/14/2021		X		X	X
MW-5-W-20211216	L1443594-02	Water	12/16/2021		X		X	X
MW-6-W-20211214	L1443594-03	Water	12/14/2021		X		X	X
MW-7-W-20211215	L1443594-04	Water	12/15/2021		X	X	X	X
MW-8-W-20211215	L1443594-05	Water	12/15/2021		X		X	X
MW-10-W-20211215	L1443594-06	Water	12/15/2021		X		X	X
MW-11-W-20211215	L1443594-07	Water	12/15/2021		X		X	X
MW-12-W-20211216	L1443594-08	Water	12/16/2021		X		X	X
MW-13-W-20211215	L1443594-09	Water	12/15/2021		X		X	X
MW-14-W-20211216	L1443594-10	Water	12/16/2021		X		X	X
MW-15-W-20211214	L1443594-11	Water	12/14/2021		X		X	X
MW-16-W-20211214	L1443594-12	Water	12/14/2021		X		X	X
MW-17-W-20211215	L1443594-13	Water	12/15/2021		X		X	X
MW-18-W-20211215	L1443594-14	Water	12/15/2021		X		X	X
MW-19-W-20211215	L1443594-15	Water	12/15/2021		X		X	X
MW-20-W-20211215	L1443594-16	Water	12/15/2021		X		X	X
MW-21-W-20211216	L1443594-17	Water	12/16/2021		X		X	X
DUP-1-121521	L1443594-18	Water	12/15/2021	MW-13-W-20211215	X		X	X
RS-1-121421	L1443594-19	Water	12/14/2021		X		X	X

Notes:

VOC = volatile organic compounds.

SVOC = Semi Volatile Organic Compounds

TPH = total petroleum hydrocarbons.

MET = metals.

DATA REVIEW REPORT

ANALYTICAL DATA PACKAGE DOCUMENTATION

The table below is the evaluation of the data package completeness.

Items Reviewed	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
1. Sample receipt condition		X		X	
2. Requested analyses and sample results		X		X	
3. Master tracking list		X		X	
4. Methods of analysis		X		X	
5. Reporting limits		X		X	
6. Sample collection date		X		X	
7. Laboratory sample received date		X		X	
8. Sample preservation verification (as applicable)		X		X	
9. Sample preparation/extraction/analysis dates		X		X	
10. Fully executed Chain-of-Custody (COC) form		X		X	
11. Narrative summary of QA or sample problems provided		X		X	
12. Data Package Completeness and Compliance		X		X	

Note:

QA - Quality Assurance

DATA REVIEW REPORT

ORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) SW-846 Methods 8260D, NWTPHDX, NWTPHGX and 8270 E by SIM. Data were reviewed in accordance with the method specified criteria, USEPA National Functional Guidelines NFG for Organic Superfund Methods Data Review, EPA-540-R-20-005 (November 2020), with reference to the historical (USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review, OSWER 9240.1-05A-P, October 1999, as appropriate).

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and had already been subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with USEPA National Functional Guidelines:

- Concentration (C) Qualifiers
 - U The compound was analyzed for but not detected. The associated value is the compound quantitation limit.
 - B The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.
- Quantitation (Q) Qualifiers
 - E The compound was quantitated above the calibration range.
 - D Concentration is based on a diluted sample analysis.
- Validation Qualifiers
 - J The compound was positively identified; however, the associated numerical value is an estimated concentration only.
 - UJ The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.
 - JN The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification. The associated numerical value is an estimated concentration only.
 - UB Compound considered non-detect at the listed value due to associated blank contamination.
 - N The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.
 - R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is

DATA REVIEW REPORT

that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

DATA REVIEW REPORT

VOLATILE ORGANIC COMPOUND (VOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8260D	Water	14 days from collection to analysis (preserved)	Cool to <6 °C; preserved to a pH of less than 2 s.u.

Note:

s.u. Standard units

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the sample detection limit (SDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the SDL in the associated blanks; therefore, detected sample results were not associated with blank contamination.

3. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. VOC analysis requires that all surrogates associated with the analysis exhibit recoveries within the laboratory-established acceptance limits.

Sample locations associated with surrogates exhibiting recoveries outside of the control limits presented in the following table.

Sample ID	Surrogate	Recovery
MW-8-W-20211215	(S) Toluene-d8	> UL

Notes:

UL - Upper limit

The criteria used to evaluate the surrogate recoveries are presented in the following table. In the case of a surrogate deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> UL	Non-detect	No Action

DATA REVIEW REPORT

Control Limit	Sample Result	Qualification
	Detect	J
< LL but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J
Surrogates diluted below the calibration curve due to the high concentration of a target compounds	Non-detect	UJ ¹
	Detect	J ¹

Note:

- ¹ A more concentrated analysis was not performed with surrogate compounds within the calibration range; therefore, no determination of extraction efficiency could be made.

4. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analyses

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

MS/MSD analysis was performed on sample MW-11-W-20211215. MS/MSD analysis exhibited recoveries and RPDs within the laboratory established acceptance limits.

5. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS/LCSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All compounds associated with the LCS/LCSD analysis exhibited recoveries within the control limits.

6. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

Results for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compounds	Sample Result (ug/l)	Duplicate Result (ug/l)	RPD
MW-13-W-20211215 / DUP-1-121521	All Target Compounds	U	U	AC

Notes:

AC - Acceptable

The calculated RPDs between the parent sample and field duplicate were acceptable.

DATA REVIEW REPORT

7. System Performance and Overall Assessment

Sample results associated with compound that exhibited a concentration greater than the linear range of the instrument calibration are summarized in the following table.

Sample ID	Compound	Original Analysis (ug/l)	Diluted Analysis (ug/l)	Reported Analysis
MW-14-W-20211216	Ethylbenzene	--	337	337 D
	Total Xylenes	--	1240	1240 D

Note: In the instance where both the original analysis and the diluted analysis sample results exhibited a concentration greater than and/or less than the calibration linear range of the instrument; the sample result exhibiting the greatest concentration will be reported as the final result.

Sample results associated with compounds exhibiting concentrations greater than the linear range are qualified as documented in the table below when reported as the final reported sample result.

Reported Sample Results	Qualification
Diluted sample result within calibration range	D
Diluted sample result less than the calibration range	DJ
Diluted sample result greater than the calibration range	EDJ
Original sample result greater than the calibration range	EJ

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA REVIEW REPORT

DATA VALIDATION CHECKLIST FOR VOCs

VOCs: SW-846 8260D	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	

GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)

Tier II Validation

Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks	X				X
C. Trip blanks	X				X
Laboratory Control Sample (LCS)		X		X	
Laboratory Control Sample Duplicate (LCSD)		X		X	
LCS/LCSD Precision (RPD)		X		X	
Matrix Spike (MS)		X		X	
Matrix Spike Duplicate (MSD)		X		X	
MS/MSD Precision (RPD)		X		X	
Field/Lab Duplicate (RPD)		X		X	
Surrogate Spike Recoveries		X	X		
Dilution Factor		X		X	

Notes:

%R Percent recovery

RPD Relative percent difference

DATA REVIEW REPORT

SEMIVOLATILE ORGANIC COMPOUND (SVOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8270 E by SIM	Water	7 days from collection to extraction and 40 days from extraction to analysis	Cool to <6 °C

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore detected sample results were not associated with blank contamination.

3. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. SVOC analysis requires that two of the three SVOC surrogate compounds within each fraction exhibit recoveries within the laboratory-established acceptance limits.

All surrogate recoveries were within control limits.

4. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

MS/MSD analysis was not performed on sample within this SDG.

5. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS/LCSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All compounds associated with the LCS/LCSD analysis exhibited recoveries within the control limits.

DATA REVIEW REPORT

6. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices

A field duplicate sample was not collected from sample locations associated with this SDG.

7. Compound Identification

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA REVIEW REPORT

DATA VALIDATION CHECKLIST FOR SVOCs

SVOCs: SW-846 8270 E By SIM	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks	X				X
Laboratory Control Sample (LCS) %R		X		X	
Laboratory Control Sample Duplicate(LCSD) %R		X		X	
LCS/LCSD Precision (RPD)		X		X	
Matrix Spike (MS) %R	X				X
Matrix Spike Duplicate(MSD) %R	X				X
MS/MSD Precision (RPD)	X				X
Field/Lab Duplicate (RPD)	X				X
Surrogate Spike Recoveries		X		X	
Dilution Factor		X		X	
Moisture Content	X				X

Notes:

%R Percent recovery

RPD Relative percent difference

%D Percent difference

DATA REVIEW REPORT

TOTAL PETROLEUM HYDROCARBONS ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
GRO by Method NWTPHGX	Water	14 days from collection to analysis	Cool to <6 °C; preserved to a pH of less than 2.
DRO by Method NWTPHDX	Water	14 days from collection to extraction and 40 days from extraction to analysis	Cool to <6 °C; preserved to a pH of less than 2.

All samples were analyzed within the specified holding times.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the sample detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds Gasoline Range Organics (89.1 ug/l and 61.5 ug/l) were detected in the associated QA blanks; however, the associated sample results were greater than the BAL and/or were non-detect. Therefore, sample results greater than the BAL resulted in the removal of the laboratory qualifier (B). No other qualification of the sample results was required

3. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. The analysis requires surrogate compounds exhibit recoveries within the laboratory-established acceptance limits.

Sample locations associated with surrogates exhibiting recoveries outside of the control limits presented in the following table.

Sample ID	Surrogate	Recovery
MW-14-W-20211216	a,a,a-Trifluorotoluene (FID)	< LL but > 10%

Notes:

LL - Lower limit

The criteria used to evaluate the surrogate recoveries are presented in the following table. In the case of a surrogate deviation, the sample results are qualified as documented in the table below.

DATA REVIEW REPORT

Control Limit	Sample Result	Qualification
> UL	Non-detect	No Action
	Detect	J
< LL but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J
Surrogates diluted below the calibration curve due to the high concentration of a target compounds	Non-detect	UJ ¹
	Detect	J ¹

Note:

- ¹ A more concentrated analysis was not performed with surrogate compounds within the calibration range; therefore, no determination of extraction efficiency could be made.

4. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analyses

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

MS/MSD analysis was performed on sample MW-11-W-20211215. MS/MSD analysis exhibited recoveries and RPDs within the laboratory established acceptance limits.

5. Laboratory Control Sample (LCS)/Laboratory Control Sample Duplicate Analysis (LCSD)

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All compounds associated with the LCS/LCSD analysis exhibited recoveries within the control limits.

6. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

Results for duplicate samples are summarized in the following table.

DATA REVIEW REPORT

Sample ID/Duplicate ID	Compounds	Sample Result (ug/l)	Duplicate Result (ug/l)	RPD
MW-13-W-20211215 / DUP-1-121521	Gasoline Range Organics (GRO)	U	U	AC
	Diesel Range Organics (DRO)	76.8 J	70.0 J	AC
	Residual Range Organics (RRO)	84.9 J	U	AC

Notes:

AC = Acceptable.

The calculated RPDs between the parent sample and field duplicate were acceptable.

7. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA REVIEW REPORT

DATA VALIDATION CHECKLIST FOR TPH

TPH: NWTPHGX and NWTPHDX	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY (GC/FID)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X	X		
B. Equipment blanks	X				X
Laboratory Control Sample (LCS) %R		X		X	
Laboratory Control Sample Duplicate(LCSD) %R		X		X	
LCS/LCSD Precision (RPD)		X		X	
Matrix Spike (MS) %R		X		X	
Matrix Spike Duplicate (MSD) %R		X		X	
MS/MSD Precision (RPD)		X		X	
Field/Lab Duplicate (RPD)		X		X	
Surrogate Spike Recoveries		X	X		
Dilution Factor		X		X	

Notes:

%R - percent recovery

RPD - relative percent difference

DATA REVIEW REPORT

INORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) SW-846 Methods 6010D. Data were reviewed in accordance with the USEPA National Functional Guidelines NFG for Inorganic Superfund Methods Data Review, EPA-540-R-20-006 (November 2020), with reference to the historical (USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, OSWER 9240.1-05A-P, October 2004, as appropriate).

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and that it was already subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with the USEPA National Functional Guidelines:

- Concentration (C) Qualifiers
 - U The analyte was analyzed for but not detected. The associated value is the analyte instrument detection limit.
 - J The reported value was obtained from a reading less than the reporting limit (RL), but greater than or equal to the method detection limit (MDL).
- Quantitation (Q) Qualifiers
 - E The reported value is estimated due to the presence of interference.
 - N Spiked sample recovery is not within control limits.
 - * Duplicate analysis is not within control limits.
- Validation Qualifiers
 - J The analyte was positively identified; however, the associated numerical value is an estimated concentration only.
 - UJ The analyte was not detected above the reporting limit. However, the reported limit is approximate and may or may not represent the actual limit of detection.
 - UB Analyte considered non-detect at the listed value due to associated blank contamination.
 - R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

DATA REVIEW REPORT

METALS ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 6010D	Water	180 days from collection to analysis	Preserved to a pH of less than 2.

All samples were analyzed within the specified holding times.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank is calculated for QA blanks containing concentrations greater than the sample detection limit (SDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

All analytes were not detected above the SDL in the associated blanks; therefore, detected sample results were not associated with blank contamination.

3. Matrix Spike/Matrix Spike Duplicate (MS/MSD)/Laboratory Duplicate Analysis

MS/MSD and laboratory duplicate data are used to assess the precision and accuracy of the analytical method.

3.1 MS/MSD Analysis

All metal analytes must exhibit a percent recovery within the established acceptance limits of 75% to 125%. The MS/MSD recovery control limits do not apply for MS performed on sample locations where the analyte's concentration detected in the parent sample exceeds the MS concentration by a factor of four or greater. In instance where this is true, the data will not be qualified even if the percent recovery does not meet the control limits and the laboratory flag will be removed.

MS/MSD analysis was performed on sample MW-11-W-20211215. MS/MSD analysis exhibited recoveries and RPDs within the laboratory established acceptance limits.

3.2 Laboratory Duplicate Analysis

The laboratory duplicates relative percent difference (RPD) criterion is applied when parent and duplicate sample concentrations are greater than or equal to 5 times the RL. A control limit of 20% for water matrices is applied when the criteria above is true. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of one times the RL is applied for water matrices.

Laboratory duplicate analysis was not performed on any of the samples from this SDG.

4. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices is applied to the RPD between the parent

DATA REVIEW REPORT

sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

Results for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Analyte	Sample Result (ug/l)	Duplicate Result (ug/l)	RPD
MW-13-W-20211215 / DUP-1-121521	Lead, Dissolved	U	U	AC

Notes:

AC - Acceptable

The calculated RPDs between the parent sample and field duplicate were acceptable.

5. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the accuracy of the analytical method independent of matrix interferences. The analytes associated with the LCS analysis must exhibit a percent recovery between the control limits of 80% and 120%.

The LCS analysis exhibited recoveries within the control limits.

6. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA REVIEW REPORT

DATA VALIDATION CHECKLIST FOR METAL

METALS; SW-846 6010D	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Inductively Coupled Plasma-Mass Spectrometry (ICP-MS)					
Tier II Validation					
Holding Times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Instrument Blanks	X				X
B. Method Blanks		X		X	
C. Equipment/Field Blanks	X				X
Laboratory Control Sample (LCS)		X		X	
Laboratory Control Sample Duplicate (LCSD) %R	X				X
LCS/LCSD Precision (RPD)	X				X
Matrix Spike (MS) %R		X		X	
Matrix Spike Duplicate (MSD) %R		X		X	
MS/MSD Precision (RPD)		X		X	
Lab Duplicate (RPD)	X				X
Field Duplicate (RPD)		X		X	
ICP Serial Dilution %D	X				X
Reporting Limit Verification		X		X	

Notes:


%R Percent recovery

RPD Relative percent difference

%D Percent difference

DATA REVIEW REPORT

VALIDATION PERFORMED BY: Bhagyashree Fulzele

SIGNATURE: 

DATE: January 20, 2022

PEER REVIEW: Dennis Capria

DATE: January 24, 2022

**CHAIN OF CUSTODY
CORRECTED SAMPLE ANALYSIS DATA
SHEETS**



Company Name/Address: **Arcadis - Chevron - WA**
 1100 Olive Way
 Suite 800
 Seattle, WA 98101

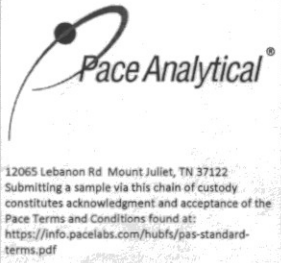
Billing Information:
 Attn: Accounts Payable
 630 Plaza Dr., Ste. 600
 Highlands Ranch, CO 80129

Analysis / Container / Preservative

Chain of Custody Page 1 of 3

Report to: **ADA HAMILTON / Amanda Bowring**
 Email To: **ALEXANDER.LAWS**
 amanda.bowring@arcadis.com;environmentDM

Project Description: **93124 97502**
 City/State Collected: **SEDRU-WOLLEY, WA** Please Circle: **Ⓟ** MT CT ET



Phone: **206-325-5254** Client Project # **30063848** Lab Project # **CHEVARCWA-93124-97502**

Collected by (print): **J. SEPIOL / S. BROOKS** Site/Facility ID # **640 METCALF 1050 HARRISON AVE, ST** P.O. #

Collected by (signature): *[Signature]* Rush? (Lab MUST Be Notified)
 ___ Same Day ___ Five Day ___ Next Day ___ 5 Day (Rad Only) ___ Two Day ___ 10 Day (Rad Only) ___ Three Day

Quote # _____ Date Results Needed _____

Packed on Ice N ___ Y No. of Cntrs _____

SDG # **11043594**

Tabl **D181**

Acctnum: **CHEVARCWA**
 Template: **T193097**
 Prelogin: **P866288**
 PM: **110 - Brian Ford**
 PB: **TN 8-17-21**

Shipped Via: _____

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	BTEXM/EDB/EDC 8260D 40mlAmb-HCI	NWTPHDX LVINOSGT 40mlAmb-HCI-BT	NWTPHGX 40mlAmb HCl	Total Pb 6010 250mlHDPE-HNO3	NWTPH-GX 40ml HCl	NWTPH-Dx 40ml HCl	BTEX + MTBE BY 8260 40ml HCl	DISS. LEAD BY 6000 250ml NO-PRES	CPAHs 8270E 40ml NO PRES
MW-4-W-20211214	G	GW	—	12/14/21	1440	9					X	X	X	X	
MW-5-W-20211216	G	GW	—	12/16/21	0915	9					X	X	X	X	
MW-6-W-20211214	G	GW	—	12/14/21	1415	9					X	X	X	X	
MW-7-W-20211215	G	GW	—	12/15/21	1455	11					X	X	X	X	
MW-8-W-20211215	G	GW	—	12/15/21	1535	9					X	X	X	X	
MW-10-W-20211215	G	GW	—	12/15/21	1155	9					X	X	X	X	
MW-11-W-20211215	G	GW	—	12/15/21	1130	9					X	X	X	X	
MW-12-W-20211216	G	GW	—	12/16/21	1028	9					X	X	X	X	
MW-13-W-20211215	G	GW	—	12/15/21	1400	9					X	X	X	X	
MW-14-W-20211216	G	GW	—	12/16/21	0925	9					X	X	X	X	

* Matrix: SS - Soil AIR - Air F - Filter
 GW - Groundwater B - Bioassay
 WW - WasteWater
 DW - Drinking Water
 OT - Other _____

Remarks: _____

pH _____ Temp _____
 Flow _____ Other _____

Samples returned via: UPS FedEx Courier _____ Tracking # _____

Sample Receipt Checklist

COC Seal Present/Intact: NP Y N

COC Signed/Accurate: Y N

Bottles arrive intact: Y N

Correct bottles used: Y N

Sufficient volume sent: Y N

If Applicable

VOA Zero Headspace: Y N

Preservation Correct/Checked: Y N

RAD Screen <0.5 mR/hr: Y N

Relinquished by: (Signature) <i>[Signature]</i>	Date: 12/16/21	Time: 1400	Received by: (Signature) _____	Trip Blank Received: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> MeOH <input type="checkbox"/> TBR
Relinquished by: (Signature) _____	Date: _____	Time: _____	Received by: (Signature) _____	Temp: 19.1 C Bottles Received: _____
Relinquished by: (Signature) _____	Date: _____	Time: _____	Received for lab by: (Signature) <i>[Signature]</i>	Date: 12/17/21 Time: 0900 Hold: _____ Condition: NCF / OK

**1100 Olive Way
Suite 800
Seattle, WA 98101**

**Email To:
alexander.laws@arcadis.com; Ada.Hamilton@ar**

**Report to:
Ada Hamilton/Alex Laws**

City/State Collected: SEDRO-WOLLEY, WA Please Circle: PT MT CT ET

**Project Description:
97502**

**Client Project #
30064310 07.21-Plan**

Phone: 206-325-5254

**Lab Project #
CHEVARCWA-97502**

**Collected by (print):
J. SEPIC / S. BROOKS**

**Site/Facility ID #
640 METCALF ST SEDRO-**

Collected by (signature):
[Signature]

Rush? (Lab MUST Be Notified)
 Same Day Five Day
 Next Day 5 Day (Rad Only)
 Two Day 10 Day (Rad Only)
 Three Day

Quote #
Date Results Needed

Immediately Packed on Ice N Y

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs
MW-15-W-20211214	G	GW	—	12/14/21	1325	9
MW-16-W-20211214	G	GW	—	12/14/21	1220	9
MW-17-W-20211215	G	GW	—	12/15/21	1345	9
MW-18-W-20211215	G	GW	—	12/15/21	0940	9
MW-19-W-20211215	G	GW	—	12/15/21	0915	9
MW-20-W-20211215	G	GW	—	12/15/21	1035 ⁵⁰	9
MW-21-W-20211216	G	GW	—	12/16/21	1045	9
DUP-1-121521	G	GW	—	12/15/21	—	9
MS-1-121521	G	GW	—	12/15/21	1130	9
MSD-1-121521	G	GW	—	12/15/21	1130	9

Analysis / Container / Preservative
BTEX 8260D 40mlAmb-HCl
Diss Pb 6010 250mlHDPE-NoPres
MTBE 8260D 40mlAmb-HCl
NWTPHDX no silica 40mlAmb-HCl-BT
NWTPHGX 40mlAmb HCl
DRO+HO NWTPH-Dx 40ml HCl
BIEX+MTBE BY 8260 40ml HCl
DISS. LEAD BY 6000 250ml NO-PRES

Pace Analytical
 12065 Lebanon Rd Mount Juliet, TN 37122
 Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: <https://info.pacelabs.com/hubfs/pas-standard-terms.pdf>

SDG # L1443594
Table #
Acctnum: CHEVARCWA
Template: T199825
Prelogin: P892344
PM: 110 - Brian Ford
PB: NS 12/16/21
Shipped Via:
 Remarks | Sample # (lab only)

*** Matrix:**
 SS - Soil AIR - Air F - Filter
 GW - Groundwater B - Bioassay
 WW - WasteWater
 DW - Drinking Water
 OT - Other

Remarks:
 MW-20-W-20211215 → Time 1035

Samples returned via:
 UPS FedEx Courier

Tracking #

pH _____ **Temp** _____
Flow _____ **Other** _____

Sample Receipt Checklist

COC Seal Present/Intact:	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N
COC Signed/Accurate:	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N
Bottles arrive intact:	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N
Correct bottles used:	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N
Sufficient volume sent:	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N
If Applicable	
VOA Zero Headspace:	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N
Preservation Correct/Checked:	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N
RAD Screen <0.5 mR/hr:	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N

Relinquished by: (Signature)
[Signature]

Date: 12/16/21

Time: 1400

Received by: (Signature)

Trip Blank Received: 9 Yes No
 HCL MeOH TBR

Relinquished by: (Signature)

Date:

Time:

Received by: (Signature)

Temp: 19.1 °C **Bottles Received:**

If preservation required by Login: Date/Time

Relinquished by: (Signature)

Date:

Time:

Received for lab by: (Signature)
[Signature]

Date: 12/17/21 **Time:** 0900

Hold:

Condition: NCF / OK

Company Name/Address:

Arcadis - Chevron - WA

1100 Olive Way
Suite 800
Seattle, WA 98101

Report to:
Ada Hamilton/Alex Laws

Project Description:
97502

Phone: 206-325-5254

Client Project #
30064310 07.21-Plan

Lab Project #
CHEVARCWA-97502

Collected by (print):
J. SEPULCHRE / S. BROOKS

Site/Facility ID #
640 METCALF ST SEDRO-

P.O. #

Collected by (signature):

Rush? (Lab MUST Be Notified)

Quote #

Immediately
Packed on Ice N Y X

Same Day Five Day
Next Day 5 Day (Rad Only)
Two Day 10 Day (Rad Only)
Three Day

Date Results Needed

No. of Cntrs

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs
MW-15 TRIP BLANK		GW				9
RS-1-121421		GW		12/14/21	1505	9
		GW				
		GW				
		GW				

Billing Information:

Attn: Accounts Payable
630 Plaza Dr., Ste. 600
Highlands Ranch, CO 80129

Pres Chk

Email To:
alexander.laws@arcadis.com; Ada.Hamilton@arcadis.com

City/State Collected:
SEDRO-WOLLEY, WA

Please Circle:
 PT MT CT ET

Analysis / Container / Preservative

BTEX 8260D 40mlAmb-HCl	Diss Pb 6010 250mlHDPE-NoPres	NWTPDX no silica 40mlAmb-HCl-BT	NWTPGX 40mlAmb HCl	PAHs 8270ESIM 40mlAmb-NoPres-WT	NWTPH - Gx 40ml HCl	NWTPH - Dc 40ml HCl	BTEX-1.MTBE by 8260 40 mL HCl	Diss Lead by 6000 250ml no pres	CPAHs 8270E 40ml No pres
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Chain of Custody Page 3 of 3



12065 Lebanon Rd Mount Juliet, TN 37122
Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: <https://info.pacelabs.com/hubfs/pas-standard-terms.pdf>

SDG # **61443594**
Table #
Acctnum: **CHEVARCWA**
Template: **T199825**
Prelogin: **P888553**
PM: **110 - Brian Ford**
PB: **NS 11/19/21**
Shipped Via:
Remarks | Sample # (lab only)

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other

Remarks:

Samples returned via:
 UPS FedEx Courier

Tracking #

pH _____ Temp _____
Flow _____ Other _____

Sample Receipt Checklist
COC Seal Present/Intact: NP N
COC Signed/Accurate: Y N
Bottles arrive intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
If Applicable
VOA Zero Headspace: Y N
Preservation Correct/Checked: Y N
RAD Screen <0.5 mR/hr: Y N

Relinquished by: (Signature) Shed Brooks	Date: 12/16/21	Time: 1400	Received by: (Signature)	Trip Blank Received: Yes/No 9 <input checked="" type="checkbox"/> MeOH TBR	Temp: °C	Bottles Received:	If preservation required by Login: Date/Time
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)		191		
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature) J. M. ...	Date: 12/17/21	Time: 0901	Hold:	Condition: NCF <input checked="" type="checkbox"/> OK

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lead,Dissolved	U		2.99	6.00	1	12/27/2021 10:55	WG1793893

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	12/19/2021 14:32	WG1791627
(S) a,a,a-Trifluorotoluene(FID)	106			78.0-120		12/19/2021 14:32	WG1791627

6 Qc
7 Gl
8 Al
9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	12/20/2021 03:14	WG1792004
Toluene	U		0.278	1.00	1	12/20/2021 03:14	WG1792004
Ethylbenzene	U		0.137	1.00	1	12/20/2021 03:14	WG1792004
Total Xylenes	0.402	J	0.174	3.00	1	12/20/2021 03:14	WG1792004
Methyl tert-butyl ether	U		0.101	1.00	1	12/20/2021 03:14	WG1792004
(S) Toluene-d8	114			80.0-120		12/20/2021 03:14	WG1792004
(S) 4-Bromofluorobenzene	105			77.0-126		12/20/2021 03:14	WG1792004
(S) 1,2-Dichloroethane-d4	112			70.0-130		12/20/2021 03:14	WG1792004

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	224		66.7	200	1	12/27/2021 12:01	WG1794299
Residual Range Organics (RRO)	123	J	83.3	250	1	12/27/2021 12:01	WG1794299
(S) o-Terphenyl	100			52.0-156		12/27/2021 12:01	WG1794299

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lead,Dissolved	U		2.99	6.00	1	12/27/2021 11:03	WG1793893

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	12/19/2021 14:55	WG1791627
(S) a,a,a-Trifluorotoluene(FID)	106			78.0-120		12/19/2021 14:55	WG1791627

- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	12/20/2021 03:36	WG1792004
Toluene	U		0.278	1.00	1	12/20/2021 03:36	WG1792004
Ethylbenzene	U		0.137	1.00	1	12/20/2021 03:36	WG1792004
Total Xylenes	U		0.174	3.00	1	12/20/2021 03:36	WG1792004
Methyl tert-butyl ether	U		0.101	1.00	1	12/20/2021 03:36	WG1792004
(S) Toluene-d8	116			80.0-120		12/20/2021 03:36	WG1792004
(S) 4-Bromofluorobenzene	104			77.0-126		12/20/2021 03:36	WG1792004
(S) 1,2-Dichloroethane-d4	116			70.0-130		12/20/2021 03:36	WG1792004

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	74.9	J	66.7	200	1	12/29/2021 11:52	WG1795076
Residual Range Organics (RRO)	104	J	83.3	250	1	12/29/2021 11:52	WG1795076
(S) o-Terphenyl	102			52.0-156		12/29/2021 11:52	WG1795076

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lead,Dissolved	U		2.99	6.00	1	12/27/2021 11:05	WG1793893

1 Cp

2 Tc

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	12/19/2021 15:18	WG1791627
(S) a,a,a-Trifluorotoluene(FID)	107			78.0-120		12/19/2021 15:18	WG1791627

3 Ss

4 Cn

5 Sr

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	12/20/2021 03:57	WG1792004
Toluene	U		0.278	1.00	1	12/20/2021 03:57	WG1792004
Ethylbenzene	U		0.137	1.00	1	12/20/2021 03:57	WG1792004
Total Xylenes	0.210	J	0.174	3.00	1	12/20/2021 03:57	WG1792004
Methyl tert-butyl ether	U		0.101	1.00	1	12/20/2021 03:57	WG1792004
(S) Toluene-d8	116			80.0-120		12/20/2021 03:57	WG1792004
(S) 4-Bromofluorobenzene	106			77.0-126		12/20/2021 03:57	WG1792004
(S) 1,2-Dichloroethane-d4	114			70.0-130		12/20/2021 03:57	WG1792004

6 Qc

7 Gl

8 Al

9 Sc

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	71.7	J	66.7	200	1	12/27/2021 12:27	WG1794299
Residual Range Organics (RRO)	U		83.3	250	1	12/27/2021 12:27	WG1794299
(S) o-Terphenyl	90.5			52.0-156		12/27/2021 12:27	WG1794299

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Lead,Dissolved	U		2.99	6.00	1	12/27/2021 11:08	WG1793893

1 Cp

2 Tc

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Gasoline Range Organics-NWTPH	U		31.6	100	1	12/19/2021 15:41	WG1791627
(S) a,a,a-Trifluorotoluene(FID)	107			78.0-120		12/19/2021 15:41	WG1791627

3 Ss

4 Cn

5 Sr

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Benzene	U		0.0941	1.00	1	12/20/2021 04:18	WG1792004
Toluene	U		0.278	1.00	1	12/20/2021 04:18	WG1792004
Ethylbenzene	U		0.137	1.00	1	12/20/2021 04:18	WG1792004
Total Xylenes	0.321	J	0.174	3.00	1	12/20/2021 04:18	WG1792004
Methyl tert-butyl ether	U		0.101	1.00	1	12/20/2021 04:18	WG1792004
(S) Toluene-d8	117			80.0-120		12/20/2021 04:18	WG1792004
(S) 4-Bromofluorobenzene	105			77.0-126		12/20/2021 04:18	WG1792004
(S) 1,2-Dichloroethane-d4	115			70.0-130		12/20/2021 04:18	WG1792004

6 Qc

7 Gl

8 Al

9 Sc

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Diesel Range Organics (DRO)	95.7	J	66.7	200	1	12/27/2021 21:39	WG1794783
Residual Range Organics (RRO)	185	J	83.3	250	1	12/27/2021 21:39	WG1794783
(S) o-Terphenyl	96.8			52.0-156		12/27/2021 21:39	WG1794783

Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Benzo(a)anthracene	U		0.0203	0.0500	1	12/21/2021 16:22	WG1791424
Benzo(a)pyrene	U		0.0184	0.0500	1	12/21/2021 16:22	WG1791424
Benzo(b)fluoranthene	U		0.0168	0.0500	1	12/21/2021 16:22	WG1791424
Benzo(k)fluoranthene	U		0.0202	0.0500	1	12/21/2021 16:22	WG1791424
Chrysene	U		0.0179	0.0500	1	12/21/2021 16:22	WG1791424
Dibenz(a,h)anthracene	U		0.0160	0.0500	1	12/21/2021 16:22	WG1791424
Indeno(1,2,3-cd)pyrene	U		0.0158	0.0500	1	12/21/2021 16:22	WG1791424
Naphthalene	U		0.0917	0.250	1	12/21/2021 16:22	WG1791424
1-Methylnaphthalene	U		0.0687	0.250	1	12/21/2021 16:22	WG1791424
2-Methylnaphthalene	U		0.0674	0.250	1	12/21/2021 16:22	WG1791424
(S) Nitrobenzene-d5	104			31.0-160		12/21/2021 16:22	WG1791424
(S) 2-Fluorobiphenyl	101			48.0-148		12/21/2021 16:22	WG1791424
(S) p-Terphenyl-d14	102			37.0-146		12/21/2021 16:22	WG1791424

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lead,Dissolved	U		2.99	6.00	1	12/27/2021 11:11	WG1793893

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	7270		31.6	100	1	12/19/2021 16:04	WG1791627
(S) a,a,a-Trifluorotoluene(FID)	85.4			78.0-120		12/19/2021 16:04	WG1791627

- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	12/20/2021 04:39	WG1792004
Toluene	U		0.278	1.00	1	12/20/2021 04:39	WG1792004
Ethylbenzene	2.13	J	0.137	1.00	1	12/20/2021 04:39	WG1792004
Total Xylenes	1.75	J	0.174	3.00	1	12/20/2021 04:39	WG1792004
Methyl tert-butyl ether	U		0.101	1.00	1	12/20/2021 04:39	WG1792004
(S) Toluene-d8	122	J1		80.0-120		12/20/2021 04:39	WG1792004
(S) 4-Bromofluorobenzene	103			77.0-126		12/20/2021 04:39	WG1792004
(S) 1,2-Dichloroethane-d4	110			70.0-130		12/20/2021 04:39	WG1792004

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	228		66.7	200	1	12/27/2021 22:05	WG1794783
Residual Range Organics (RRO)	119	J	83.3	250	1	12/27/2021 22:05	WG1794783
(S) o-Terphenyl	81.1			52.0-156		12/27/2021 22:05	WG1794783

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lead,Dissolved	U		2.99	6.00	1	12/27/2021 11:14	WG1793893

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	362		31.6	100	1	12/19/2021 16:28	WG1791627
(S) a,a,a-Trifluorotoluene(FID)	94.7			78.0-120		12/19/2021 16:28	WG1791627

- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	12/20/2021 05:00	WG1792004
Toluene	1.54		0.278	1.00	1	12/20/2021 05:00	WG1792004
Ethylbenzene	2.16		0.137	1.00	1	12/20/2021 05:00	WG1792004
Total Xylenes	1.89	J	0.174	3.00	1	12/20/2021 05:00	WG1792004
Methyl tert-butyl ether	U		0.101	1.00	1	12/20/2021 05:00	WG1792004
(S) Toluene-d8	117			80.0-120		12/20/2021 05:00	WG1792004
(S) 4-Bromofluorobenzene	108			77.0-126		12/20/2021 05:00	WG1792004
(S) 1,2-Dichloroethane-d4	116			70.0-130		12/20/2021 05:00	WG1792004

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	171	J	66.7	200	1	12/27/2021 22:30	WG1794783
Residual Range Organics (RRO)	U		83.3	250	1	12/27/2021 22:30	WG1794783
(S) o-Terphenyl	100			52.0-156		12/27/2021 22:30	WG1794783

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lead,Dissolved	U		2.99	6.00	1	12/27/2021 10:36	WG1793893

1 Cp

2 Tc

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	457		31.6	100	1	12/19/2021 16:51	WG1791627
(S) a,a,a-Trifluorotoluene(FID)	94.8			78.0-120		12/19/2021 16:51	WG1791627

3 Ss

4 Cn

5 Sr

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	0.896	J	0.0941	1.00	1	12/20/2021 05:21	WG1792004
Toluene	0.343	J	0.278	1.00	1	12/20/2021 05:21	WG1792004
Ethylbenzene	5.67		0.137	1.00	1	12/20/2021 05:21	WG1792004
Total Xylenes	0.609	J	0.174	3.00	1	12/20/2021 05:21	WG1792004
Methyl tert-butyl ether	U		0.101	1.00	1	12/20/2021 05:21	WG1792004
(S) Toluene-d8	115			80.0-120		12/20/2021 05:21	WG1792004
(S) 4-Bromofluorobenzene	103			77.0-126		12/20/2021 05:21	WG1792004
(S) 1,2-Dichloroethane-d4	112			70.0-130		12/20/2021 05:21	WG1792004

6 Qc

7 Gl

8 Al

9 Sc

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	129	J	66.7	200	1	12/27/2021 22:55	WG1794783
Residual Range Organics (RRO)	U		83.3	250	1	12/27/2021 22:55	WG1794783
(S) o-Terphenyl	100			52.0-156		12/27/2021 22:55	WG1794783

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lead,Dissolved	U		2.99	6.00	1	12/27/2021 11:16	WG1793893

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	12/19/2021 17:14	WG1791627
(S) a,a,a-Trifluorotoluene(FID)	105			78.0-120		12/19/2021 17:14	WG1791627

6 Qc
7 Gl
8 Al
9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	12/20/2021 05:42	WG1792004
Toluene	U		0.278	1.00	1	12/20/2021 05:42	WG1792004
Ethylbenzene	U		0.137	1.00	1	12/20/2021 05:42	WG1792004
Total Xylenes	U		0.174	3.00	1	12/20/2021 05:42	WG1792004
Methyl tert-butyl ether	U		0.101	1.00	1	12/20/2021 05:42	WG1792004
(S) Toluene-d8	112			80.0-120		12/20/2021 05:42	WG1792004
(S) 4-Bromofluorobenzene	105			77.0-126		12/20/2021 05:42	WG1792004
(S) 1,2-Dichloroethane-d4	115			70.0-130		12/20/2021 05:42	WG1792004

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	83.6	J	66.7	200	1	12/29/2021 11:25	WG1795076
Residual Range Organics (RRO)	101	J	83.3	250	1	12/29/2021 11:25	WG1795076
(S) o-Terphenyl	102			52.0-156		12/29/2021 11:25	WG1795076

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lead,Dissolved	U		2.99	6.00	1	12/27/2021 11:19	WG1793893

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	12/19/2021 17:37	WG1791627
(S) a,a,a-Trifluorotoluene(FID)	106			78.0-120		12/19/2021 17:37	WG1791627

- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	12/20/2021 06:03	WG1792004
Toluene	U		0.278	1.00	1	12/20/2021 06:03	WG1792004
Ethylbenzene	U		0.137	1.00	1	12/20/2021 06:03	WG1792004
Total Xylenes	U		0.174	3.00	1	12/20/2021 06:03	WG1792004
Methyl tert-butyl ether	U		0.101	1.00	1	12/20/2021 06:03	WG1792004
(S) Toluene-d8	118			80.0-120		12/20/2021 06:03	WG1792004
(S) 4-Bromofluorobenzene	109			77.0-126		12/20/2021 06:03	WG1792004
(S) 1,2-Dichloroethane-d4	118			70.0-130		12/20/2021 06:03	WG1792004

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	76.8	J	66.7	200	1	12/28/2021 00:09	WG1794783
Residual Range Organics (RRO)	84.9	J	83.3	250	1	12/28/2021 00:09	WG1794783
(S) o-Terphenyl	88.4			52.0-156		12/28/2021 00:09	WG1794783

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lead,Dissolved	U		2.99	6.00	1	12/27/2021 11:22	WG1793893

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	7390	J	31.6	100	1	12/19/2021 18:00	WG1791627
(S) a,a,a-Trifluorotoluene(FID)	69.9	J2		78.0-120		12/19/2021 18:00	WG1791627

Sample Narrative:

L1443594-10 WG1791627: Surrogate failure due to matrix interference.

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	0.413	J	0.0941	1.00	1	12/20/2021 06:25	WG1792004
Toluene	9.46		0.278	1.00	1	12/20/2021 06:25	WG1792004
Ethylbenzene	337	D	1.37	10.0	10	12/23/2021 18:28	WG1794378
Total Xylenes	1240	D	1.74	30.0	10	12/23/2021 18:28	WG1794378
Methyl tert-butyl ether	U		0.101	1.00	1	12/20/2021 06:25	WG1792004
(S) Toluene-d8	115			80.0-120		12/20/2021 06:25	WG1792004
(S) Toluene-d8	99.1			80.0-120		12/23/2021 18:28	WG1794378
(S) 4-Bromofluorobenzene	112			77.0-126		12/20/2021 06:25	WG1792004
(S) 4-Bromofluorobenzene	106			77.0-126		12/23/2021 18:28	WG1794378
(S) 1,2-Dichloroethane-d4	114			70.0-130		12/20/2021 06:25	WG1792004
(S) 1,2-Dichloroethane-d4	104			70.0-130		12/23/2021 18:28	WG1794378

7 Gl
8 Al
9 Sc

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	686		66.7	200	1	12/28/2021 22:03	WG1795076
Residual Range Organics (RRO)	114	J	83.3	250	1	12/28/2021 22:03	WG1795076
(S) o-Terphenyl	82.6			52.0-156		12/28/2021 22:03	WG1795076

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lead,Dissolved	U		2.99	6.00	1	01/06/2022 02:36	WG1796943

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	406	P	31.6	100	1	12/21/2021 21:00	WG1792757
(S) a,a,a-Trifluorotoluene(FID)	91.5			78.0-120		12/21/2021 21:00	WG1792757

- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	12/20/2021 06:46	WG1792004
Toluene	U		0.278	1.00	1	12/20/2021 06:46	WG1792004
Ethylbenzene	U		0.137	1.00	1	12/23/2021 17:48	WG1794378
Total Xylenes	U		0.174	3.00	1	12/23/2021 17:48	WG1794378
Methyl tert-butyl ether	U		0.101	1.00	1	12/20/2021 06:46	WG1792004
(S) Toluene-d8	116			80.0-120		12/20/2021 06:46	WG1792004
(S) Toluene-d8	97.9			80.0-120		12/23/2021 17:48	WG1794378
(S) 4-Bromofluorobenzene	113			77.0-126		12/20/2021 06:46	WG1792004
(S) 4-Bromofluorobenzene	107			77.0-126		12/23/2021 17:48	WG1794378
(S) 1,2-Dichloroethane-d4	113			70.0-130		12/20/2021 06:46	WG1792004
(S) 1,2-Dichloroethane-d4	108			70.0-130		12/23/2021 17:48	WG1794378

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	491		66.7	200	1	12/27/2021 12:53	WG1794299
Residual Range Organics (RRO)	U		83.3	250	1	12/27/2021 12:53	WG1794299
(S) o-Terphenyl	104			52.0-156		12/27/2021 12:53	WG1794299

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lead,Dissolved	U		2.99	6.00	1	01/06/2022 02:39	WG1796943

1 Cp

2 Tc

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	12/19/2021 18:47	WG1791627
(S) a,a,a-Trifluorotoluene(FID)	106			78.0-120		12/19/2021 18:47	WG1791627

3 Ss

4 Cn

5 Sr

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	12/20/2021 07:07	WG1792004
Toluene	U		0.278	1.00	1	12/20/2021 07:07	WG1792004
Ethylbenzene	U		0.137	1.00	1	12/23/2021 18:08	WG1794378
Total Xylenes	U		0.174	3.00	1	12/23/2021 18:08	WG1794378
Methyl tert-butyl ether	U		0.101	1.00	1	12/20/2021 07:07	WG1792004
(S) Toluene-d8	119			80.0-120		12/20/2021 07:07	WG1792004
(S) Toluene-d8	104			80.0-120		12/23/2021 18:08	WG1794378
(S) 4-Bromofluorobenzene	107			77.0-126		12/20/2021 07:07	WG1792004
(S) 4-Bromofluorobenzene	107			77.0-126		12/23/2021 18:08	WG1794378
(S) 1,2-Dichloroethane-d4	116			70.0-130		12/20/2021 07:07	WG1792004
(S) 1,2-Dichloroethane-d4	107			70.0-130		12/23/2021 18:08	WG1794378

6 Qc

7 Gl

8 Al

9 Sc

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	162	J	66.7	200	1	12/27/2021 13:19	WG1794299
Residual Range Organics (RRO)	U		83.3	250	1	12/27/2021 13:19	WG1794299
(S) o-Terphenyl	112			52.0-156		12/27/2021 13:19	WG1794299

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lead,Dissolved	U		2.99	6.00	1	01/06/2022 02:42	WG1796943

1 Cp

2 Tc

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	2800		31.6	100	1	12/19/2021 19:10	WG1791627
(S) a,a,a-Trifluorotoluene(FID)	95.1			78.0-120		12/19/2021 19:10	WG1791627

3 Ss

4 Cn

5 Sr

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	12/20/2021 07:28	WG1792004
Toluene	40.9		0.278	1.00	1	12/20/2021 07:28	WG1792004
Ethylbenzene	68.9		0.137	1.00	1	12/20/2021 07:28	WG1792004
Total Xylenes	382		0.174	3.00	1	12/20/2021 07:28	WG1792004
Methyl tert-butyl ether	U		0.101	1.00	1	12/20/2021 07:28	WG1792004
(S) Toluene-d8	116			80.0-120		12/20/2021 07:28	WG1792004
(S) 4-Bromofluorobenzene	110			77.0-126		12/20/2021 07:28	WG1792004
(S) 1,2-Dichloroethane-d4	113			70.0-130		12/20/2021 07:28	WG1792004

6 Qc

7 Gl

8 Al

9 Sc

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	411		66.7	200	1	12/28/2021 00:35	WG1794783
Residual Range Organics (RRO)	U		83.3	250	1	12/28/2021 00:35	WG1794783
(S) o-Terphenyl	111			52.0-156		12/28/2021 00:35	WG1794783

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lead,Dissolved	U		2.99	6.00	1	01/06/2022 02:44	WG1796943

1 Cp

2 Tc

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	427		31.6	100	1	12/19/2021 19:33	WG1791627
(S) a,a,a-Trifluorotoluene(FID)	95.0			78.0-120		12/19/2021 19:33	WG1791627

3 Ss

4 Cn

5 Sr

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	12/20/2021 07:49	WG1792004
Toluene	U		0.278	1.00	1	12/20/2021 07:49	WG1792004
Ethylbenzene	0.791	J	0.137	1.00	1	12/20/2021 07:49	WG1792004
Total Xylenes	3.96		0.174	3.00	1	12/20/2021 07:49	WG1792004
Methyl tert-butyl ether	U		0.101	1.00	1	12/20/2021 07:49	WG1792004
(S) Toluene-d8	119			80.0-120		12/20/2021 07:49	WG1792004
(S) 4-Bromofluorobenzene	106			77.0-126		12/20/2021 07:49	WG1792004
(S) 1,2-Dichloroethane-d4	115			70.0-130		12/20/2021 07:49	WG1792004

6 Qc

7 Gl

8 Al

9 Sc

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	174	J	66.7	200	1	12/28/2021 01:00	WG1794783
Residual Range Organics (RRO)	U		83.3	250	1	12/28/2021 01:00	WG1794783
(S) o-Terphenyl	107			52.0-156		12/28/2021 01:00	WG1794783

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lead,Dissolved	U		2.99	6.00	1	01/06/2022 02:53	WG1796943

1 Cp

2 Tc

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	12/19/2021 19:56	WG1791627
(S) a,a,a-Trifluorotoluene(FID)	105			78.0-120		12/19/2021 19:56	WG1791627

3 Ss

4 Cn

5 Sr

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	12/20/2021 08:10	WG1792004
Toluene	U		0.278	1.00	1	12/20/2021 08:10	WG1792004
Ethylbenzene	U		0.137	1.00	1	12/20/2021 08:10	WG1792004
Total Xylenes	0.278	J	0.174	3.00	1	12/20/2021 08:10	WG1792004
Methyl tert-butyl ether	U		0.101	1.00	1	12/20/2021 08:10	WG1792004
(S) Toluene-d8	118			80.0-120		12/20/2021 08:10	WG1792004
(S) 4-Bromofluorobenzene	106			77.0-126		12/20/2021 08:10	WG1792004
(S) 1,2-Dichloroethane-d4	112			70.0-130		12/20/2021 08:10	WG1792004

6 Qc

7 Gl

8 Al

9 Sc

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	U		66.7	200	1	12/28/2021 01:25	WG1794783
Residual Range Organics (RRO)	U		83.3	250	1	12/28/2021 01:25	WG1794783
(S) o-Terphenyl	101			52.0-156		12/28/2021 01:25	WG1794783

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lead,Dissolved	U		2.99	6.00	1	01/06/2022 02:56	WG1796943

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	12/19/2021 20:19	WG1791627
(S) a,a,a-Trifluorotoluene(FID)	107			78.0-120		12/19/2021 20:19	WG1791627

- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	12/20/2021 08:31	WG1792004
Toluene	U		0.278	1.00	1	12/20/2021 08:31	WG1792004
Ethylbenzene	U		0.137	1.00	1	12/20/2021 08:31	WG1792004
Total Xylenes	U		0.174	3.00	1	12/20/2021 08:31	WG1792004
Methyl tert-butyl ether	U		0.101	1.00	1	12/20/2021 08:31	WG1792004
(S) Toluene-d8	119			80.0-120		12/20/2021 08:31	WG1792004
(S) 4-Bromofluorobenzene	104			77.0-126		12/20/2021 08:31	WG1792004
(S) 1,2-Dichloroethane-d4	115			70.0-130		12/20/2021 08:31	WG1792004

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	U		66.7	200	1	12/28/2021 01:49	WG1794783
Residual Range Organics (RRO)	U		83.3	250	1	12/28/2021 01:49	WG1794783
(S) o-Terphenyl	80.5			52.0-156		12/28/2021 01:49	WG1794783

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lead,Dissolved	U		2.99	6.00	1	01/06/2022 02:58	WG1796943

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	12/19/2021 20:43	WG1791627
(S) a,a,a-Trifluorotoluene(FID)	107			78.0-120		12/19/2021 20:43	WG1791627

- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	12/20/2021 08:52	WG1792004
Toluene	U		0.278	1.00	1	12/20/2021 08:52	WG1792004
Ethylbenzene	U		0.137	1.00	1	12/20/2021 08:52	WG1792004
Total Xylenes	U		0.174	3.00	1	12/20/2021 08:52	WG1792004
Methyl tert-butyl ether	U		0.101	1.00	1	12/20/2021 08:52	WG1792004
(S) Toluene-d8	117			80.0-120		12/20/2021 08:52	WG1792004
(S) 4-Bromofluorobenzene	104			77.0-126		12/20/2021 08:52	WG1792004
(S) 1,2-Dichloroethane-d4	115			70.0-130		12/20/2021 08:52	WG1792004

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	89.7	J	66.7	200	1	12/28/2021 22:30	WG1795076
Residual Range Organics (RRO)	178	J	83.3	250	1	12/28/2021 22:30	WG1795076
(S) o-Terphenyl	73.2			52.0-156		12/28/2021 22:30	WG1795076

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lead,Dissolved	U		2.99	6.00	1	01/06/2022 03:01	WG1796943

1 Cp

2 Tc

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	12/19/2021 21:06	WG1791627
(S) a,a,a-Trifluorotoluene(FID)	107			78.0-120		12/19/2021 21:06	WG1791627

3 Ss

4 Cn

5 Sr

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	12/20/2021 09:13	WG1792004
Toluene	U		0.278	1.00	1	12/20/2021 09:13	WG1792004
Ethylbenzene	U		0.137	1.00	1	12/20/2021 09:13	WG1792004
Total Xylenes	U		0.174	3.00	1	12/20/2021 09:13	WG1792004
Methyl tert-butyl ether	U		0.101	1.00	1	12/20/2021 09:13	WG1792004
(S) Toluene-d8	118			80.0-120		12/20/2021 09:13	WG1792004
(S) 4-Bromofluorobenzene	101			77.0-126		12/20/2021 09:13	WG1792004
(S) 1,2-Dichloroethane-d4	118			70.0-130		12/20/2021 09:13	WG1792004

6 Qc

7 Gl

8 Al

9 Sc

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	70.0	J	66.7	200	1	12/28/2021 02:13	WG1794783
Residual Range Organics (RRO)	U		83.3	250	1	12/28/2021 02:13	WG1794783
(S) o-Terphenyl	85.3			52.0-156		12/28/2021 02:13	WG1794783

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lead,Dissolved	U		2.99	6.00	1	01/06/2022 03:04	WG1796943

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	12/20/2021 20:27	WG1792128
(S) a,a,a-Trifluorotoluene(FID)	93.9			78.0-120		12/20/2021 20:27	WG1792128

- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	12/20/2021 09:42	WG1792004
Toluene	U		0.278	1.00	1	12/20/2021 09:42	WG1792004
Ethylbenzene	U		0.137	1.00	1	12/20/2021 09:42	WG1792004
Total Xylenes	U		0.174	3.00	1	12/20/2021 09:42	WG1792004
Methyl tert-butyl ether	U		0.101	1.00	1	12/20/2021 09:42	WG1792004
(S) Toluene-d8	119			80.0-120		12/20/2021 09:42	WG1792004
(S) 4-Bromofluorobenzene	106			77.0-126		12/20/2021 09:42	WG1792004
(S) 1,2-Dichloroethane-d4	121			70.0-130		12/20/2021 09:42	WG1792004

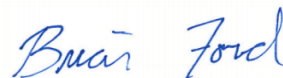
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	U		66.7	200	1	12/27/2021 13:45	WG1794299
Residual Range Organics (RRO)	U		83.3	250	1	12/27/2021 13:45	WG1794299
(S) o-Terphenyl	94.7			52.0-156		12/27/2021 13:45	WG1794299

Arcadis - Chevron - WA

Sample Delivery Group: L1443594
Samples Received: 12/17/2021
Project Number: 30064310 07.21-PLAN
Description: 97502
Site: 640 METCALF ST SEDRO-WOOLLEY
Report To: Ada Hamilton/Alex Laws
1100 Olive Way
Suite 800
Seattle, WA 98101

Entire Report Reviewed By:



Brian Ford
Project Manager

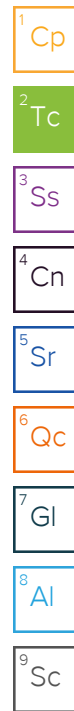
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Pace Analytical National

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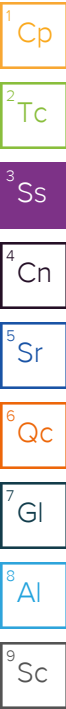


SAMPLE SUMMARY

MW-4-W-20211214 L1443594-01 GW

Collected by
JS/SB Collected date/time
12/14/21 14:40 Received date/time
12/17/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG1793893	1	12/26/21 19:41	12/27/21 10:55	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1791627	1	12/19/21 14:32	12/19/21 14:32	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1792004	1	12/20/21 03:14	12/20/21 03:14	JCP	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1794299	1	12/24/21 05:46	12/27/21 12:01	DMG	Mt. Juliet, TN



MW-5-W-20211216 L1443594-02 GW

Collected by
JS/SB Collected date/time
12/16/21 09:15 Received date/time
12/17/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG1793893	1	12/26/21 19:41	12/27/21 11:03	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1791627	1	12/19/21 14:55	12/19/21 14:55	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1792004	1	12/20/21 03:36	12/20/21 03:36	JCP	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1795076	1	12/28/21 07:48	12/29/21 11:52	WCR	Mt. Juliet, TN

MW-6-W-20211214 L1443594-03 GW

Collected by
JS/SB Collected date/time
12/14/21 14:15 Received date/time
12/17/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG1793893	1	12/26/21 19:41	12/27/21 11:05	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1791627	1	12/19/21 15:18	12/19/21 15:18	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1792004	1	12/20/21 03:57	12/20/21 03:57	JCP	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1794299	1	12/24/21 05:46	12/27/21 12:27	DMG	Mt. Juliet, TN

MW-7-W-20211215 L1443594-04 GW

Collected by
JS/SB Collected date/time
12/15/21 14:55 Received date/time
12/17/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG1793893	1	12/26/21 19:41	12/27/21 11:08	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1791627	1	12/19/21 15:41	12/19/21 15:41	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1792004	1	12/20/21 04:18	12/20/21 04:18	JCP	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1794783	1	12/27/21 03:09	12/27/21 21:39	DMG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG1791424	1	12/21/21 03:44	12/21/21 16:22	LEA	Mt. Juliet, TN

MW-8-W-20211215 L1443594-05 GW

Collected by
JS/SB Collected date/time
12/15/21 15:35 Received date/time
12/17/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG1793893	1	12/26/21 19:41	12/27/21 11:11	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1791627	1	12/19/21 16:04	12/19/21 16:04	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1792004	1	12/20/21 04:39	12/20/21 04:39	JCP	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1794783	1	12/27/21 03:09	12/27/21 22:05	DMG	Mt. Juliet, TN

MW-10-W-20211215 L1443594-06 GW

Collected by
JS/SB Collected date/time
12/15/21 11:55 Received date/time
12/17/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG1793893	1	12/26/21 19:41	12/27/21 11:14	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1791627	1	12/19/21 16:28	12/19/21 16:28	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1792004	1	12/20/21 05:00	12/20/21 05:00	JCP	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1794783	1	12/27/21 03:09	12/27/21 22:30	DMG	Mt. Juliet, TN

SAMPLE SUMMARY

MW-11-W-20211215 L1443594-07 GW

Collected by
JS/SB Collected date/time
12/15/21 11:30 Received date/time
12/17/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG1793893	1	12/26/21 19:41	12/27/21 10:36	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1791627	1	12/19/21 16:51	12/19/21 16:51	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1792004	1	12/20/21 05:21	12/20/21 05:21	JCP	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1794783	1	12/27/21 03:09	12/27/21 22:55	DMG	Mt. Juliet, TN

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

MW-12-W-20211216 L1443594-08 GW

Collected by
JS/SB Collected date/time
12/16/21 10:28 Received date/time
12/17/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG1793893	1	12/26/21 19:41	12/27/21 11:16	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1791627	1	12/19/21 17:14	12/19/21 17:14	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1792004	1	12/20/21 05:42	12/20/21 05:42	JCP	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1795076	1	12/28/21 07:48	12/29/21 11:25	WCR	Mt. Juliet, TN

MW-13-W-20211215 L1443594-09 GW

Collected by
JS/SB Collected date/time
12/15/21 14:00 Received date/time
12/17/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG1793893	1	12/26/21 19:41	12/27/21 11:19	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1791627	1	12/19/21 17:37	12/19/21 17:37	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1792004	1	12/20/21 06:03	12/20/21 06:03	JCP	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1794783	1	12/27/21 03:09	12/28/21 00:09	DMG	Mt. Juliet, TN

MW-14-W-20211216 L1443594-10 GW

Collected by
JS/SB Collected date/time
12/16/21 09:25 Received date/time
12/17/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG1793893	1	12/26/21 19:41	12/27/21 11:22	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1791627	1	12/19/21 18:00	12/19/21 18:00	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1792004	1	12/20/21 06:25	12/20/21 06:25	JCP	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1794378	10	12/23/21 18:28	12/23/21 18:28	JAH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1795076	1	12/28/21 07:48	12/28/21 22:03	DMG	Mt. Juliet, TN

MW-15-W-20211214 L1443594-11 GW

Collected by
JS/SB Collected date/time
12/14/21 13:25 Received date/time
12/17/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG1796943	1	01/05/22 13:15	01/06/22 02:36	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1792757	1	12/21/21 21:00	12/21/21 21:00	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1792004	1	12/20/21 06:46	12/20/21 06:46	JCP	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1794378	1	12/23/21 17:48	12/23/21 17:48	JAH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1794299	1	12/24/21 05:46	12/27/21 12:53	DMG	Mt. Juliet, TN

MW-16-W-20211214 L1443594-12 GW

Collected by
JS/SB Collected date/time
12/14/21 12:20 Received date/time
12/17/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG1796943	1	01/05/22 13:15	01/06/22 02:39	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1791627	1	12/19/21 18:47	12/19/21 18:47	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1792004	1	12/20/21 07:07	12/20/21 07:07	JCP	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1794378	1	12/23/21 18:08	12/23/21 18:08	JAH	Mt. Juliet, TN

SAMPLE SUMMARY

MW-16-W-20211214 L1443594-12 GW

Collected by JS/SB Collected date/time 12/14/21 12:20 Received date/time 12/17/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1794299	1	12/24/21 05:46	12/27/21 13:19	DMG	Mt. Juliet, TN

1 Cp

2 Tc

3 Ss

MW-17-W-20211215 L1443594-13 GW

Collected by JS/SB Collected date/time 12/15/21 13:45 Received date/time 12/17/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG1796943	1	01/05/22 13:15	01/06/22 02:42	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1791627	1	12/19/21 19:10	12/19/21 19:10	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1792004	1	12/20/21 07:28	12/20/21 07:28	JCP	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1794783	1	12/27/21 03:09	12/28/21 00:35	DMG	Mt. Juliet, TN

4 Cn

5 Sr

6 Qc

MW-18-W-20211215 L1443594-14 GW

Collected by JS/SB Collected date/time 12/15/21 09:40 Received date/time 12/17/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG1796943	1	01/05/22 13:15	01/06/22 02:44	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1791627	1	12/19/21 19:33	12/19/21 19:33	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1792004	1	12/20/21 07:49	12/20/21 07:49	JCP	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1794783	1	12/27/21 03:09	12/28/21 01:00	DMG	Mt. Juliet, TN

7 Gl

8 Al

9 Sc

MW-19-W-20211215 L1443594-15 GW

Collected by JS/SB Collected date/time 12/15/21 09:15 Received date/time 12/17/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG1796943	1	01/05/22 13:15	01/06/22 02:53	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1791627	1	12/19/21 19:56	12/19/21 19:56	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1792004	1	12/20/21 08:10	12/20/21 08:10	JCP	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1794783	1	12/27/21 03:09	12/28/21 01:25	DMG	Mt. Juliet, TN

MW-20-W-20211215 L1443594-16 GW

Collected by JS/SB Collected date/time 12/15/21 10:35 Received date/time 12/17/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG1796943	1	01/05/22 13:15	01/06/22 02:56	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1791627	1	12/19/21 20:19	12/19/21 20:19	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1792004	1	12/20/21 08:31	12/20/21 08:31	JCP	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1794783	1	12/27/21 03:09	12/28/21 01:49	DMG	Mt. Juliet, TN

MW-21-W-20211216 L1443594-17 GW

Collected by JS/SB Collected date/time 12/16/21 10:45 Received date/time 12/17/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG1796943	1	01/05/22 13:15	01/06/22 02:58	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1791627	1	12/19/21 20:43	12/19/21 20:43	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1792004	1	12/20/21 08:52	12/20/21 08:52	JCP	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1795076	1	12/28/21 07:48	12/28/21 22:30	DMG	Mt. Juliet, TN

SAMPLE SUMMARY

DUP-1-121521 L1443594-18 GW

Collected by JS/SB Collected date/time 12/15/21 00:00 Received date/time 12/17/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG1796943	1	01/05/22 13:15	01/06/22 03:01	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1791627	1	12/19/21 21:06	12/19/21 21:06	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1792004	1	12/20/21 09:13	12/20/21 09:13	JCP	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1794783	1	12/27/21 03:09	12/28/21 02:13	DMG	Mt. Juliet, TN

1 Cp

2 Tc

3 Ss

4 Cn

RS-1-121421 L1443594-19 GW

Collected by JS/SB Collected date/time 12/14/21 15:05 Received date/time 12/17/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG1796943	1	01/05/22 13:15	01/06/22 03:04	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1792128	1	12/20/21 20:27	12/20/21 20:27	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1792004	1	12/20/21 09:42	12/20/21 09:42	JCP	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1794299	1	12/24/21 05:46	12/27/21 13:45	DMG	Mt. Juliet, TN

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Brian Ford
Project Manager

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lead,Dissolved	U		2.99	6.00	1	12/27/2021 10:55	WG1793893

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	12/19/2021 14:32	WG1791627
(S) a,a,a-Trifluorotoluene(FID)	106			78.0-120		12/19/2021 14:32	WG1791627

6 Qc
7 Gl
8 Al
9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	12/20/2021 03:14	WG1792004
Toluene	U		0.278	1.00	1	12/20/2021 03:14	WG1792004
Ethylbenzene	U		0.137	1.00	1	12/20/2021 03:14	WG1792004
Total Xylenes	0.402	J	0.174	3.00	1	12/20/2021 03:14	WG1792004
Methyl tert-butyl ether	U		0.101	1.00	1	12/20/2021 03:14	WG1792004
(S) Toluene-d8	114			80.0-120		12/20/2021 03:14	WG1792004
(S) 4-Bromofluorobenzene	105			77.0-126		12/20/2021 03:14	WG1792004
(S) 1,2-Dichloroethane-d4	112			70.0-130		12/20/2021 03:14	WG1792004

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	224		66.7	200	1	12/27/2021 12:01	WG1794299
Residual Range Organics (RRO)	123	J	83.3	250	1	12/27/2021 12:01	WG1794299
(S) o-Terphenyl	100			52.0-156		12/27/2021 12:01	WG1794299

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lead,Dissolved	U		2.99	6.00	1	12/27/2021 11:03	WG1793893

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	12/19/2021 14:55	WG1791627
(S) a,a,a-Trifluorotoluene(FID)	106			78.0-120		12/19/2021 14:55	WG1791627

- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	12/20/2021 03:36	WG1792004
Toluene	U		0.278	1.00	1	12/20/2021 03:36	WG1792004
Ethylbenzene	U		0.137	1.00	1	12/20/2021 03:36	WG1792004
Total Xylenes	U		0.174	3.00	1	12/20/2021 03:36	WG1792004
Methyl tert-butyl ether	U		0.101	1.00	1	12/20/2021 03:36	WG1792004
(S) Toluene-d8	116			80.0-120		12/20/2021 03:36	WG1792004
(S) 4-Bromofluorobenzene	104			77.0-126		12/20/2021 03:36	WG1792004
(S) 1,2-Dichloroethane-d4	116			70.0-130		12/20/2021 03:36	WG1792004

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	74.9	J	66.7	200	1	12/29/2021 11:52	WG1795076
Residual Range Organics (RRO)	104	J	83.3	250	1	12/29/2021 11:52	WG1795076
(S) o-Terphenyl	102			52.0-156		12/29/2021 11:52	WG1795076

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lead,Dissolved	U		2.99	6.00	1	12/27/2021 11:05	WG1793893

1 Cp

2 Tc

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	12/19/2021 15:18	WG1791627
(S) a,a,a-Trifluorotoluene(FID)	107			78.0-120		12/19/2021 15:18	WG1791627

3 Ss

4 Cn

5 Sr

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	12/20/2021 03:57	WG1792004
Toluene	U		0.278	1.00	1	12/20/2021 03:57	WG1792004
Ethylbenzene	U		0.137	1.00	1	12/20/2021 03:57	WG1792004
Total Xylenes	0.210	J	0.174	3.00	1	12/20/2021 03:57	WG1792004
Methyl tert-butyl ether	U		0.101	1.00	1	12/20/2021 03:57	WG1792004
(S) Toluene-d8	116			80.0-120		12/20/2021 03:57	WG1792004
(S) 4-Bromofluorobenzene	106			77.0-126		12/20/2021 03:57	WG1792004
(S) 1,2-Dichloroethane-d4	114			70.0-130		12/20/2021 03:57	WG1792004

6 Qc

7 Gl

8 Al

9 Sc

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	71.7	J	66.7	200	1	12/27/2021 12:27	WG1794299
Residual Range Organics (RRO)	U		83.3	250	1	12/27/2021 12:27	WG1794299
(S) o-Terphenyl	90.5			52.0-156		12/27/2021 12:27	WG1794299

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Lead,Dissolved	U		2.99	6.00	1	12/27/2021 11:08	WG1793893

1 Cp
2 Tc
3 Ss
4 Cn

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Gasoline Range Organics-NWTPH	U		31.6	100	1	12/19/2021 15:41	WG1791627
(S) a,a,a-Trifluorotoluene(FID)	107			78.0-120		12/19/2021 15:41	WG1791627

5 Sr
6 Qc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Benzene	U		0.0941	1.00	1	12/20/2021 04:18	WG1792004
Toluene	U		0.278	1.00	1	12/20/2021 04:18	WG1792004
Ethylbenzene	U		0.137	1.00	1	12/20/2021 04:18	WG1792004
Total Xylenes	0.321	J	0.174	3.00	1	12/20/2021 04:18	WG1792004
Methyl tert-butyl ether	U		0.101	1.00	1	12/20/2021 04:18	WG1792004
(S) Toluene-d8	117			80.0-120		12/20/2021 04:18	WG1792004
(S) 4-Bromofluorobenzene	105			77.0-126		12/20/2021 04:18	WG1792004
(S) 1,2-Dichloroethane-d4	115			70.0-130		12/20/2021 04:18	WG1792004

7 Gl
8 Al
9 Sc

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Diesel Range Organics (DRO)	95.7	J	66.7	200	1	12/27/2021 21:39	WG1794783
Residual Range Organics (RRO)	185	J	83.3	250	1	12/27/2021 21:39	WG1794783
(S) o-Terphenyl	96.8			52.0-156		12/27/2021 21:39	WG1794783

Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Benzo(a)anthracene	U		0.0203	0.0500	1	12/21/2021 16:22	WG1791424
Benzo(a)pyrene	U		0.0184	0.0500	1	12/21/2021 16:22	WG1791424
Benzo(b)fluoranthene	U		0.0168	0.0500	1	12/21/2021 16:22	WG1791424
Benzo(k)fluoranthene	U		0.0202	0.0500	1	12/21/2021 16:22	WG1791424
Chrysene	U		0.0179	0.0500	1	12/21/2021 16:22	WG1791424
Dibenz(a,h)anthracene	U		0.0160	0.0500	1	12/21/2021 16:22	WG1791424
Indeno(1,2,3-cd)pyrene	U		0.0158	0.0500	1	12/21/2021 16:22	WG1791424
Naphthalene	U		0.0917	0.250	1	12/21/2021 16:22	WG1791424
1-Methylnaphthalene	U		0.0687	0.250	1	12/21/2021 16:22	WG1791424
2-Methylnaphthalene	U		0.0674	0.250	1	12/21/2021 16:22	WG1791424
(S) Nitrobenzene-d5	104			31.0-160		12/21/2021 16:22	WG1791424
(S) 2-Fluorobiphenyl	101			48.0-148		12/21/2021 16:22	WG1791424
(S) p-Terphenyl-d14	102			37.0-146		12/21/2021 16:22	WG1791424

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lead,Dissolved	U		2.99	6.00	1	12/27/2021 11:11	WG1793893

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	7270		31.6	100	1	12/19/2021 16:04	WG1791627
(S) a,a,a-Trifluorotoluene(FID)	85.4			78.0-120		12/19/2021 16:04	WG1791627

- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	12/20/2021 04:39	WG1792004
Toluene	U		0.278	1.00	1	12/20/2021 04:39	WG1792004
Ethylbenzene	2.13		0.137	1.00	1	12/20/2021 04:39	WG1792004
Total Xylenes	1.75	J	0.174	3.00	1	12/20/2021 04:39	WG1792004
Methyl tert-butyl ether	U		0.101	1.00	1	12/20/2021 04:39	WG1792004
(S) Toluene-d8	122	J1		80.0-120		12/20/2021 04:39	WG1792004
(S) 4-Bromofluorobenzene	103			77.0-126		12/20/2021 04:39	WG1792004
(S) 1,2-Dichloroethane-d4	110			70.0-130		12/20/2021 04:39	WG1792004

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	228		66.7	200	1	12/27/2021 22:05	WG1794783
Residual Range Organics (RRO)	119	J	83.3	250	1	12/27/2021 22:05	WG1794783
(S) o-Terphenyl	81.1			52.0-156		12/27/2021 22:05	WG1794783

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lead,Dissolved	U		2.99	6.00	1	12/27/2021 11:14	WG1793893

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	362		31.6	100	1	12/19/2021 16:28	WG1791627
(S) a,a,a-Trifluorotoluene(FID)	94.7			78.0-120		12/19/2021 16:28	WG1791627

- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	12/20/2021 05:00	WG1792004
Toluene	1.54		0.278	1.00	1	12/20/2021 05:00	WG1792004
Ethylbenzene	2.16		0.137	1.00	1	12/20/2021 05:00	WG1792004
Total Xylenes	1.89	J	0.174	3.00	1	12/20/2021 05:00	WG1792004
Methyl tert-butyl ether	U		0.101	1.00	1	12/20/2021 05:00	WG1792004
(S) Toluene-d8	117			80.0-120		12/20/2021 05:00	WG1792004
(S) 4-Bromofluorobenzene	108			77.0-126		12/20/2021 05:00	WG1792004
(S) 1,2-Dichloroethane-d4	116			70.0-130		12/20/2021 05:00	WG1792004

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	171	J	66.7	200	1	12/27/2021 22:30	WG1794783
Residual Range Organics (RRO)	U		83.3	250	1	12/27/2021 22:30	WG1794783
(S) o-Terphenyl	100			52.0-156		12/27/2021 22:30	WG1794783

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lead,Dissolved	U		2.99	6.00	1	12/27/2021 10:36	WG1793893

1 Cp

2 Tc

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	457		31.6	100	1	12/19/2021 16:51	WG1791627
(S) a,a,a-Trifluorotoluene(FID)	94.8			78.0-120		12/19/2021 16:51	WG1791627

3 Ss

4 Cn

5 Sr

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	0.896	J	0.0941	1.00	1	12/20/2021 05:21	WG1792004
Toluene	0.343	J	0.278	1.00	1	12/20/2021 05:21	WG1792004
Ethylbenzene	5.67		0.137	1.00	1	12/20/2021 05:21	WG1792004
Total Xylenes	0.609	J	0.174	3.00	1	12/20/2021 05:21	WG1792004
Methyl tert-butyl ether	U		0.101	1.00	1	12/20/2021 05:21	WG1792004
(S) Toluene-d8	115			80.0-120		12/20/2021 05:21	WG1792004
(S) 4-Bromofluorobenzene	103			77.0-126		12/20/2021 05:21	WG1792004
(S) 1,2-Dichloroethane-d4	112			70.0-130		12/20/2021 05:21	WG1792004

6 Qc

7 Gl

8 Al

9 Sc

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	129	J	66.7	200	1	12/27/2021 22:55	WG1794783
Residual Range Organics (RRO)	U		83.3	250	1	12/27/2021 22:55	WG1794783
(S) o-Terphenyl	100			52.0-156		12/27/2021 22:55	WG1794783

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lead,Dissolved	U		2.99	6.00	1	12/27/2021 11:16	WG1793893

1 Cp

2 Tc

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	12/19/2021 17:14	WG1791627
(S) a,a,a-Trifluorotoluene(FID)	105			78.0-120		12/19/2021 17:14	WG1791627

3 Ss

4 Cn

5 Sr

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	12/20/2021 05:42	WG1792004
Toluene	U		0.278	1.00	1	12/20/2021 05:42	WG1792004
Ethylbenzene	U		0.137	1.00	1	12/20/2021 05:42	WG1792004
Total Xylenes	U		0.174	3.00	1	12/20/2021 05:42	WG1792004
Methyl tert-butyl ether	U		0.101	1.00	1	12/20/2021 05:42	WG1792004
(S) Toluene-d8	112			80.0-120		12/20/2021 05:42	WG1792004
(S) 4-Bromofluorobenzene	105			77.0-126		12/20/2021 05:42	WG1792004
(S) 1,2-Dichloroethane-d4	115			70.0-130		12/20/2021 05:42	WG1792004

6 Qc

7 Gl

8 Al

9 Sc

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	83.6	J	66.7	200	1	12/29/2021 11:25	WG1795076
Residual Range Organics (RRO)	101	J	83.3	250	1	12/29/2021 11:25	WG1795076
(S) o-Terphenyl	102			52.0-156		12/29/2021 11:25	WG1795076

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lead,Dissolved	U		2.99	6.00	1	12/27/2021 11:19	WG1793893

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	12/19/2021 17:37	WG1791627
(S) a,a,a-Trifluorotoluene(FID)	106			78.0-120		12/19/2021 17:37	WG1791627

- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	12/20/2021 06:03	WG1792004
Toluene	U		0.278	1.00	1	12/20/2021 06:03	WG1792004
Ethylbenzene	U		0.137	1.00	1	12/20/2021 06:03	WG1792004
Total Xylenes	U		0.174	3.00	1	12/20/2021 06:03	WG1792004
Methyl tert-butyl ether	U		0.101	1.00	1	12/20/2021 06:03	WG1792004
(S) Toluene-d8	118			80.0-120		12/20/2021 06:03	WG1792004
(S) 4-Bromofluorobenzene	109			77.0-126		12/20/2021 06:03	WG1792004
(S) 1,2-Dichloroethane-d4	118			70.0-130		12/20/2021 06:03	WG1792004

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	76.8	J	66.7	200	1	12/28/2021 00:09	WG1794783
Residual Range Organics (RRO)	84.9	J	83.3	250	1	12/28/2021 00:09	WG1794783
(S) o-Terphenyl	88.4			52.0-156		12/28/2021 00:09	WG1794783

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lead,Dissolved	U		2.99	6.00	1	12/27/2021 11:22	WG1793893



Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	7390		31.6	100	1	12/19/2021 18:00	WG1791627
(S) a,a,a-Trifluorotoluene(FID)	69.9	<u>J2</u>		78.0-120		12/19/2021 18:00	WG1791627

Sample Narrative:

L1443594-10 WG1791627: Surrogate failure due to matrix interference.

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	0.413	<u>J</u>	0.0941	1.00	1	12/20/2021 06:25	WG1792004
Toluene	9.46		0.278	1.00	1	12/20/2021 06:25	WG1792004
Ethylbenzene	337		1.37	10.0	10	12/23/2021 18:28	WG1794378
Total Xylenes	1240		1.74	30.0	10	12/23/2021 18:28	WG1794378
Methyl tert-butyl ether	U		0.101	1.00	1	12/20/2021 06:25	WG1792004
(S) Toluene-d8	115			80.0-120		12/20/2021 06:25	WG1792004
(S) Toluene-d8	99.1			80.0-120		12/23/2021 18:28	WG1794378
(S) 4-Bromofluorobenzene	112			77.0-126		12/20/2021 06:25	WG1792004
(S) 4-Bromofluorobenzene	106			77.0-126		12/23/2021 18:28	WG1794378
(S) 1,2-Dichloroethane-d4	114			70.0-130		12/20/2021 06:25	WG1792004
(S) 1,2-Dichloroethane-d4	104			70.0-130		12/23/2021 18:28	WG1794378



Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	686		66.7	200	1	12/28/2021 22:03	WG1795076
Residual Range Organics (RRO)	114	<u>J</u>	83.3	250	1	12/28/2021 22:03	WG1795076
(S) o-Terphenyl	82.6			52.0-156		12/28/2021 22:03	WG1795076

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lead,Dissolved	U		2.99	6.00	1	01/06/2022 02:36	WG1796943

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	406	<u>B</u>	31.6	100	1	12/21/2021 21:00	WG1792757
(S) a,a,a-Trifluorotoluene(FID)	91.5			78.0-120		12/21/2021 21:00	WG1792757

- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	12/20/2021 06:46	WG1792004
Toluene	U		0.278	1.00	1	12/20/2021 06:46	WG1792004
Ethylbenzene	U		0.137	1.00	1	12/23/2021 17:48	WG1794378
Total Xylenes	U		0.174	3.00	1	12/23/2021 17:48	WG1794378
Methyl tert-butyl ether	U		0.101	1.00	1	12/20/2021 06:46	WG1792004
(S) Toluene-d8	116			80.0-120		12/20/2021 06:46	WG1792004
(S) Toluene-d8	97.9			80.0-120		12/23/2021 17:48	WG1794378
(S) 4-Bromofluorobenzene	113			77.0-126		12/20/2021 06:46	WG1792004
(S) 4-Bromofluorobenzene	107			77.0-126		12/23/2021 17:48	WG1794378
(S) 1,2-Dichloroethane-d4	113			70.0-130		12/20/2021 06:46	WG1792004
(S) 1,2-Dichloroethane-d4	108			70.0-130		12/23/2021 17:48	WG1794378

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	491		66.7	200	1	12/27/2021 12:53	WG1794299
Residual Range Organics (RRO)	U		83.3	250	1	12/27/2021 12:53	WG1794299
(S) o-Terphenyl	104			52.0-156		12/27/2021 12:53	WG1794299

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lead,Dissolved	U		2.99	6.00	1	01/06/2022 02:39	WG1796943

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	12/19/2021 18:47	WG1791627
(S) a,a,a-Trifluorotoluene(FID)	106			78.0-120		12/19/2021 18:47	WG1791627

- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	12/20/2021 07:07	WG1792004
Toluene	U		0.278	1.00	1	12/20/2021 07:07	WG1792004
Ethylbenzene	U		0.137	1.00	1	12/23/2021 18:08	WG1794378
Total Xylenes	U		0.174	3.00	1	12/23/2021 18:08	WG1794378
Methyl tert-butyl ether	U		0.101	1.00	1	12/20/2021 07:07	WG1792004
(S) Toluene-d8	119			80.0-120		12/20/2021 07:07	WG1792004
(S) Toluene-d8	104			80.0-120		12/23/2021 18:08	WG1794378
(S) 4-Bromofluorobenzene	107			77.0-126		12/20/2021 07:07	WG1792004
(S) 4-Bromofluorobenzene	107			77.0-126		12/23/2021 18:08	WG1794378
(S) 1,2-Dichloroethane-d4	116			70.0-130		12/20/2021 07:07	WG1792004
(S) 1,2-Dichloroethane-d4	107			70.0-130		12/23/2021 18:08	WG1794378

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	162	J	66.7	200	1	12/27/2021 13:19	WG1794299
Residual Range Organics (RRO)	U		83.3	250	1	12/27/2021 13:19	WG1794299
(S) o-Terphenyl	112			52.0-156		12/27/2021 13:19	WG1794299

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lead,Dissolved	U		2.99	6.00	1	01/06/2022 02:42	WG1796943

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	2800		31.6	100	1	12/19/2021 19:10	WG1791627
(S) a,a,a-Trifluorotoluene(FID)	95.1			78.0-120		12/19/2021 19:10	WG1791627

- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	12/20/2021 07:28	WG1792004
Toluene	40.9		0.278	1.00	1	12/20/2021 07:28	WG1792004
Ethylbenzene	68.9		0.137	1.00	1	12/20/2021 07:28	WG1792004
Total Xylenes	382		0.174	3.00	1	12/20/2021 07:28	WG1792004
Methyl tert-butyl ether	U		0.101	1.00	1	12/20/2021 07:28	WG1792004
(S) Toluene-d8	116			80.0-120		12/20/2021 07:28	WG1792004
(S) 4-Bromofluorobenzene	110			77.0-126		12/20/2021 07:28	WG1792004
(S) 1,2-Dichloroethane-d4	113			70.0-130		12/20/2021 07:28	WG1792004

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	411		66.7	200	1	12/28/2021 00:35	WG1794783
Residual Range Organics (RRO)	U		83.3	250	1	12/28/2021 00:35	WG1794783
(S) o-Terphenyl	111			52.0-156		12/28/2021 00:35	WG1794783

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lead,Dissolved	U		2.99	6.00	1	01/06/2022 02:44	WG1796943

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	427		31.6	100	1	12/19/2021 19:33	WG1791627
(S) a,a,a-Trifluorotoluene(FID)	95.0			78.0-120		12/19/2021 19:33	WG1791627

- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	12/20/2021 07:49	WG1792004
Toluene	U		0.278	1.00	1	12/20/2021 07:49	WG1792004
Ethylbenzene	0.791	J	0.137	1.00	1	12/20/2021 07:49	WG1792004
Total Xylenes	3.96		0.174	3.00	1	12/20/2021 07:49	WG1792004
Methyl tert-butyl ether	U		0.101	1.00	1	12/20/2021 07:49	WG1792004
(S) Toluene-d8	119			80.0-120		12/20/2021 07:49	WG1792004
(S) 4-Bromofluorobenzene	106			77.0-126		12/20/2021 07:49	WG1792004
(S) 1,2-Dichloroethane-d4	115			70.0-130		12/20/2021 07:49	WG1792004

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	174	J	66.7	200	1	12/28/2021 01:00	WG1794783
Residual Range Organics (RRO)	U		83.3	250	1	12/28/2021 01:00	WG1794783
(S) o-Terphenyl	107			52.0-156		12/28/2021 01:00	WG1794783

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lead,Dissolved	U		2.99	6.00	1	01/06/2022 02:53	WG1796943

1 Cp

2 Tc

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	12/19/2021 19:56	WG1791627
(S) a,a,a-Trifluorotoluene(FID)	105			78.0-120		12/19/2021 19:56	WG1791627

3 Ss

4 Cn

5 Sr

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	12/20/2021 08:10	WG1792004
Toluene	U		0.278	1.00	1	12/20/2021 08:10	WG1792004
Ethylbenzene	U		0.137	1.00	1	12/20/2021 08:10	WG1792004
Total Xylenes	0.278	J	0.174	3.00	1	12/20/2021 08:10	WG1792004
Methyl tert-butyl ether	U		0.101	1.00	1	12/20/2021 08:10	WG1792004
(S) Toluene-d8	118			80.0-120		12/20/2021 08:10	WG1792004
(S) 4-Bromofluorobenzene	106			77.0-126		12/20/2021 08:10	WG1792004
(S) 1,2-Dichloroethane-d4	112			70.0-130		12/20/2021 08:10	WG1792004

6 Qc

7 Gl

8 Al

9 Sc

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	U		66.7	200	1	12/28/2021 01:25	WG1794783
Residual Range Organics (RRO)	U		83.3	250	1	12/28/2021 01:25	WG1794783
(S) o-Terphenyl	101			52.0-156		12/28/2021 01:25	WG1794783

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lead,Dissolved	U		2.99	6.00	1	01/06/2022 02:56	WG1796943

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	12/19/2021 20:19	WG1791627
(S) a,a,a-Trifluorotoluene(FID)	107			78.0-120		12/19/2021 20:19	WG1791627

6 Qc
7 Gl
8 Al
9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	12/20/2021 08:31	WG1792004
Toluene	U		0.278	1.00	1	12/20/2021 08:31	WG1792004
Ethylbenzene	U		0.137	1.00	1	12/20/2021 08:31	WG1792004
Total Xylenes	U		0.174	3.00	1	12/20/2021 08:31	WG1792004
Methyl tert-butyl ether	U		0.101	1.00	1	12/20/2021 08:31	WG1792004
(S) Toluene-d8	119			80.0-120		12/20/2021 08:31	WG1792004
(S) 4-Bromofluorobenzene	104			77.0-126		12/20/2021 08:31	WG1792004
(S) 1,2-Dichloroethane-d4	115			70.0-130		12/20/2021 08:31	WG1792004

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	U		66.7	200	1	12/28/2021 01:49	WG1794783
Residual Range Organics (RRO)	U		83.3	250	1	12/28/2021 01:49	WG1794783
(S) o-Terphenyl	80.5			52.0-156		12/28/2021 01:49	WG1794783

Metals (ICP) by Method 6010D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Lead,Dissolved	U		2.99	6.00	1	01/06/2022 02:58	WG1796943

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	12/19/2021 20:43	WG1791627
(S) a,a,a-Trifluorotoluene(FID)	107			78.0-120		12/19/2021 20:43	WG1791627

- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	12/20/2021 08:52	WG1792004
Toluene	U		0.278	1.00	1	12/20/2021 08:52	WG1792004
Ethylbenzene	U		0.137	1.00	1	12/20/2021 08:52	WG1792004
Total Xylenes	U		0.174	3.00	1	12/20/2021 08:52	WG1792004
Methyl tert-butyl ether	U		0.101	1.00	1	12/20/2021 08:52	WG1792004
(S) Toluene-d8	117			80.0-120		12/20/2021 08:52	WG1792004
(S) 4-Bromofluorobenzene	104			77.0-126		12/20/2021 08:52	WG1792004
(S) 1,2-Dichloroethane-d4	115			70.0-130		12/20/2021 08:52	WG1792004

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	89.7	J	66.7	200	1	12/28/2021 22:30	WG1795076
Residual Range Organics (RRO)	178	J	83.3	250	1	12/28/2021 22:30	WG1795076
(S) o-Terphenyl	73.2			52.0-156		12/28/2021 22:30	WG1795076

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lead,Dissolved	U		2.99	6.00	1	01/06/2022 03:01	WG1796943

1 Cp

2 Tc

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	12/19/2021 21:06	WG1791627
(S) a,a,a-Trifluorotoluene(FID)	107			78.0-120		12/19/2021 21:06	WG1791627

3 Ss

4 Cn

5 Sr

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	12/20/2021 09:13	WG1792004
Toluene	U		0.278	1.00	1	12/20/2021 09:13	WG1792004
Ethylbenzene	U		0.137	1.00	1	12/20/2021 09:13	WG1792004
Total Xylenes	U		0.174	3.00	1	12/20/2021 09:13	WG1792004
Methyl tert-butyl ether	U		0.101	1.00	1	12/20/2021 09:13	WG1792004
(S) Toluene-d8	118			80.0-120		12/20/2021 09:13	WG1792004
(S) 4-Bromofluorobenzene	101			77.0-126		12/20/2021 09:13	WG1792004
(S) 1,2-Dichloroethane-d4	118			70.0-130		12/20/2021 09:13	WG1792004

6 Qc

7 Gl

8 Al

9 Sc

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	70.0	J	66.7	200	1	12/28/2021 02:13	WG1794783
Residual Range Organics (RRO)	U		83.3	250	1	12/28/2021 02:13	WG1794783
(S) o-Terphenyl	85.3			52.0-156		12/28/2021 02:13	WG1794783

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lead,Dissolved	U		2.99	6.00	1	01/06/2022 03:04	WG1796943

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	12/20/2021 20:27	WG1792128
(S) a,a,a-Trifluorotoluene(FID)	93.9			78.0-120		12/20/2021 20:27	WG1792128

- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	12/20/2021 09:42	WG1792004
Toluene	U		0.278	1.00	1	12/20/2021 09:42	WG1792004
Ethylbenzene	U		0.137	1.00	1	12/20/2021 09:42	WG1792004
Total Xylenes	U		0.174	3.00	1	12/20/2021 09:42	WG1792004
Methyl tert-butyl ether	U		0.101	1.00	1	12/20/2021 09:42	WG1792004
(S) Toluene-d8	119			80.0-120		12/20/2021 09:42	WG1792004
(S) 4-Bromofluorobenzene	106			77.0-126		12/20/2021 09:42	WG1792004
(S) 1,2-Dichloroethane-d4	121			70.0-130		12/20/2021 09:42	WG1792004

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	U		66.7	200	1	12/27/2021 13:45	WG1794299
Residual Range Organics (RRO)	U		83.3	250	1	12/27/2021 13:45	WG1794299
(S) o-Terphenyl	94.7			52.0-156		12/27/2021 13:45	WG1794299

Method Blank (MB)

(MB) R3745124-1 12/27/21 10:31

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Lead,Dissolved	U		2.99	6.00

1 Cp

2 Tc

3 Ss

Laboratory Control Sample (LCS)

(LCS) R3745124-5 12/27/21 16:10

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Lead,Dissolved	1000	1020	102	80.0-120	

4 Cn

5 Sr

L1443594-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1443594-07 12/27/21 10:36 • (MS) R3745124-3 12/27/21 10:41 • (MSD) R3745124-4 12/27/21 10:44

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Lead,Dissolved	1000	U	993	993	99.3	99.3	1	75.0-125			0.0334	20

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3747913-1 01/06/22 02:19

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Lead,Dissolved	U		2.99	6.00

¹Cp

²Tc

³Ss

Laboratory Control Sample (LCS)

(LCS) R3747913-2 01/06/22 02:22

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Lead,Dissolved	1000	992	99.2	80.0-120	

⁴Cn

⁵Sr

L1444256-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1444256-07 01/06/22 02:25 • (MS) R3747913-4 01/06/22 02:30 • (MSD) R3747913-5 01/06/22 02:33

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Lead,Dissolved	1000	U	1050	1050	105	105	1	75.0-125			0.312	20

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3743045-2 12/19/21 12:42

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	U		31.6	100
(S) a,a,a-Trifluorotoluene(FID)	107			78.0-120

Laboratory Control Sample (LCS)

(LCS) R3743045-1 12/19/21 11:56

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5500	5800	105	70.0-124	
(S) a,a,a-Trifluorotoluene(FID)			94.8	78.0-120	

L1443594-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1443594-07 12/19/21 16:51 • (MS) R3743045-3 12/19/21 21:29 • (MSD) R3743045-4 12/19/21 21:52

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Gasoline Range Organics-NWTPH	5500	457	4020	4090	64.8	66.1	1	10.0-155			1.73	21
(S) a,a,a-Trifluorotoluene(FID)					92.0	91.0		78.0-120				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3744565-2 12/20/21 17:30

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	89.1	↓	31.6	100
(S) a,a,a-Trifluorotoluene(FID)	92.1			78.0-120

Laboratory Control Sample (LCS)

(LCS) R3744565-1 12/20/21 16:03

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5500	5640	103	70.0-124	
(S) a,a,a-Trifluorotoluene(FID)			100	78.0-120	

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Method Blank (MB)

(MB) R3743512-3 12/21/21 16:18

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	61.5	↓	31.6	100
(S) a,a,a-Trifluorotoluene(FID)	92.4			78.0-120

Laboratory Control Sample (LCS)

(LCS) R3743512-2 12/21/21 15:35

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5500	5520	100	70.0-124	
(S) a,a,a-Trifluorotoluene(FID)			101	78.0-120	

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Method Blank (MB)

(MB) R3744467-2 12/20/21 02:53

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Benzene	U		0.0941	1.00
Ethylbenzene	U		0.137	1.00
Methyl tert-butyl ether	U		0.101	1.00
Toluene	U		0.278	1.00
Xylenes, Total	U		0.174	3.00
(S) Toluene-d8	113			80.0-120
(S) 4-Bromofluorobenzene	107			77.0-126
(S) 1,2-Dichloroethane-d4	115			70.0-130

Laboratory Control Sample (LCS)

(LCS) R3744467-1 12/20/21 02:11

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Benzene	5.00	5.68	114	70.0-123	
Ethylbenzene	5.00	5.52	110	79.0-123	
Methyl tert-butyl ether	5.00	5.51	110	68.0-125	
Toluene	5.00	5.32	106	79.0-120	
Xylenes, Total	15.0	16.4	109	79.0-123	
(S) Toluene-d8			114	80.0-120	
(S) 4-Bromofluorobenzene			107	77.0-126	
(S) 1,2-Dichloroethane-d4			110	70.0-130	

L1443594-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1443594-07 12/20/21 05:21 • (MS) R3744467-3 12/20/21 09:56 • (MSD) R3744467-4 12/20/21 10:17

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Benzene	5.00	0.896	6.16	6.40	105	110	1	17.0-158			3.82	27
Ethylbenzene	5.00	5.67	11.0	11.7	107	121	1	30.0-155			6.17	27
Methyl tert-butyl ether	5.00	U	5.21	5.38	104	108	1	28.0-150			3.21	29
Toluene	5.00	0.343	5.12	5.70	95.5	107	1	26.0-154			10.7	28
Xylenes, Total	15.0	0.609	14.7	16.3	93.9	105	1	29.0-154			10.3	28
(S) Toluene-d8					114	116		80.0-120				
(S) 4-Bromofluorobenzene					106	108		77.0-126				
(S) 1,2-Dichloroethane-d4					117	111		70.0-130				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3745077-3 12/23/21 09:56

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Ethylbenzene	U		0.137	1.00
Xylenes, Total	U		0.174	3.00
(S) Toluene-d8	105			80.0-120
(S) 4-Bromofluorobenzene	106			77.0-126
(S) 1,2-Dichloroethane-d4	102			70.0-130

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3745077-1 12/23/21 08:33 • (LCSD) R3745077-2 12/23/21 08:54

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Ethylbenzene	5.00	5.37	5.25	107	105	79.0-123			2.26	20
Xylenes, Total	15.0	15.9	15.7	106	105	79.0-123			1.27	20
(S) Toluene-d8				102	101	80.0-120				
(S) 4-Bromofluorobenzene				102	102	77.0-126				
(S) 1,2-Dichloroethane-d4				102	102	70.0-130				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3745450-1 12/27/21 09:51

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Diesel Range Organics (DRO)	U		66.7	200
Residual Range Organics (RRO)	U		83.3	250
(S) o-Terphenyl	93.0			52.0-156

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3745450-2 12/27/21 10:16 • (LCSD) R3745450-3 12/27/21 10:42

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Diesel Range Organics (DRO)	1500	1520	1530	101	102	50.0-150			0.656	20
(S) o-Terphenyl				116	118	52.0-156				

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Method Blank (MB)

(MB) R3745451-1 12/27/21 20:49

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Diesel Range Organics (DRO)	U		66.7	200
Residual Range Organics (RRO)	U		83.3	250
<i>(S) o-Terphenyl</i>	100			52.0-156

Laboratory Control Sample (LCS)

(LCS) R3745451-2 12/27/21 21:14

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Diesel Range Organics (DRO)	1500	1510	101	50.0-150	
<i>(S) o-Terphenyl</i>			116	52.0-156	

L1443594-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1443594-07 12/27/21 22:55 • (MS) R3745451-3 12/27/21 23:19 • (MSD) R3745451-4 12/27/21 23:44

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Diesel Range Organics (DRO)	1430	129	1620	1630	104	105	1	50.0-150			0.615	20
<i>(S) o-Terphenyl</i>					118	123		52.0-156				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3745609-1 12/28/21 12:48

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Diesel Range Organics (DRO)	U		66.7	200
Residual Range Organics (RRO)	U		83.3	250
<i>(S) o-Terphenyl</i>	71.0			52.0-156

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3745609-2 12/28/21 13:15 • (LCSD) R3745609-3 12/28/21 13:41

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Diesel Range Organics (DRO)	1500	1560	1610	104	107	50.0-150			3.15	20
<i>(S) o-Terphenyl</i>				85.0	75.0	52.0-156				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3743483-3 12/21/21 10:01

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Benzo(a)anthracene	U		0.0203	0.0500
Benzo(a)pyrene	U		0.0184	0.0500
Benzo(b)fluoranthene	U		0.0168	0.0500
Benzo(k)fluoranthene	U		0.0202	0.0500
Chrysene	U		0.0179	0.0500
Dibenz(a,h)anthracene	U		0.0160	0.0500
Indeno(1,2,3-cd)pyrene	U		0.0158	0.0500
Naphthalene	U		0.0917	0.250
1-Methylnaphthalene	U		0.0687	0.250
2-Methylnaphthalene	U		0.0674	0.250
(S) Nitrobenzene-d5	106			31.0-160
(S) 2-Fluorobiphenyl	100			48.0-148
(S) p-Terphenyl-d14	99.0			37.0-146

Method Blank (MB)

(MB) R3743812-1 12/21/21 21:42

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Benzo(a)anthracene	U		0.0203	0.0500
Benzo(a)pyrene	U		0.0184	0.0500
Benzo(b)fluoranthene	U		0.0168	0.0500
Benzo(k)fluoranthene	U		0.0202	0.0500
Chrysene	U		0.0179	0.0500
Dibenz(a,h)anthracene	U		0.0160	0.0500
Indeno(1,2,3-cd)pyrene	U		0.0158	0.0500
Naphthalene	U		0.0917	0.250
1-Methylnaphthalene	U		0.0687	0.250
2-Methylnaphthalene	U		0.0674	0.250
(S) Nitrobenzene-d5	110			31.0-160
(S) 2-Fluorobiphenyl	103			48.0-148
(S) p-Terphenyl-d14	110			37.0-146

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3743483-1 12/21/21 09:26 • (LCSD) R3743483-2 12/21/21 09:43

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	<u>LCS Qualifier</u>	<u>LCSD Qualifier</u>	RPD %	RPD Limits %
Benzo(a)anthracene	2.00	1.88	1.88	94.0	94.0	61.0-140			0.000	20
Benzo(a)pyrene	2.00	2.05	2.08	103	104	60.0-143			1.45	20
Benzo(b)fluoranthene	2.00	1.88	1.92	94.0	96.0	58.0-141			2.11	20
Benzo(k)fluoranthene	2.00	1.93	1.95	96.5	97.5	58.0-148			1.03	20
Chrysene	2.00	2.00	2.02	100	101	64.0-144			0.995	20
Dibenz(a,h)anthracene	2.00	1.58	1.64	79.0	82.0	52.0-155			3.73	20
Indeno(1,2,3-cd)pyrene	2.00	1.77	1.84	88.5	92.0	54.0-153			3.88	20
Naphthalene	2.00	2.01	2.05	100	103	61.0-137			1.97	20
1-Methylnaphthalene	2.00	1.99	2.03	99.5	102	66.0-142			1.99	20
2-Methylnaphthalene	2.00	2.06	2.10	103	105	62.0-136			1.92	20
<i>(S) Nitrobenzene-d5</i>				105	106	31.0-160				
<i>(S) 2-Fluorobiphenyl</i>				99.5	103	48.0-148				
<i>(S) p-Terphenyl-d14</i>				96.5	99.0	37.0-146				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

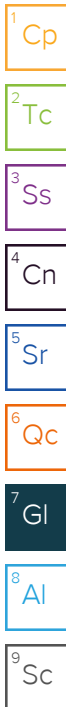
Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier Description

B	The same analyte is found in the associated blank.
J	The identification of the analyte is acceptable; the reported value is an estimate.
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits.
J2	Surrogate recovery limits have been exceeded; values are outside lower control limits.



ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico ¹	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	KY90010	South Carolina	84004002
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas ⁵	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Company Name/Address: **Arcadis - Chevron - WA**
 1100 Olive Way
 Suite 800
 Seattle, WA 98101

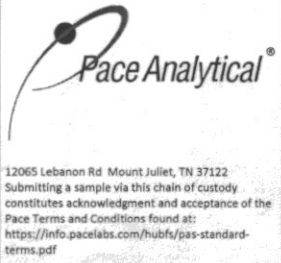
Billing Information:
 Attn: Accounts Payable
 630 Plaza Dr., Ste. 600
 Highlands Ranch, CO 80129

Analysis / Container / Preservative

Chain of Custody Page 1 of 3

Report to: **ADA HAMILTON / Amanda Bowring**
 Email To: **ALEXANDER.LAWS**
 amanda.bowring@arcadis.com;environmentDM

Project Description: **93124 97502**
 City/State Collected: **SEDRU-WOLLEY, WA** Please Circle: **Ⓟ** MT CT ET



Phone: **206-325-5254** Client Project # **30063848** Lab Project # **CHEVARCWA-93124-97502**

Collected by (print): **J. SEPIOL / S. BROOKS** Site/Facility ID # **640 METCALF 1050 HARRISON AVE, ST** P.O. #

Collected by (signature): *[Signature]* Rush? (Lab MUST Be Notified)
 ___ Same Day ___ Five Day ___ Next Day ___ 5 Day (Rad Only) ___ Two Day ___ 10 Day (Rad Only) ___ Three Day

Quote # _____ Date Results Needed _____

Packed on Ice N ___ Y No. of Cntrs _____

SDG # **11043594**

Tabl **D181**

Acctnum: **CHEVARCWA**
 Template: **T193097**
 Prelogin: **P866288**
 PM: **110 - Brian Ford**
 PB: **TN 8-17-21**

Shipped Via: _____

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	BTEXM/EDB/EDC 8260D 40mlAmb-HCI	NWTPHDX LVINOSGT 40mlAmb-HCI-BT	NWTPHGX 40mlAmb HCl	Total Pb 6010 250mlHDPE-HNO3	NWTPH-GX 40ml HCl	NWTPH-Dx 40ml HCl	BTEX + MTBE BY 8260 40ml HCl	DISS. LEAD BY 6000 250ml NO-PRES	CPAHS 8270E 40ml NO PRES
MW-4-W-20211214	G	GW	—	12/14/21	1440	9									
MW-5-W-20211216	G	GW	—	12/16/21	0915	9									
MW-6-W-20211214	G	GW	—	12/14/21	1415	9									
MW-7-W-20211215	G	GW	—	12/15/21	1455	11									
MW-8-W-20211215	G	GW	—	12/15/21	1535	9									
MW-10-W-20211215	G	GW	—	12/15/21	1155	9									
MW-11-W-20211215	G	GW	—	12/15/21	1130	9									
MW-12-W-20211216	G	GW	—	12/16/21	1028	9									
MW-13-W-20211215	G	GW	—	12/15/21	1400	9									
MW-14-W-20211216	G	GW	—	12/16/21	0925	9									

* Matrix: SS - Soil AIR - Air F - Filter GW - Groundwater B - Bioassay WW - WasteWater DW - Drinking Water OT - Other

Remarks: _____

Samples returned via: UPS FedEx Courier _____ Tracking # _____

pH _____ Temp _____ Flow _____ Other _____

Sample Receipt Checklist:
 COC Seal Present/Intact: NP Y N
 COC Signed/Accurate: Y N
 Bottles arrive intact: Y N
 Correct bottles used: Y N
 Sufficient volume sent: Y N
 If Applicable:
 VOA Zero Headspace: Y N
 Preservation Correct/Checked: Y N
 RAD Screen <0.5 mR/hr: Y N

Relinquished by: (Signature) <i>[Signature]</i>	Date: 12/16/21	Time: 1400	Received by: (Signature) _____	Trip Blank Received: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No (CL) MeOH TBR
Relinquished by: (Signature) _____	Date: _____	Time: _____	Received by: (Signature) _____	Temp: 19.1 C Bottles Received: _____
Relinquished by: (Signature) _____	Date: _____	Time: _____	Received for lab by: (Signature) <i>[Signature]</i>	Date: 12/17/21 Time: 0900 Hold: _____ Condition: NCF / OK

**1100 Olive Way
Suite 800
Seattle, WA 98101**

**Report to:
Ada Hamilton/Alex Laws**

**Project Description:
97502**

**Email To:
alexander.laws@arcadis.com; Ada.Hamilton@ar**

Phone: 206-325-5254

**Client Project #
30064310 07.21-Plan**

**Lab Project #
CHEVARCWA-97502**

**Collected by (print):
J. SEPIC / S. BROOKS**

**Site/Facility ID #
640 METCALF ST SEDRO-**

P.O. #

Collected by (signature):
[Signature]

Rush? (Lab MUST Be Notified)
 Same Day Five Day
 Next Day 5 Day (Rad Only)
 Two Day 10 Day (Rad Only)
 Three Day

Quote #
Date Results Needed

Immediately Packed on Ice N Y

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs
MW-15-W-20211214	G	GW	—	12/14/21	1325	9
MW-16-W-20211214	G	GW	—	12/14/21	1220	9
MW-17-W-20211215	G	GW	—	12/15/21	1345	9
MW-18-W-20211215	G	GW	—	12/15/21	0940	9
MW-19-W-20211215	G	GW	—	12/15/21	0915	9
MW-20-W-20211215	G	GW	—	12/15/21	1035 ⁵⁰	9
MW-21-W-20211216	G	GW	—	12/16/21	1045	9
DUP-1-121521	G	GW	—	12/15/21	—	9
MS-1-121521	G	GW	—	12/15/21	1130	9
MSD-1-121521	G	GW	—	12/15/21	1130	9

Analysis / Container / Preservative	Pres Chk
BTEX 8260D 40mlAmb-HCl	
Diss Pb 6010 250mlHDPE-NoPres	
MTBE 8260D 40mlAmb-HCl	
NWTPHDX no silica 40mlAmb-HCl-BT	
NWTPHGX 40mlAmb HCl	
DRO+HO NWTPH-Dx 40ml HCl	
BTX+MTBE BY 8260 40ml HCl	
DISS. LEAD BY 6010 250ml NO-PRES	

Pace Analytical
 12065 Lebanon Rd Mount Juliet, TN 37122
 Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at:
<https://info.pacelabs.com/hubfs/pas-standard-terms.pdf>

SDG # 4443594
Table #
Acctnum: CHEVARCWA
Template: T199825
Prelogin: P892344
PM: 110 - Brian Ford
PB: NS 12/16/21
Shipped Via:
 Remarks Sample # (lab only)

*** Matrix:**
 SS - Soil AIR - Air F - Filter
 GW - Groundwater B - Bioassay
 WW - WasteWater
 DW - Drinking Water
 OT - Other

Remarks:
 MW-20-W-20211215 → Time 1035
 pH _____ Temp _____
 Flow _____ Other _____
Samples returned via:
 UPS FedEx Courier **Tracking #**

Sample Receipt Checklist

COC Seal Present/Intact:	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N
COC Signed/Accurate:	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N
Bottles arrive intact:	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N
Correct bottles used:	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N
Sufficient volume sent:	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N
If Applicable	
VOA Zero Headspace:	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N
Preservation Correct/Checked:	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N
RAD Screen <0.5 mR/hr:	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N

Relinquished by: (Signature) <i>[Signature]</i>	Date: 12/16/21	Time: 1400	Received by: (Signature) <i>[Signature]</i>	Trip Blank Received: 9 (HCL/MeOH/TBR)	Temp: 19.1 °C	Bottles Received: 191	If preservation required by Login: Date/Time
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date: 12/17/21	Time: 0900	Hold:	Condition: NCF / OK

Company Name/Address:

Arcadis - Chevron - WA

1100 Olive Way
Suite 800
Seattle, WA 98101

Report to:
Ada Hamilton/Alex Laws

Project Description:
97502

Phone: 206-325-5254

Client Project #
30064310 07.21-Plan

Lab Project #
CHEVARCWA-97502

Collected by (print):
J. SEPULCHRE / S. BROOKS

Site/Facility ID #
640 METCALF ST SEDRO-

P.O. #

Collected by (signature):
[Signature]

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Immediately
Packed on Ice N Y X

No. of Cntrs

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs
MW-15 TRIP BLANK		GW				9
RS-1-121421		GW		12/14/21	1505	9
		GW				
		GW				
		GW				

Billing Information:

Attn: Accounts Payable
630 Plaza Dr., Ste. 600
Highlands Ranch, CO 80129

Pres Chk

Email To:
alexander.laws@arcadis.com; Ada.Hamilton@arcadis.com

City/State Collected:
SEDRO-WOLLEY, WA

Please Circle:
PT MT CT ET

Analysis / Container / Preservative

BTEX 8260D 40mlAmb-HCl	Diss Pb 6010 250mlHDPE-NoPres	NWTPDX no silica 40mlAmb-HCl-BT	NWTPGX 40mlAmb HCl	PAHs 8270ESIM 40mlAmb-NoPres-WT	NWTPH - Gx 40ml HCl	NWTPH - Dc 40ml HCl	BTEX-1.MTBE by 8260 40 mL HCl	Diss Lead by 6000 250ml no pres	CPAHs 8270E 40ml No pres
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Chain of Custody Page 3 of 3



12065 Lebanon Rd Mount Juliet, TN 37122
Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: <https://info.pacelabs.com/hubfs/pas-standard-terms.pdf>

SDG # 61443594
Table #
Acctnum: CHEVARCWA
Template: T199825
Prelogin: P888553
PM: 110 - Brian Ford
PB: NS 11/19/21
Shipped Via:
Remarks Sample # (lab only)

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other

Remarks:

Samples returned via:
___ UPS X FedEx ___ Courier

Tracking #

pH ___ Temp ___
Flow ___ Other ___

Sample Receipt Checklist
COC Seal Present/Intact: ___ NP X ___ N
COC Signed/Accurate: X ___ N
Bottles arrive intact: X ___ N
Correct bottles used: X ___ N
Sufficient volume sent: X ___ N
If Applicable
VOA Zero Headspace: X ___ N
Preservation Correct/Checked: X ___ N
RAD Screen <0.5 mR/hr: X ___ N

Relinquished by: (Signature) <i>[Signature]</i>	Date: 12/16/21	Time: 1400	Received by: (Signature)	Trip Blank Received: Yes/No 9 <u>X</u> / MeOH TBR	Temp: °C	Bottles Received: 191	If preservation required by Login: Date/Time
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:	Hold:	Condition: NCF <u>X</u> <u>OK</u>

h65cmh7

<u>Tracking Numbers</u>	<u>Temperature</u>
5300 4299 8279	1.7+0=1.7
5217 3307 5240	2.8+0=2.8
5433 8384 1378	1.1+0=1.1

Appendix J

Vapor Lab Data

Chevron - WA

DATA REVIEW

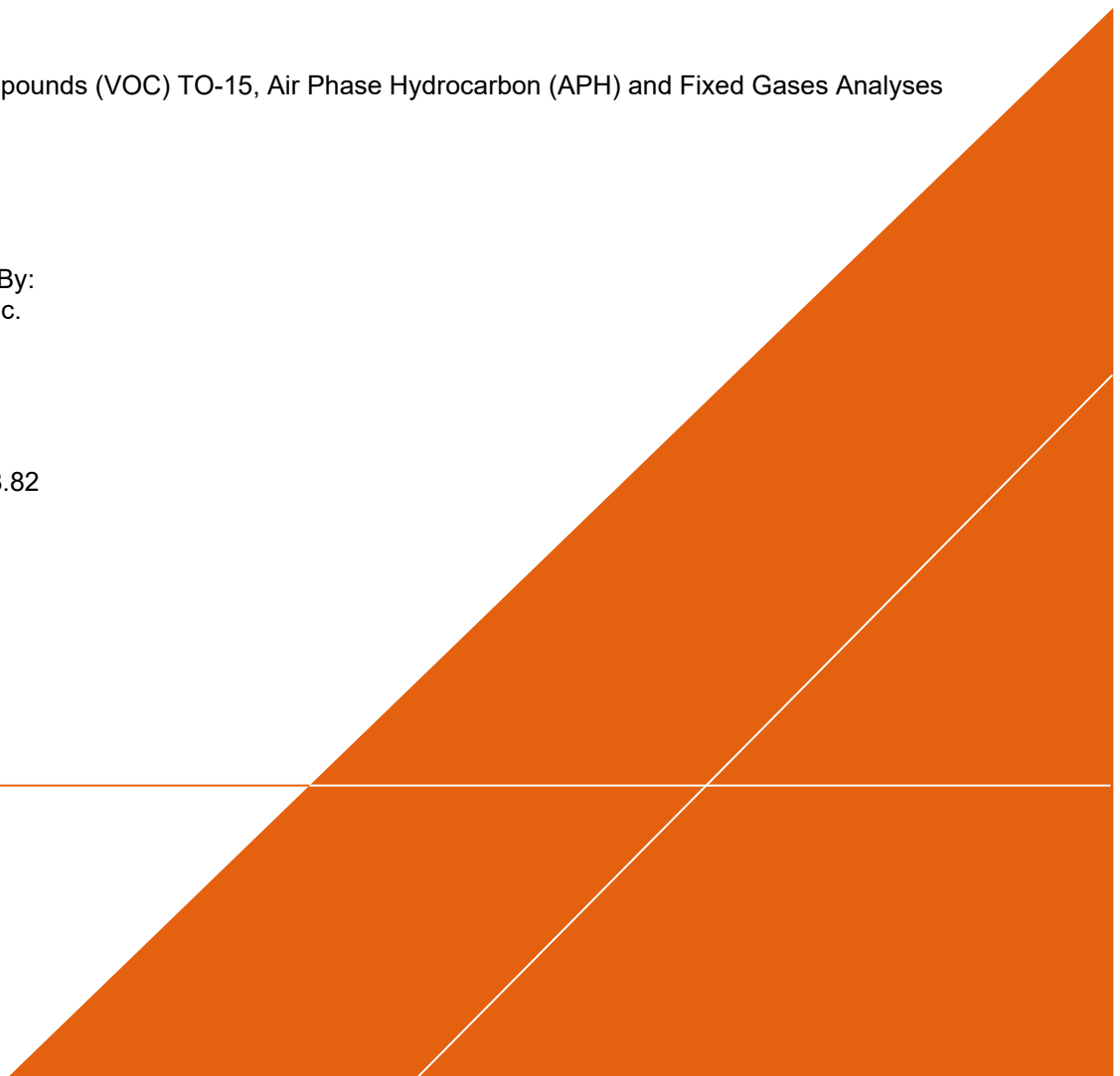
124 Ferry St Sedro Woolley

Volatile Organic Compounds (VOC) TO-15, Air Phase Hydrocarbon (APH) and Fixed Gases Analyses

SDG # 110163

Analyses Performed By:
Friedman & Bruya, Inc.

Report# 44415R
Review Level: Tier II
Project: 30064310.08.82



DATA REVIEW REPORT

SUMMARY

This data quality assessment summarizes the review of Sample Delivery Group (SDG) # 110163 for samples collected in association with the Chevron 124 Ferry St Sedro Woolley site. The review was conducted as a Tier II evaluation and included review of data package completeness. Only analytical data associated with constituents of concern were reviewed for this validation. Field documentation was not included in this review. Included with this assessment are the validation annotated sample result sheets, and chain of custody. Analyses were performed on the following samples:

SDG	Sample I. D	Lab ID	Matrix	Sample Collection Date	Parent Sample	Analysis		
						TO-15 (Full Scan)	Fixed Gases	APH
110163	VP-1-5	110163 -01	Air	10/07/2021		X	X	X
	VP-1-7	110163 -02	Air	10/07/2021		X	X	X
	VP-2-7	110163 -03	Air	10/07/2021		X	X	X
	Dup-1	110163 -04	Air	10/07/2021	VP-2-7	X	X	X
	EB-1	110163 -05	Air	10/07/2021		X	X	X

Note:

Fixed Gases- Includes Helium Analysis

APH - Air phase hydrocarbon

DATA REVIEW REPORT

ANALYTICAL DATA PACKAGE DOCUMENTATION

The table below is the evaluation of the data package completeness.

Items Reviewed	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
1. Sample receipt condition		X		X	
2. Requested analyses and sample results		X		X	
3. Master tracking list		X		X	
4. Methods of analysis		X		X	
5. Reporting limits		X		X	
6. Sample collection date		X		X	
7. Laboratory sample received date		X		X	
8. Sample preservation verification (as applicable)		X		X	
9. Sample preparation/extraction/analysis dates		X		X	
10. Fully executed Chain-of-Custody (COC) form		X		X	
11. Narrative summary of QA or sample problems provided		X		X	
12. Data Package Completeness and Compliance		X		X	

Note:

QA - Quality Assurance

DATA REVIEW REPORT

ORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) Methods TO-15 and ASTM D-1946 and MA-APH. Data were reviewed in accordance with Analysis of Volatile Organic Compounds in Air Contained in Canisters by Method TO-15; SOP No. HW-31, Revision 6.

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and had already been subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with USEPA National Functional Guidelines:

- Concentration (C) Qualifiers
 - U The compound was analyzed for but not detected. The associated value is the compound quantitation limit.
 - B The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.
- Quantitation (Q) Qualifiers
 - E The compound was quantitated above the calibration range.
 - D Concentration is based on a diluted sample analysis.
- Validation Qualifiers
 - J The compound was positively identified; however, the associated numerical value is an estimated concentration only.
 - UJ The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.
 - JN The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification. The associated numerical value is an estimated concentration only.
 - UB Compound is considered non-detect at the listed value due to associated blank contamination.
 - N The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.
 - R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

DATA REVIEW REPORT

VOLATILE ORGANIC COMPOUND (VOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation	Return Canister Pressure
USEPA TO-15	Air	30 days from collection to analysis (Canister)	Ambient Temperature	< -1" Hg

All samples were analyzed within the specified holding time and canister return pressure / vacuum criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the reporting limit (RL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the RL in the associated blanks; therefore, detected sample results were not associated with blank contamination.

3. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. The TO-15 analysis requires that all surrogates associated with the analysis exhibit a percent recovery within the laboratory-established acceptance limits.

All surrogate recoveries were within control limits.

4. Laboratory Control Sample Analysis

The LCS analysis is used to assess the accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS analysis must exhibit a percent recovery and RPD within the laboratory-established acceptance limits.

All compounds associated with the LCS analysis exhibited recoveries within the control limits.

5. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 50% for air matrix is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for air matrix.

Results for duplicate samples are summarized in the following table.

DATA REVIEW REPORT

Sample ID / Duplicate ID	Compounds	Sample Result (ug/m3)	Duplicate Result (ug/m3)	RPD
VP-2-7 / Dup-1	All Target Compounds	U	U	AC

Note:

AC = Acceptable

The results between the parent sample and field duplicate were acceptable.

6. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA REVIEW REPORT

DATA VALIDATION CHECKLIST FOR VOCs

VOCs: USEPA TO-15	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks		X		X	
C. Trip blanks	X				X
Laboratory Control Sample (LCS) %R		X		X	
Laboratory Control Sample Duplicate (LCSD)	X				X
LCS/LCSD Precision (RPD)	X				X
Matrix Spike (MS) %R	X				X
Matrix Spike Duplicate (MSD)	X				X
MS/MSD Precision (RPD)	X				X
Field/Lab Duplicate (RPD)		X		X	
Surrogate Spike Recoveries		X		X	
Dilution Factor		X		X	

Notes:

%R Percent recovery

RPD Relative percent difference

DATA REVIEW REPORT

AIR-PHASE PETROLEUM HYDROCARBONS (APH) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation	Return Canister Pressure
USEPA TO-15	Air	30 days from collection to analysis (Canister)	Ambient Temperature	< -1" Hg

All samples were analyzed within the specified holding time and canister return pressure / vacuum criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the reporting limit (RL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

All compounds associated with the QA blanks exhibited a concentration less than the MDL, with the exception of the compounds listed in the following table. Sample results less than the BAL associated with the following sample ID were qualified as listed in the following table.

Sample ID	Compound	Sample Result	Qualification
VP-1-5 VP-1-7 VP-2-7 Dup-1	APH EC9-12 aliphatic (EB)	Detected sample results >RL and <BAL	"UB" at detected sample concentration

Note:

RL Reporting limit
EB Equipment Blank

3. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. The TO-15 analysis requires that all surrogates associated with the analysis exhibit a percent recovery within the laboratory-established acceptance limits.

All surrogate recoveries were within control limits.

4. Laboratory Control Sample Analysis

The LCS analysis is used to assess the accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS analysis must exhibit a percent recovery and RPD within the laboratory-established acceptance limits.

All compounds associated with the LCS analysis exhibited recoveries within the control limits.

DATA REVIEW REPORT

5. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 50% for air matrix is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for air matrix.

Results for duplicate samples are summarized in the following table.

Sample ID / Duplicate ID	Compound	Sample Result (ug/m3)	Duplicate Result (ug/m3)	RPD
VP-2-7 / Dup-1	APH EC9-12 aliphatic	390	340	14%

The calculated RPDs between the parent sample and field duplicate were acceptable.

6. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA REVIEW REPORT

DATA VALIDATION CHECKLIST FOR APH

APH By Method MA-APH	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks		X	X		
C. Trip blanks	X				X
Laboratory Control Sample (LCS) %R		X		X	
Laboratory Control Sample Duplicate (LCSD)	X				X
LCS/LCSD Precision (RPD)	X				X
Matrix Spike (MS) %R	X				X
Matrix Spike Duplicate (MSD)	X				X
MS/MSD Precision (RPD)	X				X
Field/Lab Duplicate (RPD)		X		X	
Surrogate Spike Recoveries		X		X	
Dilution Factor		X		X	

Notes:

%R Percent recovery

RPD Relative percent difference

DATA REVIEW REPORT

FIXED GASES ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation	Return Canister Pressure
ASTM D-1946	Air	30 days from collection to analysis (Canister)	Ambient Temperature	< -1" Hg

All samples were analyzed within the specified holding time and canister return pressure / vacuum criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the reporting limit (RL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the RL in the associated blanks; therefore, detected sample results were not associated with blank contamination.

3. Laboratory Control Sample / Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS/LCSD analysis is used to assess the accuracy and precision of the analytical method independent of matrix interferences. The compounds associated with the LCS/LCSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All compounds associated with the LCS/LCSD analysis exhibited recoveries within the control limits.

4. Laboratory Duplicate Sample Analysis

The laboratory duplicate sample relative percent difference (RPD) criterion is applied when parent and duplicate sample concentrations are greater than or equal to five times the reporting limit (RL). A control limit of 20% is applied when the criteria above is true. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the RL, a control limit of one times the RL is applied.

The laboratory duplicate sample analysis was performed on a sample VP-1-5 exhibited RPD within the control limit.

5. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 50% for air matrix is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for air matrix.

Results for duplicate samples are summarized in the following table.

DATA REVIEW REPORT

Sample ID / Duplicate ID	Compound	Sample Result (%)	Duplicate Result (%)	RPD
VP-2-7 / Dup-1	Helium	U	U	AC

Note:

AC = Acceptable

The Results between the parent sample and field duplicate were acceptable.

6. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA REVIEW REPORT

DATA VALIDATION CHECKLIST FOR FIXED GASES

ASTM D-1946	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/FLAME IONIZATION DETECTOR (GC/FID)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks		X		X	
C. Trip blanks	X				X
Laboratory Control Sample (LCS) %R		X		X	
Laboratory Control Sample Duplicate (LCSD)	X				X
LCS/LCSD Precision (RPD)	X				X
Matrix Spike (MS) %R	X				X
Matrix Spike Duplicate (MSD)	X				X
MS/MSD Precision (RPD)	X				X
Field/Lab Duplicate (RPD)		X		X	
Surrogate Spike Recoveries	X				X
Dilution Factor		X		X	

Notes:

%R Percent recovery

RPD Relative percent difference

DATA REVIEW REPORT

VALIDATION PERFORMED BY: Vinayak Hegde

SIGNATURE:



DATE: February 15, 2022

PEER REVIEW: Dennis Capria

DATE: February 24, 2022

**CHAIN OF CUSTODY
CORRECTED SAMPLE ANALYSIS DATA
SHEETS**



110163

SAMPLE CHAIN OF CUSTODY

ME 10/8/21

Report To Ada Hamilton

Company Accadis

Address 1100 Olive Way, Ste 300

City, State, ZIP Seattle, WA, 98101

Phone _____ Email Ada.Hamilton@Accadis.com

SAMPLERS (signature) <u>Z BA</u>	
PROJECT NAME & ADDRESS <u>97502 124 Ferry St., Seward-Woolley, WA</u>	PO # <u>30064310</u>
NOTES:	INVOICE TO

Page # 1 of 1

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 BTEX	TO15 Volatiles	APH	Helium #	Notes
VP-1-5	01	8211	102	IA / (SG)	10/7/21	-30	1546	-5	1551	X	X	X	X	X	BTEX, MTBE,
VP-1-7	02	3257	101	IA / (SG)		-30	1549	-5	1354						+ Naphthalenes by TO-15
VP-2-7	03	8346	108	IA / (SG)		-30	1431	-5	1436						
DIAP-1	04	8255	117	IA / (SG)		-30	-	-5	-						* Helium by ASTM D-1446
EB-1	05	7948	106	IA / SG	↓	-29	1527	-5	1531	↓	↓	↓	↓	↓	* Helium, CO ₂ , O ₂ , CH ₄ by ASTM D-16
				IA / SG											
				IA / SG											
				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: <u>Z BA</u>	Trevor Bryant	Accadis	10/8/21	10:43
Received by: <u>[Signature]</u>	Michael Erskell	FIRB	10/8/21	1043
Relinquished by:				
Received by:		Samples received at	19°C	

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	VP-1-5	Client:	Arcadis
Date Received:	10/08/21	Project:	30064310, F&BI 110163
Date Collected:	10/07/21	Lab ID:	110163-01 1/5.3
Date Analyzed:	10/13/21	Data File:	101225.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

	%	Lower	Upper
Surrogates:	Recovery:	Limit:	Limit:
4-Bromofluorobenzene	86	70	130

Compounds:	Concentration
	ug/m3
APH EC5-8 aliphatics	<400
APH EC9-12 aliphatics	460 UB
APH EC9-10 aromatics	<130

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	VP-1-7	Client:	Arcadis
Date Received:	10/08/21	Project:	30064310, F&BI 110163
Date Collected:	10/07/21	Lab ID:	110163-02 1/5.9
Date Analyzed:	10/13/21	Data File:	101226.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

	%	Lower	Upper
Surrogates:	Recovery:	Limit:	Limit:
4-Bromofluorobenzene	88	70	130

Compounds:	Concentration
	ug/m3
APH EC5-8 aliphatics	<440
APH EC9-12 aliphatics	420 UB
APH EC9-10 aromatics	<150

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	VP-2-7	Client:	Arcadis
Date Received:	10/08/21	Project:	30064310, F&BI 110163
Date Collected:	10/07/21	Lab ID:	110163-03 1/5.9
Date Analyzed:	10/13/21	Data File:	101227.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

	%	Lower	Upper
Surrogates:	Recovery:	Limit:	Limit:
4-Bromofluorobenzene	85	70	130

Compounds:	Concentration
	ug/m3
APH EC5-8 aliphatics	<440
APH EC9-12 aliphatics	390 UB
APH EC9-10 aromatics	<150

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	Dup-1	Client:	Arcadis
Date Received:	10/08/21	Project:	30064310, F&BI 110163
Date Collected:	10/07/21	Lab ID:	110163-04 1/5.5
Date Analyzed:	10/13/21	Data File:	101228.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

	%	Lower	Upper
Surrogates:	Recovery:	Limit:	Limit:
4-Bromofluorobenzene	88	70	130

Compounds:	Concentration
	ug/m3
APH EC5-8 aliphatics	<410
APH EC9-12 aliphatics	340 UB
APH EC9-10 aromatics	<140

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	EB-1	Client:	Arcadis
Date Received:	10/08/21	Project:	30064310, F&BI 110163
Date Collected:	10/07/21	Lab ID:	110163-05 1/5.8
Date Analyzed:	10/13/21	Data File:	101229.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

	%	Lower	Upper
Surrogates:	Recovery:	Limit:	Limit:
4-Bromofluorobenzene	87	70	130

Compounds:	Concentration
	ug/m3
APH EC5-8 aliphatics	<430
APH EC9-12 aliphatics	240
APH EC9-10 aromatics	<140

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-1-5	Client:	Arcadis
Date Received:	10/08/21	Project:	30064310, F&BI 110163
Date Collected:	10/07/21	Lab ID:	110163-01 1/5.3
Date Analyzed:	10/13/21	Data File:	101225.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	87	70	130

Compounds:	Concentration	
	ug/m3	ppbv
Methyl t-butyl ether (MTBE)	<9.6	<2.6
Benzene	<1.7	<0.53
Toluene	<100	<26
Ethylbenzene	<2.3	<0.53
m,p-Xylene	<4.6	<1.1
o-Xylene	<2.3	<0.53
Naphthalene	<1.4	<0.26

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-1-7	Client:	Arcadis
Date Received:	10/08/21	Project:	30064310, F&BI 110163
Date Collected:	10/07/21	Lab ID:	110163-02 1/5.9
Date Analyzed:	10/13/21	Data File:	101226.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	89	70	130

Compounds:	Concentration	
	ug/m3	ppbv
Methyl t-butyl ether (MTBE)	<11	<2.9
Benzene	<1.9	<0.59
Toluene	<110	<29
Ethylbenzene	<2.6	<0.59
m,p-Xylene	<5.1	<1.2
o-Xylene	<2.6	<0.59
Naphthalene	<1.5	<0.29

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-2-7	Client:	Arcadis
Date Received:	10/08/21	Project:	30064310, F&BI 110163
Date Collected:	10/07/21	Lab ID:	110163-03 1/5.9
Date Analyzed:	10/13/21	Data File:	101227.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	86	70	130

Compounds:	Concentration	
	ug/m3	ppbv
Methyl t-butyl ether (MTBE)	<11	<2.9
Benzene	<1.9	<0.59
Toluene	<110	<29
Ethylbenzene	<2.6	<0.59
m,p-Xylene	<5.1	<1.2
o-Xylene	<2.6	<0.59
Naphthalene	<1.5	<0.29

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	Dup-1	Client:	Arcadis
Date Received:	10/08/21	Project:	30064310, F&BI 110163
Date Collected:	10/07/21	Lab ID:	110163-04 1/5.5
Date Analyzed:	10/13/21	Data File:	101228.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	89	70	130

Compounds:	Concentration	
	ug/m3	ppbv
Methyl t-butyl ether (MTBE)	<9.9	<2.7
Benzene	<1.8	<0.55
Toluene	<100	<27
Ethylbenzene	<2.4	<0.55
m,p-Xylene	<4.8	<1.1
o-Xylene	<2.4	<0.55
Naphthalene	<1.4	<0.28

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	EB-1	Client:	Arcadis
Date Received:	10/08/21	Project:	30064310, F&BI 110163
Date Collected:	10/07/21	Lab ID:	110163-05 1/5.8
Date Analyzed:	10/13/21	Data File:	101229.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	89	70	130

Compounds:	Concentration	
	ug/m3	ppbv
Methyl t-butyl ether (MTBE)	<10	<2.9
Benzene	<1.9	<0.58
Toluene	<110	<29
Ethylbenzene	<2.5	<0.58
m,p-Xylene	<5	<1.2
o-Xylene	<2.5	<0.58
Naphthalene	<1.5	<0.29

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 10/27/21

Date Received: 10/08/21

Project: 97502 124 Ferry St Sedro Woolley 30064310, F&BI 110163

Date Extracted: 10/22/21

Date Analyzed: 10/22/21

**RESULTS FROM THE ANALYSIS OF AIR SAMPLES
FOR HELIUM USING METHOD ASTM D1946**

Results Reported as % Helium

<u>Sample ID</u> Laboratory ID	<u>Helium</u>
VP-1-5 110163-01	<0.6
VP-1-7 110163-02	<0.6
VP-2-7 110163-03	<0.6
Dup-1 110163-04	<0.6
EB-1 110163-05	<0.6
Method Blank 01-2392 MB	<0.6

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

October 27, 2021

Ada Hamilton, Project Manager
Arcadis
1100 Olive Way, Suite 800
Seattle, WA 98101

Dear Ms Hamilton:

Included are the results from the testing of material submitted on October 8, 2021 from the 97502 124 Ferry St Sedro Woolley 30064310, F&BI 110163 project. There are 18 pages included in this report.

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

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures

c: Ada.Hamilton@Arcadis.com
ACD1027R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on October 8, 2021 by Friedman & Bruya, Inc. from the Arcadis 97502 124 Ferry St Sedro Woolley 30064310, F&BI 110163 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Arcadis</u>
110163 -01	VP-1-5
110163 -02	VP-1-7
110163 -03	VP-2-7
110163 -04	Dup-1
110163 -05	EB-1

Non-petroleum compounds identified in the air phase hydrocarbon (APH) ranges were subtracted per the MA-APH method.

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	VP-1-5	Client:	Arcadis
Date Received:	10/08/21	Project:	30064310, F&BI 110163
Date Collected:	10/07/21	Lab ID:	110163-01 1/5.3
Date Analyzed:	10/13/21	Data File:	101225.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

	%	Lower	Upper
Surrogates:	Recovery:	Limit:	Limit:
4-Bromofluorobenzene	86	70	130

Compounds:	Concentration
	ug/m3
APH EC5-8 aliphatics	<400
APH EC9-12 aliphatics	460
APH EC9-10 aromatics	<130

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	VP-1-7	Client:	Arcadis
Date Received:	10/08/21	Project:	30064310, F&BI 110163
Date Collected:	10/07/21	Lab ID:	110163-02 1/5.9
Date Analyzed:	10/13/21	Data File:	101226.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

	%	Lower	Upper
Surrogates:	Recovery:	Limit:	Limit:
4-Bromofluorobenzene	88	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	<440
APH EC9-12 aliphatics	420
APH EC9-10 aromatics	<150

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	VP-2-7	Client:	Arcadis
Date Received:	10/08/21	Project:	30064310, F&BI 110163
Date Collected:	10/07/21	Lab ID:	110163-03 1/5.9
Date Analyzed:	10/13/21	Data File:	101227.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

	%	Lower	Upper
Surrogates:	Recovery:	Limit:	Limit:
4-Bromofluorobenzene	85	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	<440
APH EC9-12 aliphatics	390
APH EC9-10 aromatics	<150

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	Dup-1	Client:	Arcadis
Date Received:	10/08/21	Project:	30064310, F&BI 110163
Date Collected:	10/07/21	Lab ID:	110163-04 1/5.5
Date Analyzed:	10/13/21	Data File:	101228.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

	%	Lower	Upper
Surrogates:	Recovery:	Limit:	Limit:
4-Bromofluorobenzene	88	70	130

Compounds:	Concentration
	ug/m3
APH EC5-8 aliphatics	<410
APH EC9-12 aliphatics	340
APH EC9-10 aromatics	<140

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	EB-1	Client:	Arcadis
Date Received:	10/08/21	Project:	30064310, F&BI 110163
Date Collected:	10/07/21	Lab ID:	110163-05 1/5.8
Date Analyzed:	10/13/21	Data File:	101229.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

	%	Lower	Upper
Surrogates:	Recovery:	Limit:	Limit:
4-Bromofluorobenzene	87	70	130

Compounds:	Concentration
	ug/m3
APH EC5-8 aliphatics	<430
APH EC9-12 aliphatics	240
APH EC9-10 aromatics	<140

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	Method Blank	Client:	Arcadis
Date Received:	Not Applicable	Project:	30064310, F&BI 110163
Date Collected:	Not Applicable	Lab ID:	01-2236 MB
Date Analyzed:	10/12/21	Data File:	101211.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

	%	Lower	Upper
Surrogates:	Recovery:	Limit:	Limit:
4-Bromofluorobenzene	89	70	130

Compounds:	Concentration
	ug/m3
APH EC5-8 aliphatics	<75
APH EC9-12 aliphatics	<25
APH EC9-10 aromatics	<25

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-1-5	Client:	Arcadis
Date Received:	10/08/21	Project:	30064310, F&BI 110163
Date Collected:	10/07/21	Lab ID:	110163-01 1/5.3
Date Analyzed:	10/13/21	Data File:	101225.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	87	70	130

Compounds:	Concentration	
	ug/m3	ppbv
Methyl t-butyl ether (MTBE)	<9.6	<2.6
Benzene	<1.7	<0.53
Toluene	<100	<26
Ethylbenzene	<2.3	<0.53
m,p-Xylene	<4.6	<1.1
o-Xylene	<2.3	<0.53
Naphthalene	<1.4	<0.26

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-1-7	Client:	Arcadis
Date Received:	10/08/21	Project:	30064310, F&BI 110163
Date Collected:	10/07/21	Lab ID:	110163-02 1/5.9
Date Analyzed:	10/13/21	Data File:	101226.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	89	70	130

Compounds:	Concentration	
	ug/m3	ppbv
Methyl t-butyl ether (MTBE)	<11	<2.9
Benzene	<1.9	<0.59
Toluene	<110	<29
Ethylbenzene	<2.6	<0.59
m,p-Xylene	<5.1	<1.2
o-Xylene	<2.6	<0.59
Naphthalene	<1.5	<0.29

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-2-7	Client:	Arcadis
Date Received:	10/08/21	Project:	30064310, F&BI 110163
Date Collected:	10/07/21	Lab ID:	110163-03 1/5.9
Date Analyzed:	10/13/21	Data File:	101227.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	86	70	130

Compounds:	Concentration	
	ug/m3	ppbv
Methyl t-butyl ether (MTBE)	<11	<2.9
Benzene	<1.9	<0.59
Toluene	<110	<29
Ethylbenzene	<2.6	<0.59
m,p-Xylene	<5.1	<1.2
o-Xylene	<2.6	<0.59
Naphthalene	<1.5	<0.29

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	Dup-1	Client:	Arcadis
Date Received:	10/08/21	Project:	30064310, F&BI 110163
Date Collected:	10/07/21	Lab ID:	110163-04 1/5.5
Date Analyzed:	10/13/21	Data File:	101228.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	89	70	130

Compounds:	Concentration	
	ug/m3	ppbv
Methyl t-butyl ether (MTBE)	<9.9	<2.7
Benzene	<1.8	<0.55
Toluene	<100	<27
Ethylbenzene	<2.4	<0.55
m,p-Xylene	<4.8	<1.1
o-Xylene	<2.4	<0.55
Naphthalene	<1.4	<0.28

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	EB-1	Client:	Arcadis
Date Received:	10/08/21	Project:	30064310, F&BI 110163
Date Collected:	10/07/21	Lab ID:	110163-05 1/5.8
Date Analyzed:	10/13/21	Data File:	101229.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	89	70	130

Compounds:	Concentration	
	ug/m3	ppbv
Methyl t-butyl ether (MTBE)	<10	<2.9
Benzene	<1.9	<0.58
Toluene	<110	<29
Ethylbenzene	<2.5	<0.58
m,p-Xylene	<5	<1.2
o-Xylene	<2.5	<0.58
Naphthalene	<1.5	<0.29

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	Method Blank	Client:	Arcadis
Date Received:	Not Applicable	Project:	30064310, F&BI 110163
Date Collected:	Not Applicable	Lab ID:	01-2236 MB
Date Analyzed:	10/12/21	Data File:	101211.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	90	70	130

Compounds:	Concentration	
	ug/m3	ppbv
Methyl t-butyl ether (MTBE)	<1.8	<0.5
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
Naphthalene	<0.26	<0.05

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 10/27/21

Date Received: 10/08/21

Project: 97502 124 Ferry St Sedro Woolley 30064310, F&BI 110163

Date Extracted: 10/22/21

Date Analyzed: 10/22/21

**RESULTS FROM THE ANALYSIS OF AIR SAMPLES
FOR HELIUM USING METHOD ASTM D1946**

Results Reported as % Helium

<u>Sample ID</u> Laboratory ID	<u>Helium</u>
VP-1-5 110163-01	<0.6
VP-1-7 110163-02	<0.6
VP-2-7 110163-03	<0.6
Dup-1 110163-04	<0.6
EB-1 110163-05	<0.6
Method Blank 01-2392 MB	<0.6

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 10/27/21

Date Received: 10/08/21

Project: 97502 124 Ferry St Sedro Woolley 30064310, F&BI 110163

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES
FOR VOLATILES BY METHOD MA-APH**

Laboratory Code: 110157-01 1/5.7 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 30)
APH EC5-8 aliphatics	ug/m3	580	550	5
APH EC9-12 aliphatics	ug/m3	300	320	6
APH EC9-10 aromatics	ug/m3	<140	<140	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
APH EC5-8 aliphatics	ug/m3	67	86	70-130
APH EC9-12 aliphatics	ug/m3	67	112	70-130
APH EC9-10 aromatics	ug/m3	67	105	70-130

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 10/27/21

Date Received: 10/08/21

Project: 97502 124 Ferry St Sedro Woolley 30064310, F&BI 110163

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

Laboratory Code: 110157-01 1/5.7 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 30)
Methyl t-butyl ether (MTBE)	ug/m3	<10	<10	nm
Benzene	ug/m3	3.7	3.6	3
Toluene	ug/m3	<110	<110	nm
Ethylbenzene	ug/m3	<2.5	<2.5	nm
m,p-Xylene	ug/m3	<5	<5	nm
o-Xylene	ug/m3	<2.5	<2.5	nm
Naphthalene	ug/m3	<1.5	<1.5	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Methyl t-butyl ether (MTBE)	ug/m3	49	94	70-130
Benzene	ug/m3	43	99	70-130
Toluene	ug/m3	51	107	70-130
Ethylbenzene	ug/m3	59	99	70-130
m,p-Xylene	ug/m3	120	107	70-130
o-Xylene	ug/m3	59	111	70-130
Naphthalene	ug/m3	71	108	70-130

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 10/27/21

Date Received: 10/08/21

Project: 97502 124 Ferry St Sedro Woolley 30064310, F&BI 110163

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES
FOR HELIUM
USING METHOD ASTM D1946**

Laboratory Code: 110163-01 (Duplicate)

Analyte	Sample Result (%)	Duplicate Result (%)	Relative Percent Difference	Acceptance Criteria
Helium	<0.6	<0.6	nm	0-20

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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.

110163

SAMPLE CHAIN OF CUSTODY

ME 10/8/21

Page # 1 of 1

Report To Ada Hamilton

Company Accadis

Address 1100 Olive Way, Ste 300

City, State, ZIP Seattle, WA, 98161

Phone _____ Email Ada.Hamilton@Accadis.com

SAMPLERS (signature) <u>BAK</u>	PROJECT NAME & ADDRESS <u>97502 124 Fern St, Sarno-Woolley WA</u>	PO # <u>3004510</u>
INVOICE TO		

TURNAROUND TIME
SAMPLE DISPOSAL <input checked="" type="checkbox"/> Default: Clean after 3 days <input type="checkbox"/> Archive (Fee may apply)

SAMPLE INFORMATION	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	ANALYSIS REQUESTED				Notes
										TO15 Full Scan	TO15 BTEX	APH	Helium *	
VP-1-5	01	3211	102	IA / <u>SG</u>	10/7/21	-30	1546	-5	1551	X	X	X	X	• BTEX, PCB, by TO-15
VP-1-7	02	3257	101	IA / <u>SG</u>		-30	1544	-5	1354	X	X	X	X	• updated by TO-15
VP-2-7	03	3346	108	IA / <u>SG</u>		-36	1431	-5	1436	X	X	X	X	Helium by ASTM-D-1496
DUP-1	04	3255	117	IA / <u>SG</u>		-30	-	-5	-	X	X	X	X	Helium by ASTM-D-1496
EB-1	05	7948	106	IA / SG		-29	1527	-5	1531	X	X	X	X	Helium, CO ₂ , O ₂ by ASTM-D-10

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Reinquished by: <u>[Signature]</u>	<u>Frederic Bryant</u>	<u>Accadis</u>	<u>10/8/21</u>	<u>10:43</u>
Received by: <u>[Signature]</u>	<u>Michael Enell</u>	<u>FIRL</u>	<u>10/8/21</u>	<u>1043</u>
Reinquished by:				
Received by:		Samples received at <u>1900</u>		

Appendix K

Terrestrial Ecological Evaluation Form



Voluntary Cleanup Program

Washington State Department of Ecology Toxics Cleanup Program

TERRESTRIAL ECOLOGICAL EVALUATION FORM

Under the Model Toxics Control Act (MTCA), a terrestrial ecological evaluation is necessary if hazardous substances are released into the soils at a Site. In the event of such a release, you must take one of the following three actions as part of your investigation and cleanup of the Site:

1. Document an exclusion from further evaluation using the criteria in WAC 173-340-7491.
2. Conduct a simplified evaluation as set forth in WAC 173-340-7492.
3. Conduct a site-specific evaluation as set forth in WAC 173-340-7493.

When requesting a written opinion under the Voluntary Cleanup Program (VCP), you must complete this form and submit it to the Department of Ecology (Ecology). The form documents the type and results of your evaluation.

Completion of this form is not sufficient to document your evaluation. You still need to document your analysis and the basis for your conclusion in your cleanup plan or report.

If you have questions about how to conduct a terrestrial ecological evaluation, please contact the Ecology site manager assigned to your Site. For additional guidance, please refer to <https://ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Terrestrial-ecological-evaluation>.

Step 1: IDENTIFY HAZARDOUS WASTE SITE

Please identify below the hazardous waste site for which you are documenting an evaluation.

Facility/Site Name: Chevron Site 97502

Facility/Site Address: 640 Metcalf Street, Sedro Woolley, Washington

Facility/Site No: 6112475

VCP Project No.:

Step 2: IDENTIFY EVALUATOR

Please identify below the person who conducted the evaluation and their contact information.

Name: Ada Hamilton

Title: Project Manager

Organization: Arcadis

Mailing address: 1100 Olive Way, Suite 800

City: Seattle

State: WA

Zip code: 98101

Phone: 206-325-8218

Fax:

E-mail: ada.hamilton@arcadis.com

Step 3: DOCUMENT EVALUATION TYPE AND RESULTS

A. Exclusion from further evaluation.

1. Does the Site qualify for an exclusion from further evaluation?

- Yes *If you answered "YES," then answer **Question 2**.*
- No or Unknown *If you answered "NO" or "UNKNOWN," then skip to **Step 3B** of this form.*

2. What is the basis for the exclusion? Check all that apply. Then skip to **Step 4** of this form.

Point of Compliance: WAC 173-340-7491(1)(a)

- All soil contamination is, or will be,* at least 15 feet below the surface.
- All soil contamination is, or will be,* at least 6 feet below the surface (or alternative depth if approved by Ecology), and institutional controls are used to manage remaining contamination.

Barriers to Exposure: WAC 173-340-7491(1)(b)

- All contaminated soil, is or will be,* covered by physical barriers (such as buildings or paved roads) that prevent exposure to plants and wildlife, and institutional controls are used to manage remaining contamination.

Undeveloped Land: WAC 173-340-7491(1)(c)

- There is less than 0.25 acres of contiguous[#] undeveloped[±] land on or within 500 feet of any area of the Site and any of the following chemicals is present: chlorinated dioxins or furans, PCB mixtures, DDT, DDE, DDD, aldrin, chlordane, dieldrin, endosulfan, endrin, heptachlor, heptachlor epoxide, benzene hexachloride, toxaphene, hexachlorobenzene, pentachlorophenol, or pentachlorobenzene.
- For sites not containing any of the chemicals mentioned above, there is less than 1.5 acres of contiguous[#] undeveloped[±] land on or within 500 feet of any area of the Site.

Background Concentrations: WAC 173-340-7491(1)(d)

- Concentrations of hazardous substances in soil do not exceed natural background levels as described in WAC 173-340-200 and 173-340-709.

* An exclusion based on future land use must have a completion date for future development that is acceptable to Ecology.

± "Undeveloped land" is land that is not covered by building, roads, paved areas, or other barriers that would prevent wildlife from feeding on plants, earthworms, insects, or other food in or on the soil.

"Contiguous" undeveloped land is an area of undeveloped land that is not divided into smaller areas of highways, extensive paving, or similar structures that are likely to reduce the potential use of the overall area by wildlife.

B. Simplified evaluation.

1. Does the Site qualify for a simplified evaluation?

- Yes *If you answered "YES," then answer **Question 2** below.*
- No or Unknown *If you answered "NO" or "UNKNOWN," then skip to **Step 3C** of this form.*

2. Did you conduct a simplified evaluation?

- Yes *If you answered "YES," then answer **Question 3** below.*
- No *If you answered "NO," then skip to **Step 3C** of this form.*

3. Was further evaluation necessary?

- Yes *If you answered "YES," then answer **Question 4** below.*
- No *If you answered "NO," then answer **Question 5** below.*

4. If further evaluation was necessary, what did you do?

- Used the concentrations listed in Table 749-2 as cleanup levels. *If so, then skip to **Step 4** of this form.*
- Conducted a site-specific evaluation. *If so, then skip to **Step 3C** of this form.*

5. If no further evaluation was necessary, what was the reason? Check all that apply. Then skip to **Step 4** of this form.

Exposure Analysis: WAC 173-340-7492(2)(a)

- Area of soil contamination at the Site is not more than 350 square feet.
- Current or planned land use makes wildlife exposure unlikely. Used Table 749-1.

Pathway Analysis: WAC 173-340-7492(2)(b)

- No potential exposure pathways from soil contamination to ecological receptors.

Contaminant Analysis: WAC 173-340-7492(2)(c)

- No contaminant listed in Table 749-2 is, or will be, present in the upper 15 feet at concentrations that exceed the values listed in Table 749-2.
- No contaminant listed in Table 749-2 is, or will be, present in the upper 6 feet (or alternative depth if approved by Ecology) at concentrations that exceed the values listed in Table 749-2, and institutional controls are used to manage remaining contamination.
- No contaminant listed in Table 749-2 is, or will be, present in the upper 15 feet at concentrations likely to be toxic or have the potential to bioaccumulate as determined using Ecology-approved bioassays.
- No contaminant listed in Table 749-2 is, or will be, present in the upper 6 feet (or alternative depth if approved by Ecology) at concentrations likely to be toxic or have the potential to bioaccumulate as determined using Ecology-approved bioassays, and institutional controls are used to manage remaining contamination.

C. Site-specific evaluation. A site-specific evaluation process consists of two parts: (1) formulating the problem, and (2) selecting the methods for addressing the identified problem. Both steps require consultation with and approval by Ecology. See WAC 173-340-7493(1)(c).

1. Was there a problem? See WAC 173-340-7493(2).

- Yes *If you answered “YES,” then answer **Question 2** below.*
- No *If you answered “NO,” then identify the reason here and then skip to **Question 5** below:*
- No issues were identified during the problem formulation step.
 - While issues were identified, those issues were addressed by the cleanup actions for protecting human health.

2. What did you do to resolve the problem? See WAC 173-340-7493(3).

- Used the concentrations listed in Table 749-3 as cleanup levels. *If so, then skip to **Question 5** below.*
- Used one or more of the methods listed in WAC 173-340-7493(3) to evaluate and address the identified problem. *If so, then answer **Questions 3 and 4** below.*

3. If you conducted further site-specific evaluations, what methods did you use?

Check all that apply. See WAC 173-340-7493(3).

- Literature surveys.
- Soil bioassays.
- Wildlife exposure model.
- Biomarkers.
- Site-specific field studies.
- Weight of evidence.
- Other methods approved by Ecology. If so, please specify:

4. What was the result of those evaluations?

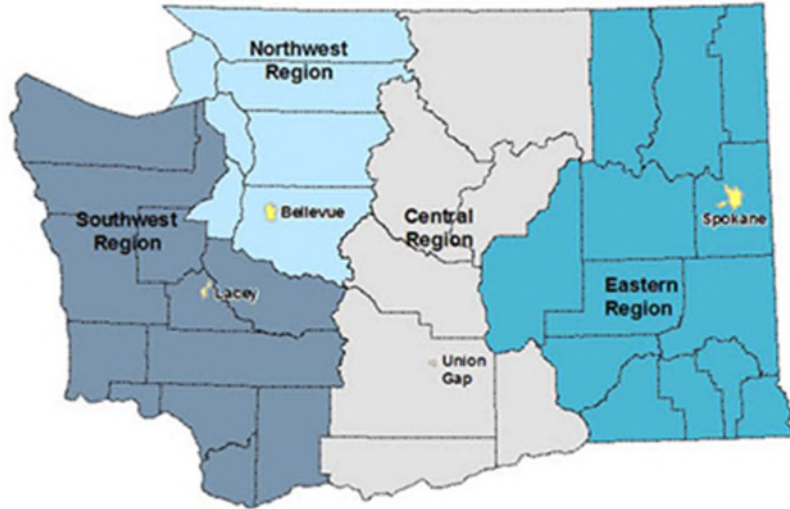
- Confirmed there was no problem.
- Confirmed there was a problem and established site-specific cleanup levels.

5. Have you already obtained Ecology’s approval of both your problem formulation and problem resolution steps?

- Yes If so, please identify the Ecology staff who approved those steps:
- No

Step 4: SUBMITTAL

Please mail your completed form to the Ecology site manager assigned to your Site. If a site manager has not yet been assigned, please mail your completed form to the Ecology regional office for the County in which your Site is located.



Northwest Region: Attn: VCP Coordinator 3190 160 th Ave. SE Bellevue, WA 98008-5452	Central Region: Attn: VCP Coordinator 1250 West Alder St. Union Gap, WA 98903-0009
Southwest Region: Attn: VCP Coordinator P.O. Box 47775 Olympia, WA 98504-7775	Eastern Region: Attn: VCP Coordinator N. 4601 Monroe Spokane WA 99205-1295

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