

BNSF Railway Company

2023 Annual Hydraulic Control and Containment System Operations Report

**Former Maintenance and Fueling Facility
Skykomish, Washington**

May 22, 2024

2023 Annual Hydraulic Control and Containment System Operations Report

**Former Maintenance and Fueling Facility
Skykomish, Washington**

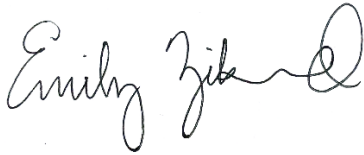
May 22, 2024

Prepared By:

Arcadis U.S., Inc.
1420 5th Avenue, Suite 2400
Seattle
Washington 98101
Phone: 206 325 5254
Fax: 206 325 8218

Prepared For:

BNSF Railway Company
605 Puyallup Ave
Tacoma
Washington 98421



Emily Zikmund
Environmental Engineer



Kyle Haslam
Project Manager



Paul T. McCullough, PE (WA, License No. 43590)
Principal Environmental Engineer / Engineer of Record



Contents

Tables	iii
Acronyms and Abbreviations.....	iv
Executive Summary.....	1
1 Introduction.....	1
2 HCC System Description and Performance Monitoring.....	2
2.1 HCC System Description	2
2.2 HCC System Operations and Maintenance.....	3
2.2.1 System Run-Time	3
2.2.2 Groundwater Extraction and Treated Water Discharge.....	3
2.2.3 Tank Water Levels	4
2.2.4 Visual Inspection of Effluent Equalization Tank for Sheen.....	4
2.2.5 Visual Inspection of Recovery Wells and Oil-Skimmer	4
2.2.6 Water Treatment System Influent Monitoring.....	4
2.2.7 Water Treatment System Effluent Monitoring	4
2.2.8 Recovered LNAPL Volumes	5
2.2.9 Differential Groundwater Elevations Across Barrier Wall.....	5
2.2.10 Service Interruptions.....	5
2.2.11 HCC System Shutdown.....	6
2.2.12 Biosparge System	6
2.3 Biosparge System Description	6
2.4 Installation and Startup.....	7
2.5 Biosparge System Operations and Maintenance.....	7
3 Results of HCC System Groundwater Monitoring	7
3.1 Sentry Wells	8
3.2 Gate Wells	9
3.3 End Wells.....	10
3.4 Monitoring Wells.....	10
3.5 Piezometers.....	11
3.6 Recovery Wells	11
3.7 Barrier Wall Gate Oil–Water Separator Chambers	12
4 Data Validation and Usability	12
5 Conclusions	12

6 References 14

Tables

Table 1 HCC Water Treatment System Discharge Flow Rates
Table 2 Total Petroleum Hydrocarbon Concentrations in HCC Water Treatment System Influent and Effluent
Table 3 pH in HCC Water Treatment System Effluent
Table 4 Metal Concentration in HCC Water Treatment System Effluent
Table 5 HCC System Barrier Wall Groundwater Elevations
Table 6 Biosparge System Operational Data
Table 7 Stabilized Field Parameter Values at HCC System Monitoring Wells
Table 8 Total Petroleum Hydrocarbon Concentrations in Groundwater
Table 9 Groundwater Elevations and LNAPL Thicknesses

Figures

Figure 1 Site Plan
Figure 2 March 2023 Potentiometric Surface Map
Figure 3 September 2023 Potentiometric Surface Map
Figure 4 Biosparge System Process and Instrumentation Diagram
Figure 5 Biosparge Manifold
Figure 6 March 2023 Total Petroleum Hydrocarbons in Groundwater
Figure 7 June 2023 Total Petroleum Hydrocarbons in Groundwater
Figure 8 September 2023 Total Petroleum Hydrocarbons in Groundwater
Figure 9 December 2023 Total Petroleum Hydrocarbons in Groundwater

Appendices

Appendix A. Laboratory Analytical Report
Appendix B. Data Validation Reports
Appendix C. NWTPH-Dx Trend Plots
Appendix D. LNAPL Trend Plots

Acronyms and Abbreviations

µg/L	microgram per liter
2023 O&M Manual	2023 Operation and Maintenance Manual for the Hydraulic Control and Containment System
AECOM	AECOM Environment
Arcadis	Arcadis U.S., Inc.
BNSF	BNSF Railway Company
DRO	total petroleum hydrocarbons as diesel-range organics
Ecology	Washington State Department of Ecology
Farallon	Farallon Consulting, L.L.C.
GAC	granulated activated carbon
HCC	hydraulic control and containment
LNAPL	light non-aqueous phase liquid
NPDES Permit	National Pollutant Discharge Elimination System Permit No. WA0032123
OWS	oil–water separator
Report	2023 Annual Hydraulic Control and Containment System Operations Report
RL	remediation level
Site	BNSF Former Maintenance and Fueling Facility

Executive Summary

Arcadis U.S., Inc. prepared this 2023 Annual Hydraulic Control and Containment System Operations Report on behalf of BNSF Railway Company (BNSF) to describe hydraulic control and containment (HCC) system operations and performance monitoring conducted during 2023 at the BNSF Former Maintenance and Fueling Facility in Skykomish, Washington. The cleanup objective for the HCC system is to prevent light nonaqueous-phase liquid (LNAPL) and groundwater with total petroleum hydrocarbon concentrations in the vicinity of the HCC barrier wall from exceeding the site-specific groundwater remediation level (RL) of 477 micrograms per liter from migrating from the BNSF railyard to the Skykomish River. Approximately 4.06 million gallons of groundwater were extracted and treated in 2023. Approximately 20 gallons of LNAPL were recovered by the recovery well oil-skimmer storage tanks in 2023.

The HCC system operated in conformance with National Pollutant Discharge Elimination System Permit No. WA0032123. The reported concentrations of lead, arsenic, and total petroleum hydrocarbons (referred to as combined diesel range organics/heavy oil [DRO/HO] by Northwest method NWTPH-Dx, in HCC water treatment system effluent samples were less than the respective discharge limits specified in National Pollutant Discharge Elimination System Permit No. WA0032123 in 2023.

In July 2023 a biosparge system was constructed to support the transition from active to passive HCC system operation, as approved by Ecology. The HCC system was switched from active mode to passive mode on July 18, 2023 in accordance with the Fourth Amendment to Consent Decree No. 07-2-33672-9 SEA dated September 29, 2023 and the biosparge system was started on August 3, 2023.

Liquid level gauging and groundwater sampling were performed to assess HCC system performance in March, June, September, and December 2023. South (i.e., upgradient) and north (i.e. downgradient) of the HCC system barrier wall, the groundwater flow direction is predominantly toward the west-northwest. The inferred groundwater flow directions in 2023 were consistent with previous years following construction of the barrier wall. Groundwater flows from south to north through three of the four gates along the HCC sheet pile wall that runs parallel to Railroad Avenue. The Center Gate has been blocked due to biofouling and groundwater instead is treated through the Far West, West, and East Gates.

LNAPL was observed in monitoring wells and piezometers upgradient (south) of and adjacent to the HCC system barrier wall, between the West Gate and Center Gate, which is consistent with previous years; measured LNAPL observations ranged from a sheen to 0.30 foot thick. LNAPL observations and thickness measurements in monitoring wells and piezometers have exhibited an overall decreasing or stable trend since the HCC system was installed.

Concentrations of combined DRO/HO in groundwater samples collected from monitoring wells downgradient (north) of the HCC system barrier wall were less than the site-specific groundwater RL of 477 micrograms per liter, with the exception of samples collected from monitoring wells GW-3 (March), GW-4 (September), and 2A-W-41 (September and December). Results from monitoring well GW-3 and 2A-W-41 were compared with silica gel and non-silica gel sample preparation methods and confirmed to be biased high due to biogenic and petroleum metabolite interference. Results of the samples analyzed following silica gel cleanup were less than the RL in both locations.

1 Introduction

On behalf of the BNSF Railway Company (BNSF), Arcadis U.S., Inc. (Arcadis) has prepared this 2023 Annual Hydraulic Control and Containment System Operations Report (Report) for the BNSF Former Maintenance and Fueling Facility (the Site). This Report describes the hydraulic control and containment (HCC) system operation and performance monitoring conducted during 2023. The Site includes BNSF property and public and private properties within the town of Skykomish, Washington (Figure 1).

The HCC system was designed to meet the cleanup objective, as defined in the Cleanup Action Plan prepared by the Washington State Department of Ecology (Ecology), of preventing light nonaqueous-phase liquid (LNAPL) and groundwater with total petroleum hydrocarbon concentrations (defined herein as the sum of total petroleum hydrocarbons as diesel range organics [DRO] and heavy oil [HO] using Northwest Method NWTPH-Dx and herein referred to as “combined DRO/HO”) exceeding the site-specific remediation level (RL) of 477 micrograms per liter ($\mu\text{g/L}$) from migrating from the BNSF railyard to the Skykomish River (Ecology 2007).

The HCC system is part of an integrated and comprehensive cleanup action and is operated and maintained in accordance with the requirements of the Cleanup Action Plan (Ecology 2007). The HCC system design is documented in the Hydraulic Control and Containment System Special Design Report (ENSR Corporation 2008b) and the Plans and Specifications for 2008 Remediation (ENSR Corporation 2008a). The HCC system was constructed as described in the 2008 Skykomish Remediation—As-Built Completion Report (AECOM 2009) and the 2009 Skykomish Remediation—As-Built Completion Report (AECOM 2010).

A 24-month HCC system passive operation pilot study was initiated on January 18, 2019 in accordance with the 2018 HCC System Passive Operation Pilot Study Work Plan (Farallon 2018b) and emails from Ecology regarding extending the pilot study through 2020 (Ecology 2020a, 2020b). Active operation of the HCC system resumed on January 4, 2021 (Ecology 2020c).

Site-wide groundwater monitoring and sampling events were conducted in March and September 2023 in accordance with the Final Long-Term Monitoring Plan (Farallon Consulting, L.L.C. [Farallon] 2020b). Quarterly HCC system groundwater monitoring was conducted in March, June, September, and December 2023 in accordance with the 2011 Operation and Maintenance Manual (AECOM Environment [AECOM] 2011) and 2014 addendum (Farallon 2014).

In July 2023 a biosparge system, consisting of four biosparge wells upgradient of the HCC barrier wall and an associated blower installed in the HCC building, was constructed to support the transition from active to passive HCC system operation, as approved by Ecology (Ecology 2023a). Details regarding the newly installed biosparge system are provided in Section 3. The HCC system was switched from active mode to passive mode on July 18, 2023 in accordance with the Fourth Amendment to Consent Decree No. 07-2-33672-9 SEA dated September 29, 2023 (Ecology 2023b). Mothballing of the pump-and-treat portion of the HCC system was conducted in accordance with the draft 2023 Operation and Maintenance Manual for the Hydraulic Control and Containment System (2023 O&M Manual; Arcadis 2023). Details of the HCC system operational transition are described in Section 2.2.11.

2 HCC System Description and Performance Monitoring

This section provides a general description of the HCC system and a summary of the performance monitoring activities conducted during 2023, including the monitoring parameters, schedule, and results. HCC system performance monitoring is conducted to facilitate system performance, assess performance relative to the cleanup objective, and document compliance with the discharge limits specified in National Pollutant Discharge Elimination System Permit No. WA0032123 (NPDES Permit). The primary components of the HCC system are summarized in Section 2.1. The HCC system operations and maintenance activities are summarized in Section 2.2.

2.1 HCC System Description

A detailed description of the HCC system, and figures showing the HCC system layout and process and instrumentation diagrams, are provided in the 2011 Operation and Maintenance Manual for the Hydraulic Control and Containment System (AECOM 2011). The HCC system comprises the following primary components:

- A 1,183-foot-long groundwater barrier wall and interception trench with four flow-through treatment gates, which contain oil–water separators (OWSs) and a mixture of granulated activated carbon (GAC) and pea gravel media, along the northern boundary of the BNSF railyard. These treatment gates are referred to as the Far West Gate, the West Gate, the Center Gate, and the East Gate;
- Nine groundwater extraction/LNAPL recovery wells;
- Fourteen piezometers;
- Twenty sentry wells;
- Eleven HCC system monitoring wells;
- Two groundwater injection wells;
- A water treatment system, which includes aboveground and underground water conveyance piping, an OWS, a hydrogen peroxide disinfectant system, sand filters, GAC vessels, a pH adjustment system, and influent and effluent water storage tanks; and
- A computer-based programmable logic controller that collects system operational data and is used to monitor, control, and adjust system operating parameters.

The groundwater injection wells were used intermittently in 2009 and 2010 to inject treated groundwater into the BNSF railyard subsurface. In September 2010, the discharge of treated groundwater to the injection wells ceased, and the discharge at one of the injection wells was rerouted to an upgradient OWS chamber in the East Gate of the barrier wall. The discharge of treated groundwater to the East Gate OWS chamber was discontinued at the end of 2012. Since the end of 2012, all groundwater treated by the HCC system has been discharged to the municipal storm sewer system (in accordance with the NPDES Permit), which discharges to the Skykomish River (Farallon 2018a).

2.2 HCC System Operations and Maintenance

HCC system operations monitoring was conducted in accordance with the 2011 Operation and Maintenance Manual for the Hydraulic Control and Containment System (AECOM 2011) and 2014 addendum (Farallon 2014) through July 18, 2023 when the system was switched to passive mode. HCC system operations monitoring consists of monitoring the following operational parameters and conducting inspections and sampling at the frequencies noted:

- System run-time (daily when system is operating);
- Groundwater extraction and treated water discharge flow (daily when system is operating);
Influent equalization tank water level (daily when system is operating);
Effluent equalization tank water level (daily when system is operating);
Backwash-water holding tank water level (daily when system is operating);
- Visual inspection of the effluent equalization tank for sheen (bimonthly when system is operating);
- Visual inspection of the recovery wells and recovery well oil-skimmer storage tanks for accumulation of LNAPL (bimonthly);
- Water treatment system influent monitoring, which includes sampling of primary and secondary GAC vessel influent (bimonthly when system is operating) (Note: Secondary GAC vessel influent samples were collected to assess petroleum hydrocarbon loading of primary GAC vessel and are not discussed further in this Report);
- Water treatment system effluent monitoring (bimonthly when system is operating): sampling of treatment system effluent and analysis by Northwest Method NWTPH-Dx; monitoring of treatment system effluent pH; and sampling of treatment system effluent and analysis for total lead and total arsenic by U.S. Environmental Protection Agency Method 200.8; and
- Groundwater elevations in piezometers and recovery wells (gauged by field personnel quarterly).

HCC system operation during passive mode and HCC system restart requirements are summarized in the draft 2023 Operation and Maintenance Manual for the Hydraulic Control and Containment System (2023 O&M Manual; Arcadis 2023).

2.2.1 System Run-Time

The HCC water treatment system operated for approximately 4,703 hours (196 days) in 2023. System operations were interrupted for short periods due to power outages or to perform maintenance, change out GAC and/or sand filter media, optimize system parameters, or make repairs. The system was shut down on July 18, 2023, for the transition from active to passive HCC system operations and has been shut down through December 31, 2023 for a total of approximately 3,984 hours (166 days).

2.2.2 Groundwater Extraction and Treated Water Discharge

Approximately 4.1 million gallons of groundwater were extracted and treated in 2023 from recovery wells RW-02, RW-03, RW-04, RW-06, RW-07, and RW-08 between January and July 2023. HCC system discharge flow rate data are summarized in Table 1.

2.2.3 Tank Water Levels

Influent equalization tank, effluent equalization tank, and backwash-water holding tank water levels were maintained within normal operating ranges.

2.2.4 Visual Inspection of Effluent Equalization Tank for Sheen

Water treatment system effluent water was monitored for the presence of sheen by visually observing the water in the effluent equalization tank, either during site visits or via a remote video camera (i.e., web cam). No sheen was observed on the water in the effluent equalization tank.

2.2.5 Visual Inspection of Recovery Wells and Oil-Skimmer

Recovery wells and recovery well oil-skimmer storage tanks were inspected bimonthly for accumulation of LNAPL. The recovery well oil-skimmer storage tanks were pumped out as required (Section 2.2.8).

2.2.6 Water Treatment System Influent Monitoring

HCC treatment system influent water was sampled from the inlet to the primary GAC on a bimonthly basis until the system was shut down on July 18, 2023. Reported influent combined DRO/HO concentrations ranged from less than 100 to 1,110 µg/L; the average reported influent combined DRO/HO concentration was 748 µg/L. Influent Northwest Method NWTPH-Dx data are summarized in Table 2; laboratory analytical reports are provided in Appendix A.

2.2.7 Water Treatment System Effluent Monitoring

HCC treatment system effluent water was sampled from the outlet of the secondary GAC vessel on a bimonthly basis until the system was shut down on July 18, 2023. Samples were analyzed for combined DRO/HO and for total lead and total arsenic (one sample per quarter). Additionally, the pH of the HCC treatment system effluent water was monitored while the HCC system was operating. The results of the effluent monitoring are summarized below:

- **Combined DRO/HO:** Reported combined DRO/HO concentrations in the HCC treatment system effluent samples were less than the NPDES Permit discharge limit of 208 µg/L for all samples collected in 2023. Effluent DRO and HO data are summarized in Table 2; laboratory analytical reports are provided in Appendix A.
- **pH:** Measured pH in the HCC treatment system effluent ranged from 6.98 to 7.70 standard units, which was within the NPDES Permit discharge limit for pH of 6.5 to 8.5. Effluent pH data are summarized in Table 3.
- **Lead and Arsenic:** Reported total lead and total arsenic concentrations in the HCC treatment system effluent samples were less than the respective NPDES Permit discharge limits of 17.5 and 360 µg/L, respectively. Effluent lead and arsenic data are summarized in Table 4; laboratory analytical reports are provided in Appendix A.

2.2.8 Recovered LNAPL Volumes

The belt-type oil skimmers in recovery wells RW-04, RW-07, and RW-08 were operated with approximately 2-minute run-times four to six times per day. Approximately 20 gallons of LNAPL were recovered by the recovery well oil skimmers in recovery wells RW-07 and RW-08 in 2023. No LNAPL was recovered from well RW-04 and no measurable LNAPL was observed in any other recovery wells. There were no apparent changes in LNAPL recovery rates once the HCC system was reconfigured to passive operations mode.

2.2.9 Differential Groundwater Elevations Across Barrier Wall

Six piezometer pairs installed along the barrier wall (piezometer pairs PZ-2S/PZ-2N through PZ-7S/PZ-7N) and two single piezometers, one at each end of the barrier wall (piezometers PZ-1 and PZ-8) (Figure 1), are used to monitor groundwater elevations adjacent to the barrier wall and near the flow-through treatment gates. One piezometer of each piezometer pair is on the southern (upgradient) side of the barrier wall (designated PZ-2S, PZ-3S, etc.), and the other piezometer is on the northern (downgradient) side of the barrier wall (designated PZ-2N, PZ-3N, etc.).

Quarterly groundwater elevation differentials across the barrier wall at each piezometer pair location were calculated by subtracting the groundwater elevation measured in the northern piezometer from the groundwater elevation measured in the southern piezometer. Barrier wall groundwater elevation data for the 2023 reporting period, including calculated elevation differentials at piezometer pairs, are presented in Table 5.

The largest differential elevations between piezometer pairs generally occurred in spring (March) during periods of higher groundwater elevations, and smaller differential elevations between piezometer pairs occurred during summer (September). The differential elevations recorded during periods of high groundwater indicate that, generally, groundwater mounding is occurring on the southern (upgradient) side of the barrier wall, which is expected and consistent with historical data. The differential groundwater elevation data demonstrate that the barrier wall effectively directed groundwater flow through the East Gate, West Gate, and Far West Gate during 2023. Previous pilot testing has shown that the Center Gate is blocked to groundwater flow due to the presence of iron bacteria biofouling in the upgradient portions of the GAC and pea gravel media in this gate (Farallon 2017). Potentiometric surface maps from March and September 2023 (Figures 2 and 3, respectively) and differential elevation calculations (Table 5) indicate that groundwater flows generally to the west to northwest through the barrier wall.

2.2.10 Service Interruptions

HCC system operations were occasionally interrupted for short periods during 2023 prior to passive mode operation due to utility power outages, to perform maintenance, change out GAC and/or sand filter media, optimize system parameters, or make repairs. Two service interruptions exceeded 48 hours as summarized below:

- Manual shutdown of the HCC system occurred on February 13, 2023, ahead of a scheduled GAC changeout by Pacific Coast Carbon. The HCC system was restarted on February 15, 2023.
- Manual shutdown of the HCC system occurred on March 30, 2023, ahead of a scheduled GAC changeout by Pacific Coast Carbon. The HCC system was restarted on April 1, 2023.

2.2.11 HCC System Shutdown

The pump and treat component of the HCC system was shut down on July 18, 2023, following Ecology approval, allowing for passive mode operations. HCC system passive operation and maintenance and system restart requirements are summarized in the 2023 O&M Manual (Arcadis 2023). In accordance with the 2023 O&M Manual, the pump and treat portion of the HCC system has been reconfigured to be maintained in a state of readiness and allow for intermittent operation without extracting, treating, or discharging water.

2.2.12 Biosparge System

A biosparge system was installed at the Site from July 7, 2023 through August 3, 2023 to address residual LNAPL upgradient of the HCC system barrier wall near the West Gate. The biosparge system was constructed in accordance with the Biosparge Pilot Study and Engineering Design Work Plan dated October 2, 2020 (Farallon 2020a), with some modifications based on subsequent discussions with Ecology in a meeting with BNSF, Arcadis, and Ecology on February 23, 2023 (BNSF, Arcadis, and Ecology 2023). During this meeting, several design modifications were discussed that were intended to improve reliability and functionality of the biosparge system.

Design modifications discussed during the February 2023 meeting that were implemented in the final remedial design included the reuse of existing subsurface piping for air conveyance to the individual biosparge wells using dedicated piping to each well, the construction of an air manifold with electric solenoid valves and individual well flow meters in the HCC system building where the biosparge blower is located to control and measure air flow into each biosparge well, the installation of a rotary claw compressor rather than a reciprocating piston compressor, and the installation of an air-to-air heat exchanger to cool the air and mitigate excessive temperatures to the high density polyethylene piping.

In the February 2023 meeting, Ecology requested that BNSF implement biosparge operations at approximately the same time that the HCC system switched from active to passive operation (BNSF, Arcadis, and Ecology 2023). Although Ecology recognized that passive operations of the HCC system is sufficient to meet the applicable cleanup levels based on the results of a 24-month HCC system passive operation pilot study (Ecology 2023a), operation of the biosparge system should accelerate the overall restoration timeframe by treating petroleum hydrocarbons upgradient of the passive GAC west gate where LNAPL and residual dissolved phase hydrocarbon concentrations are present at concentrations above the RL.

2.3 Biosparge System Description

The biosparge system consists of the following:

- Four biosparge wells (BS-1 through BS-4) located near the West Gate of the HCC system (near 5th Street North), as shown on Figure 1;
- A rotary claw compressor (Busch, Model MM1104) controlled by a variable frequency drive;
- An air-to-air heat exchanger (Xchanger, Inc., Model AA-250, 1 horsepower);
- A biosparge manifold with solenoid valves, flow rotameters, and valves to direct air flow into each biosparge well;
- Instrumentation to monitor system temperatures and pressures;

- A Computer-based control system to monitor system parameters and shut down the system if pressure or temperature exceed user-defined setpoints; and
- Subsurface piping dedicated to each biosparge well.

The biosparge system is also equipped with a telemetry system that allows both local and remote access to equipment operating status and several operating parameters (system pressure and temperature), as well as notifications of a system shutdown in the event of a power outage or other alarm condition (system high pressure or high temperature). The human-machine interface on the computer will also display operating time of the biosparge blowers, heat exchanger fan, and individual well solenoid valves.

A process instrument and flow diagram of the biosparge system is presented on Figure 4. Manifold details are presented on Figure 5.

2.4 Installation and Startup

The biosparge wells were installed by Cascade Environmental on July 6 and July 7, 2023, under the direction of an Arcadis geologist. Glacier Environmental Services performed the piping modifications and assembled the biosparge system and manifold in July and August 2023. Electrical connections were made by SHJ Electrical under a subcontract to Glacier Environmental Services in early August 2023. Arcadis performed programmable logic controller and human-machine interface programming to incorporate the new biosparge system into the existing HCC water treatment system programmable logic controller and computer control system. System commissioning activities were conducted in early August, and the biosparge system was started on August 3, 2023.

2.5 Biosparge System Operations and Maintenance

Operation and maintenance activities consist of weekly remote monitoring and quarterly site visits. System operating parameters are recorded during the site visits on field sheets. Data collected include date and time of site visit, system operating status on arrival and departure, hour meter readings, variable frequency drive parameters, temperatures, pressures, air flowrate into each biosparge well, and well head pressures. Biosparge system operating data are presented in Table 6. As indicated in Table 6, the biosparge system operated approximately 2,890 hours during the period between August 3 and December 31, 2023. Air injection flow rates ranged from approximately 3.8 to 7.5 standard cubic feet per minute per well at wellhead injection pressures of approximately 3.5 to 7 pounds per square inch gauge.

3 Results of HCC System Groundwater Monitoring

The results of site-wide groundwater monitoring conducted in 2023 are presented in the 2023 Annual Long-Term Monitoring Report (Arcadis 2024). The results of groundwater monitoring conducted in 2023 to assess HCC system performance are summarized below.

Downgradient of the HCC system barrier wall, groundwater flows toward the west-northwest and roughly parallel to the Skykomish River. South of the barrier wall, groundwater flows toward the northwest. The groundwater flow directions observed in 2023 were consistent with previous years. Groundwater elevation contours and interpreted groundwater flow directions derived from the site-wide groundwater monitoring data for March and September 2023 are shown on Figures 2 and 3, respectively. Groundwater elevation contours were not prepared for the June

and December 2023 monitoring events, as a limited subset of monitoring wells are gauged for those events and do not provide a complete representation of groundwater flow at the Site. The groundwater elevation differential evaluation across the four gates, included in Table 5, confirm groundwater is flowing through the gates as designed except for the Center Gate, which remains blocked due to biofouling.

Groundwater analytical results for locations used to monitor HCC performance are summarized below. Groundwater field parameter data are summarized in Table 7. Groundwater analytical results for DRO, HO, and combined DRO/HO are summarized in Table 8. Groundwater elevation and LNAPL thickness data from the quarterly HCC monitoring events are summarized in Table 9. Figures 6 through 9 show combined DRO/HO concentrations in groundwater and measured LNAPL thicknesses at the monitoring locations used to assess HCC system performance, as described in Sections 4.1 through 4.7. Laboratory analytical reports are included as Appendix A, and data validation reports are included as Appendix B.

3.1 Sentry Wells

The 20 sentry wells (wells S1-AU, S2-BD, etc.) were sampled during the March, June, September, and December quarterly groundwater monitoring events. LNAPL was not observed in any of the sentry wells (Table 9; Figures 6 through 9).

DRO and HO were not detected at concentrations above the laboratory method reporting limit in 9 of 20 wells sampled. The 11 sentry wells (S1-BU, S2-AU, S2-BD, S2-BU, S3-AD, S3-AU, S3-BU, S3-CD, S4-AU, S4-CD, and S4-CU) with detections during 2023 are described below:

- Combined DRO/HO was detected at a concentration of 398 µg/L in the December 2023 groundwater sample collected from upgradient sentry well S1-BU in the east vault of the Far West Gate (Table 8; Figure 9). Combined DRO/HO was not detected at samples collected from S1-BU in March, June, or September 2023. Combined DRO/HO was not detected at the corresponding down-gradient well S1-BD throughout 2023.
- Combined DRO/HO exceeded the RL at a concentration of 640 µg/L in December 2023 from upgradient sentry well S2-AU in the west vault of the West Gate (Table 8; Figure 9). Combined DRO/HO was not detected at S2-AU in March, June, or September 2023. Combined DRO/HO was not detected at the corresponding down-gradient well S2-AD throughout 2023.
- Combined DRO/HO was detected at the upgradient well S2-BU during all 2023 sampling events (Table 8; Figures 6 through 9). Combined DRO/HO exceeded the RL during the September and December 2023 events with concentrations of 1,200 and 1,640 µg/L, respectively. S2-BU is in the upgradient GAC and pea gravel chamber within its vault. All upgradient sentry wells are paired with a down-gradient sentry well located in the down-gradient GAC and pea gravel chamber in the same vault to evaluate the effectiveness of groundwater treatment. Combined DRO/HO was detected at a concentration of 148 µg/L in the September 2023 groundwater sample collected from down-gradient sentry well S2-BD in the east vault of the West Gate (Table 8; Figure 8). Combined DRO/HO was not detected in S2-BD during the March, June, or December 2023 events.
- Combined DRO/HO was detected at a concentration of 278 µg/L in the December 2023 groundwater sample collected from down-gradient sentry well S3-AD in the west vault of the Center Gate (Table 8; Figure 9). Combined DRO/HO was not detected in S3-AD samples from March, June, or September 2023. Combined DRO/HO was detected at the corresponding upgradient well S3-AU at concentrations of 169 (estimated) and

219 µg/L during the March and June 2023 sampling events, respectively, and not detected during the September and December 2023 events.

- Combined DRO/HO was detected at a concentration of 119 µg/L in the December 2023 groundwater sample collected from upgradient sentry well S3-BU in the center vault of the Center Gate (Table 8; Figure 9). Combined DRO/HO was not detected in the duplicate sample collected from S3-BU during the December 2023 sampling event. Combined DRO/HO was not detected from S3-BU samples in March, June, or September 2023. Combined DRO/HO was not detected in samples collected from the corresponding down-gradient well S3-BD throughout 2023.
- Combined DRO/HO was detected at a concentration of 308 µg/L in the December 2023 groundwater sample collected from down-gradient sentry well S3-CD in the east vault of the Center Gate (Table 8; Figure 9). Combined DRO/HO was not detected from S3-CD samples in March, June, or September 2023. Combined DRO/HO was not detected at the corresponding upgradient well S3-CU throughout 2023.
- Combined DRO/HO was detected at a concentration of 269 µg/L in the December 2023 groundwater sample collected from upgradient sentry well S4-AU in the west vault of the East Gate (Table 8; Figure 9). Combined DRO/HO was not detected from S4-AU samples in March, June, or September 2023. Combined DRO/HO was not detected at the corresponding down-gradient well S4-AD throughout 2023.
- Combined DRO/HO was detected at a concentration of 300 µg/L in the December 2023 groundwater sample collected from down-gradient sentry well S4-CD in the east vault of the East Gate (Table 8; Figure 9). Combined DRO/HO was not detected in S4-CD samples in March, June, or September 2023. Combined DRO/HO was detected at the corresponding upgradient well S4-CU during the March, September, and December 2023 sampling events. The parent sample for S4-CU was not detected in September 2023, but the duplicate sample was detected at a concentration of 320 µg/L. The December 2023 sample for S4-CU exceeded the RL with a concentration of 510 µg/L.

3.2 Gate Wells

All four gate wells (GW-1 through GW-4) were gauged and sampled during the groundwater monitoring events in March, June, September, and December 2023, except for GW-1, which was sampled in October due to inaccessibility during the September 2023 event. All four gate wells had reported detections of petroleum hydrocarbons during 2023 and are described below:

- Combined DRO/HO was detected at a concentration of 260 µg/L in the October 2023 groundwater sample and 120 µg/L in the December 2023 groundwater sample collected from gate well GW-1 (Table 8; Figures 8 and 9).
- Combined DRO/HO was detected at a concentration of 320 µg/L in the December 2023 groundwater sample collected from gate well GW-2 (Table 8; Figure 9).
- Combined DRO/HO was detected during all 2023 samples collected from gate well GW-3. The March 2023 sample exceeded the RL with an estimated concentration of 630 µg/L. The groundwater samples from GW-3 were also analyzed following a silica gel cleanup preparation process with reported concentrations being lower for all 2023 sampling events with the December 2023 sample having a non-detect value (Table 8; Figures 6 through 9).

- Combined DRO/HO exceeded the RL at a concentration of 820 µg/L in the September 2023 groundwater sample collected from gate well GW-4 (Table 8; Figure 8). GW-4 was not sampled in December 2023 because the well was inaccessible due to surface water ponding.

LNAPL was not observed in any of the gate wells (Table 9; Figures 6 through 9). Gate well GW-3 is immediately north and down-gradient of the Center Gate, where substantial biofouling by iron bacteria has been observed (Farallon 2014). Between June 2014 and December 2018, combined DRO/HO concentrations ranged between 63 and 1,020 µg/L. Historically (between April 2009 and June 2014), combined DRO/HO concentrations fluctuated over a smaller range of 34 to 184 µg/L. Increased concentration ranges in gate well GW-3 since June 2014 are the result of interference from biogenic substances and petroleum metabolites, as evidenced by split sampling with and without silica gel cleanup. Combined DRO/HO concentrations in all the samples prepared with silica gel were less than the combined DRO/HO concentrations in the samples not prepared with silica gel, as shown on the trend plot included in Appendix C. These data demonstrate that the results for the samples not prepared with silica gel are biased high due to biogenic and petroleum metabolite interferences originating from the biofouled gate.

The results at gate well GW-4 may have been influenced by surface water intrusion as the area is intermittently flooded and the combined DRO/HO has not historically exceeded the RL at this location. The integrity of this well will be reassessed in March 2024 and any observed deficiencies will be addressed. Additionally, samples will be analyzed with and without silica gel cleanup to assess for the potential influence of biogenic interference.

3.3 End Wells

The two end wells (wells EW-1 and EW-2A) were gauged and sampled during the March, June, September, and December 2023 groundwater monitoring events. Combined DRO/HO was not detected at concentrations exceeding the laboratory method reporting limit in groundwater samples collected from the end wells during the March and June 2023 sampling events. Combined DRO/HO was detected in groundwater samples collected from end well EW-2A during September 2023 and from end well EW-1 during December 2023 with concentrations of 258 and 109 µg/L, respectively (Table 8; Figures 8 and 9). LNAPL was not observed in either of the end wells (Table 9).

3.4 Monitoring Wells

The HCC system monitoring well network includes 1B-W-23, 2A-W-40, 2A-W-41, 2A-W-42, and 5-W-43. Reported combined DRO/HO concentrations in groundwater samples collected from these wells were less than the RL, except for the samples collected in September and December 2023 from 2A-W-41, which had reported concentrations of 520 µg/L and 500 µg/L, respectively (Table 8; Figures 8 and 9). LNAPL was not observed in any of the wells (Table 9; Figures 6 through 9).

Between September 2013 and December 2018, reported combined DRO/HO detections in monitoring well 2A-W-41 ranged from 56 to 1,100 µg/L, with three values exceeding the RL. Historically (between December 2009 and September 2013), combined DRO/HO results from monitoring well 2A-W-41 ranged from 26 to 175 µg/L. Monitoring well 2A-W-41 is west and down-gradient of gate well GW-3 and the Center Gate and is also affected by biogenic substances and petroleum metabolites, similar to gate well GW-3. Combined DRO/HO concentrations in all the samples prepared with silica gel were less than the combined DRO/HO concentrations in the samples

not prepared with silica gel, as shown on the trend plot included in Appendix C. These data demonstrate that the combined DRO/HO results for the samples not prepared with silica gel are biased high due to biogenic and petroleum metabolites originating from the biofouled gate.

3.5 Piezometers

The 14 piezometers were gauged for the presence or absence of LNAPL and sheen during the March, June, September, and December 2023 groundwater monitoring events. Measurable LNAPL was observed in piezometers PZ-3S, PZ-5S, and PZ-6S on the southern (upgradient) side of the barrier wall (Table 9):

- **PZ-3S:** A sheen was observed in March 2023, and measurable LNAPL was recorded in June (0.3 foot), September (0.01 foot), and December (0.01 foot) 2023. LNAPL was not observed in the down-gradient piezometer (PZ-3N) paired with PZ-3S.
- **PZ-5S and PZ-5N:** Measurable LNAPL was recorded in PZ-5S in March (0.05 feet), June (0.05 foot), September (0.01 foot), and December (0.01 foot) 2023. The measured LNAPL thicknesses in 2023 were an overall decrease in LNAPL thickness compared with observations from 2022. LNAPL was not observed in the down-gradient piezometer (PZ-5N) paired with PZ-5S.
- **PZ-6S:** A sheen was observed in March and June 2023, and measurable LNAPL was recorded in September 2023 (0.05 foot). No measurable LNAPL was observed in December 2023 at PZ-6S. LNAPL observations at piezometer PZ-6S are consistent with observations from 2022. LNAPL was not observed in the down-gradient piezometer (PZ-6N) paired with PZ-6S.

LNAPL thickness trend plots for HCC system monitoring locations that historically have contained measurable LNAPL are included in Appendix D.

3.6 Recovery Wells

The 10 recovery wells were gauged for the presence or absence of LNAPL during the March and September 2023 groundwater monitoring events. There was no measurable LNAPL observed in recovery wells RW-01, RW-02, RW-03, RW-04, RW-05, RW-06, and RW-09. LNAPL observed as sheen was reported in recovery wells RW-3, RW-07, RW-08, and RW-09, and measurable LNAPL was observed in recovery wells RW-07 and RW-08 (Table 9):

- **RW-07:** A sheen was observed in March 2023. Measurable LNAPL was recorded in September (0.02 foot) 2023. LNAPL thickness decreased from measurable LNAPL in March (0.81 foot) and June (1.51 foot) 2022 to a sheen in March 2023 and 0.02 foot in September 2023.
- **RW-08:** A sheen was observed in March 2023. Measurable LNAPL was recorded in September (0.01 foot) 2023. LNAPL thickness decreased from measurable LNAPL in March (7.10 feet) and June (2.12 feet) 2022 to a sheen in March 2023 and 0.01 foot in September 2023.

LNAPL thickness trend plots for HCC system monitoring locations that historically (within the past five years) have contained measurable LNAPL are included in Appendix D.

3.7 Barrier Wall Gate Oil–Water Separator Chambers

Each flow-through treatment gate in the HCC system barrier wall consists of two or three concrete vaults. Each gate contains an OWS chamber on the upgradient side of the gate (as shown on Figure 1, which shows a typical construction of a treatment gate). During the March, June, September, and December 2023 monitoring events, the gate OWS vaults were monitored for LNAPL (Table 9). There was no measurable LNAPL observed in the OWS chambers in 2023, and only a sheen was observed in September 2023 in the south chamber of the East Gate east vault OWS.

4 Data Validation and Usability

Quality assurance and quality control samples were collected and analyzed for both field and laboratory operations to monitor overall precision and accuracy throughout the groundwater monitoring period in accordance with the Final Long-Term Monitoring Plan (Farallon 2020b). Field quality assurance and quality control samples included field duplicate and field blank samples. Field duplicate samples were collected at a frequency of one duplicate sample per 10 samples, or one duplicate sample per batch of samples if less than 10 samples were collected. Duplicate samples were treated as separate samples from the originals (assigned unique sample numbers) and not identified to the laboratory as duplicate samples. Field duplicate samples were documented on the field sampling form. At least one field blank sample was collected during each groundwater sampling event. Matrix spike and matrix spike duplicate samples were also collected at a frequency of one per 20 samples collected, or one per batch if less than 20 samples were collected. Data validation was conducted in accordance with the following guidance documents:

- United States Environmental Protection Agency (USEPA) – Contract Laboratory Program National Functional Guidelines for Organic Superfund Methods Data Review (2020a), with reference to the historical Contract Laboratory Program National Functional Guidelines for Organic Data Review (USEPA 1999), as appropriate.
- USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Methods Data Review (2020b), with reference to the historical Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (USEPA 2002), as appropriate.

Quality assurance and quality control sample results are discussed in the data validation reports included as Appendix B. The laboratory quality control criteria were met, unless otherwise noted, and all data were deemed usable. The qualified validated laboratory analytical reports are included as Appendix B.

5 Conclusions

The groundwater monitoring results from 2023 and previous years indicate that the HCC system, particularly the HCC system barrier wall, continues to be effective in meeting the cleanup objective. Based on the groundwater monitoring results from 2022 and the results of the passive operation pilot study conducted between January 2019 and December 2020 (Farallon 2018b), Ecology approved passive operation of the HCC system, along with the operation of a biosparge system. Although Ecology recognized that passive operations of the HCC system is sufficient to meet the applicable cleanup levels based on the results of a 24-month HCC system passive operation pilot study (Ecology 2023a), operation of the biosparge system should accelerate the overall restoration timeframe by treating petroleum hydrocarbons upgradient of the passive GAC west gate where LNAPL and residual dissolved phase hydrocarbon concentrations are present at concentrations above the RL.

2023 Annual Hydraulic Control and Containment System Operations Report

Groundwater monitoring is conducted in accordance with the Final Long-Term Monitoring Plan (Farallon 2020b). On July 18, 2023, the HCC system was transitioned from active to passive operation, and it continued to operate in passive mode through 2023 since this time. On July 7, 2023, biosparge wells were installed and the biosparge system was started on August 3, 2023. Operation and maintenance will be conducted approximately bimonthly in 2024 to optimize operation of the biosparge system.

In 2023, measured LNAPL thicknesses were generally consistent in piezometers PZ-6S and PZ-3S, and decreased in piezometer PZ-5S and recovery wells RW-07 and RW-08, compared with observations from 2022. Over the lifecycle of the data record, measured LNAPL thicknesses in these piezometers and wells have exhibited an overall decreasing or stable trend, with minor variability (Appendix D).

In 2024, groundwater monitoring and HCC performance monitoring will be conducted in accordance with the 2011 Operation and Maintenance Manual for the Hydraulic Control and Containment System (AECOM 2011) and 2014 addendum (Farallon 2014). The biosparge system will be operated in accordance with the 2023 O&M Manual (Arcadis 2023). Groundwater samples collected from gate well GW-3 and monitoring well 2A-W-41 will continue to be analyzed for DRO and HO hydrocarbons both with and without silica gel cleanup preparation. Results will be assessed in accordance with Ecology's guidance on silica gel cleanup in Washington State (Ecology 2023c).

6 References

- AECOM. 2009. 2008 Skykomish Remediation—As-Built Completion Report, Former Maintenance and Fueling Facility. Prepared for BNSF Railway Company. August.
- AECOM. 2010. 2009 Skykomish Remediation—As-Built Completion Report, BNSF Former Maintenance and Fueling Facility, Skykomish, Washington. Prepared for BNSF Railway Company. June 10.
- AECOM. 2011. 2011 Operation and Maintenance Manual for the Hydraulic Control and Containment System, Former Maintenance and Fueling Facility—Skykomish, WA. Prepared for BNSF Railway Company. April 8.
- Arcadis. 2023. 2023 Operation and Maintenance Manual for the Hydraulic Control and Containment System (Draft), Former Maintenance and Fueling Facility—Skykomish, WA. Prepared for BNSF Railway Company. April 14.
- Arcadis. 2024. 2023 Annual Long-Term Monitoring Report, Former Maintenance and Fueling Facility—Skykomish, WA. Prepared for BNSF Railway Company. March.
- BNSF, Arcadis, and Ecology. 2023. Skykomish Transition Meeting. Shoreline, WA. February 23.
- Ecology. 2007. Cleanup Action Plan for BNSF Former Maintenance and Fueling Facility, Skykomish, Washington. Exhibit B of Consent Decree No. 07-2-33672-9 SEA between the Washington State Department of Ecology and BNSF Railway Company. October.
- Ecology. 2020a. Email from Ronald Timm to Shane DeGross (BNSF) and Amy Essig Desai and Peter Kingston (Farallon) re: Skykomish—HCC Operations. January 24.
- Ecology. 2020b. Email from Ronald Timm to Shane DeGross (BNSF) re: Skykomish—HCC Operations. June 25.
- Ecology. 2020c. Email from Tanner Bushnell (Ecology) to Shane DeGross (BNSF) re: Skykomish—Biosparge Pilot Study and Engineering Design Work Plan. October 30.
- Ecology. 2023a. Email from Tanner Bushnell (Ecology) to Shane DeGross (BNSF) re: Skykomish—CD Amendment—Transition to Passive HCC Operations. July 17.
- Ecology. 2023b. Fourth Amendment to Consent Decree. BNSF Former Maintenance and Fueling Facility, Skykomish, Washington. No. 07-2-33672-9 SEA. September 29.
- Ecology. 2023c. Guidance for Silica Gel Cleanup in Washington State. Toxics Cleanup Program. Publication No. 22-09-059. November.
- ENSR Corporation. 2008a. Plans and Specifications for 2008 Remediation. Prepared for BNSF Railway Company. Addenda Added March 11, March 14, and March 20, 2008. March.
- ENSR Corporation. 2008b. Hydraulic Control and Containment System Special Design Report, BNSF Former Maintenance and Fueling Facility—Skykomish, WA. Prepared for BNSF Railway Company. August.
- Farallon. 2014. 2014 Addendum to the Operation and Maintenance Manual for the Hydraulic Control and Containment, BNSF Former Maintenance and Fueling Facility, Skykomish, Washington. Prepared for BNSF Railway Company. September 10.

2023 Annual Hydraulic Control and Containment System Operations Report

- Farallon. 2017. Hydraulic Control and Containment System Optimization and Pilot Testing Report, BNSF Former Maintenance and Fueling Facility, Skykomish, Washington. Prepared for BNSF Railway Company. February 21.
- Farallon. 2018a. 2017 Annual Hydraulic Control and Containment System Operations Report, BNSF Former Maintenance and Fueling Facility, Skykomish, Washington. Prepared for BNSF Railway Company. July 9.
- Farallon. 2018b. HCC System Passive Operation Pilot Study Work Plan, BNSF Former Maintenance and Fueling Facility, Skykomish, Washington. Prepared for BNSF Railway Company. November 29.
- Farallon. 2020a. Biosparge Pilot Study and Engineering Design Work Plan. BNSF Former Maintenance and Fueling Facility, Skykomish, Washington. Consent Decree No. 07-2-33672-9 SEA. October 2.
- Farallon. 2020b. Final Long-Term Monitoring Plan BNSF Former Maintenance and Fueling Facility, Skykomish, Washington, Consent Decree NO. 07-2-33672-9 SEA. November 26.
- USEPA. 1999. Contract Laboratory Program National Functional Guidelines for Organic Data Review, OSWER 9240.1-05A-P. October.
- USEPA. 2002. Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, OSWER 9240.1-45, October.
- USEPA. 2020a. CLP National Functional Guidelines for Organic Superfund Methods Data Review, document number EPA 540-R-20-005, November.
- USEPA. 2020b. CLP National Functional Guidelines for Inorganic Superfund Methods Data Review, document number EPA 542-R-20-006, November.

Tables

Table 1
HCC Water Treatment System Discharge Flow Rates
2023 Annual HCC System Operations Report
BNSF Railway Company
Former Maintenance and Fueling Facility, Skykomish, WA



Date	Cumulative Discharge Volume Since Water Treatment System Start-Up (gallons)	Calculated Average Daily Flow Rate (gallons per minute)
NPDES Permit Discharge Limit¹		100
1/1/2023	151,834,735	0
1/2/2023	151,834,735	0
1/3/2023	151,840,403	23.62
1/4/2023	151,874,367	23.59
1/5/2023	151,907,955	23.33
1/6/2023	151,940,859	22.85
1/7/2023	151,973,167	22.44
1/8/2023	152,005,051	22.14
1/9/2023	152,036,815	22.06
1/10/2023	152,068,087	21.72
1/11/2023	152,099,515	21.83
1/12/2023	152,129,563	20.87
1/13/2023	152,160,051	21.17
1/14/2023	152,189,539	20.48
1/15/2023	152,217,743	19.59
1/16/2023	152,245,779	19.47
1/17/2023	152,273,847	19.49
1/18/2023	152,302,051	19.59
1/19/2023	152,330,859	20.01
1/20/2023	152,360,119	20.32
1/21/2023	152,388,827	19.94
1/22/2023	152,417,151	19.67
1/23/2023	152,444,935	19.29
1/24/2023	152,475,007	20.88
1/25/2023	152,505,535	21.20
1/26/2023	152,536,647	21.61
1/27/2023	152,566,615	20.81
1/28/2023	152,597,207	21.24
1/29/2023	152,627,855	21.28
1/30/2023	152,658,563	21.33
1/31/2023	152,689,579	21.54
2/1/2023	152,720,871	21.73
2/2/2023	152,752,383	21.88
2/3/2023	152,776,839	16.98

Table 1
HCC Water Treatment System Discharge Flow Rates
2023 Annual HCC System Operations Report
BNSF Railway Company
Former Maintenance and Fueling Facility, Skykomish, WA



Date	Cumulative Discharge Volume Since Water Treatment System Start-Up (gallons)	Calculated Average Daily Flow Rate (gallons per minute)
2/4/2023	152,780,891	2.81
2/5/2023	152,782,835	1.35
2/6/2023	152,784,103	0.88
2/7/2023	152,786,275	1.51
2/8/2023	152,789,499	2.24
2/9/2023	152,798,847	7.79
2/10/2023	152,810,903	8.37
2/11/2023	152,823,075	8.45
2/12/2023	152,834,455	7.90
2/13/2023	152,839,719	21.93
2/14/2023	152,839,787	0.28
2/15/2023	152,843,495	20.60
2/16/2023	152,872,915	20.43
2/17/2023	152,901,855	20.10
2/18/2023	152,930,763	20.08
2/19/2023	152,958,259	19.09
2/20/2023	152,985,003	18.57
2/21/2023	153,007,819	15.84
2/22/2023	153,029,315	14.93
2/23/2023	153,049,987	14.36
2/24/2023	153,069,951	13.86
2/25/2023	153,089,531	13.60
2/26/2023	153,107,839	12.71
2/27/2023	153,126,055	12.65
2/28/2023	153,144,119	12.54
3/1/2023	153,158,963	10.31
3/2/2023	153,190,507	21.91
3/3/2023	153,222,755	22.39
3/4/2023	153,254,523	22.06
3/5/2023	153,285,671	21.63
3/6/2023	153,316,643	21.51
3/7/2023	153,347,679	21.55
3/8/2023	153,378,719	21.56
3/9/2023	153,410,103	21.79
3/10/2023	153,441,795	22.01

Table 1
HCC Water Treatment System Discharge Flow Rates
2023 Annual HCC System Operations Report
BNSF Railway Company
Former Maintenance and Fueling Facility, Skykomish, WA



Date	Cumulative Discharge Volume Since Water Treatment System Start-Up (gallons)	Calculated Average Daily Flow Rate (gallons per minute)
3/11/2023	153,473,807	21.34
3/12/2023	153,505,683	22.14
3/13/2023	153,538,035	22.47
3/14/2023	153,570,759	22.73
3/15/2023	153,603,695	22.87
3/16/2023	153,636,175	22.56
3/17/2023	153,668,351	22.34
3/18/2023	153,700,975	22.66
3/19/2023	153,733,643	22.69
3/20/2023	153,766,327	22.70
3/21/2023	153,799,019	22.70
3/22/2023	153,831,559	22.60
3/23/2023	153,864,327	22.76
3/24/2023	153,897,275	22.88
3/25/2023	153,913,179	11.04
3/26/2023	153,927,155	9.71
3/27/2023	153,940,995	9.61
3/28/2023	153,954,859	9.63
3/29/2023	153,965,775	7.58
3/30/2023	153,965,835	0.33
3/31/2023	153,965,887	0.87
4/1/2023	153,969,655	12.56
4/2/2023	153,990,003	14.13
4/3/2023	154,010,359	14.14
4/4/2023	154,030,539	14.01
4/5/2023	154,050,891	14.13
4/6/2023	154,071,143	14.06
4/7/2023	154,090,775	13.63
4/8/2023	154,109,979	13.34
4/9/2023	154,128,979	13.19
4/10/2023	154,147,951	13.18
4/11/2023	154,166,655	12.99
4/12/2023	154,185,915	13.38
4/13/2023	154,204,659	13.02
4/14/2023	154,223,795	13.29

Table 1
HCC Water Treatment System Discharge Flow Rates
2023 Annual HCC System Operations Report
BNSF Railway Company
Former Maintenance and Fueling Facility, Skykomish, WA



Date	Cumulative Discharge Volume Since Water Treatment System Start-Up (gallons)	Calculated Average Daily Flow Rate (gallons per minute)
4/15/2023	154,241,679	12.42
4/16/2023	154,260,279	12.92
4/17/2023	154,279,103	13.07
4/18/2023	154,297,595	12.84
4/19/2023	154,316,039	12.81
4/20/2023	154,333,851	12.37
4/21/2023	154,351,883	12.52
4/22/2023	154,369,639	12.33
4/23/2023	154,387,271	12.24
4/24/2023	154,396,399	16.90
4/25/2023	154,421,355	17.33
4/26/2023	154,444,947	16.38
4/27/2023	154,467,735	15.83
4/28/2023	154,490,343	15.70
4/29/2023	154,512,447	15.35
4/30/2023	154,534,419	15.26
5/1/2023	154,556,343	15.23
5/2/2023	154,578,471	15.37
5/3/2023	154,600,303	15.16
5/4/2023	154,622,363	15.32
5/5/2023	154,644,467	15.35
5/6/2023	154,666,623	15.39
5/7/2023	154,688,631	15.28
5/8/2023	154,710,827	15.41
5/9/2023	154,733,343	15.64
5/10/2023	154,756,299	15.94
5/11/2023	154,779,075	15.82
5/12/2023	154,802,455	16.24
5/13/2023	154,825,735	16.17
5/14/2023	154,848,379	15.73
5/15/2023	154,867,119	13.01
5/16/2023	154,885,811	12.98
5/17/2023	154,905,463	13.65
5/18/2023	154,924,187	13.00
5/19/2023	154,943,043	13.09

Table 1
HCC Water Treatment System Discharge Flow Rates
2023 Annual HCC System Operations Report
BNSF Railway Company
Former Maintenance and Fueling Facility, Skykomish, WA



Date	Cumulative Discharge Volume Since Water Treatment System Start-Up (gallons)	Calculated Average Daily Flow Rate (gallons per minute)
5/20/2023	154,962,159	13.28
5/21/2023	154,981,135	13.18
5/22/2023	154,999,767	12.94
5/23/2023	155,018,867	13.26
5/24/2023	155,038,035	13.31
5/25/2023	155,056,931	13.12
5/26/2023	155,076,283	13.44
5/27/2023	155,077,607	0.92
5/28/2023	155,078,511	0.63
5/29/2023	155,081,123	1.81
5/30/2023	155,082,191	0.74
5/31/2023	155,085,191	2.08
6/1/2023	155,086,883	1.18
6/2/2023	155,087,551	0.46
6/3/2023	155,087,571	0.01
6/4/2023	155,087,587	0.01
6/5/2023	155,087,607	0.01
6/6/2023	155,087,627	0.01
6/7/2023	155,095,207	5.26
6/8/2023	155,123,359	19.55
6/9/2023	155,152,551	20.27
6/10/2023	155,181,755	20.28
6/11/2023	155,211,267	20.49
6/12/2023	155,240,363	20.21
6/13/2023	155,260,311	13.85
6/14/2023	155,279,695	13.46
6/15/2023	155,299,067	13.45
6/16/2023	155,318,531	13.52
6/17/2023	155,337,679	13.30
6/18/2023	155,357,363	13.67
6/19/2023	155,376,159	13.05
6/20/2023	155,395,223	13.24
6/21/2023	155,414,419	13.33
6/22/2023	155,433,419	13.19
6/23/2023	155,452,583	13.31

Table 1
HCC Water Treatment System Discharge Flow Rates
2023 Annual HCC System Operations Report
BNSF Railway Company
Former Maintenance and Fueling Facility, Skykomish, WA



Date	Cumulative Discharge Volume Since Water Treatment System Start-Up (gallons)	Calculated Average Daily Flow Rate (gallons per minute)
6/24/2023	155,477,603	17.38
6/25/2023	155,503,807	18.20
6/26/2023	155,521,851	15.04
6/27/2023	155,532,419	7.34
6/28/2023	155,557,503	17.42
6/29/2023	155,582,355	17.26
6/30/2023	155,606,819	16.99
7/1/2023	155,631,339	17.03
7/2/2023	155,655,683	16.91
7/3/2023	155,680,379	17.15
7/4/2023	155,702,315	15.23
7/5/2023	155,702,959	0.45
7/6/2023	155,707,959	3.47
7/7/2023	155,735,251	18.95
7/8/2023	155,751,463	11.26
7/9/2023	155,766,859	10.69
7/10/2023	155,782,083	10.57
7/11/2023	155,796,911	10.30
7/12/2023	155,811,731	10.29
7/13/2023	155,826,763	10.44
7/14/2023	155,841,867	10.49
7/15/2023	155,857,299	10.72
7/16/2023	155,872,743	10.73
7/17/2023	155,888,251	10.77
7/18/2023 ²	155,902,383	11.78

Notes:

¹ Discharge limit specified in NPDES Permit No. WA0032123, applicable when the Skykomish River level is less than 928.56 feet NAVD88. Discharge is not allowed when the river level exceeds 928.56 feet NAVD88.

² System switched from active to passive operation on July 18, 2023.

Acronyms and Abbreviations:

HCC = hydraulic control and containment

NAVD88 = North American Vertical Datum of 1988

NPDES = National Pollutant Discharge Elimination System

Table 2
 Total Petroleum Hydrocarbon Concentrations in
 HCC Water Treatment System Influent and Effluent
 2023 Annual HCC System Operations Report
 BNSF Railway Company
 Former Maintenance and Fueling Facility, Skykomish, WA



Sample Location	Sample Date	Sample Identification	Diesel Range Organics	Heavy Oil	Calculated NWTPH-Dx
			Result	Result	
NPDES Permit Discharge Limit			--	--	208
Treatment System Influent (Primary GAC Vessel Influent)	1/5/2023	BEFORE GAC-1523	800	200	1,000
	1/19/2023	BEFORE GAC-11923	1,000	210	1,210
	2/3/2023	BEFORE GAC-2323	860	150	1,010
	2/15/2023	BEFORE GAC-21523	500	120	620
	3/1/2023	BEFORE GAC-3123	1,100	200	1,300
	3/14/2023	BEFORE GAC-31423	740	180	920
	3/29/2023	BEFORE GAC-32923	750	200	950
	4/13/2023	BEFORE GAC-41323	700	130	830
	4/24/2023	BEFORE GAC-42423	670	160	830
	5/11/2023	BEFORE GAC-51123	840	260	1,100
	5/22/2023	BEFORE GAC-52223	530	130	660
	6/7/2023	BEFORE GAC-6723	<100	<100	<15.5
	6/23/2023	BEFORE GAC-62323	630	110	740
6/30/2023	BEFORE GAC-63023	610	130	740	
9/26/2023	BEFORE GAC-092623	190	110	300	
Treatment System Effluent (Secondary GAC Vessel Effluent)	1/5/2023	HCC EFF-1523	<100	<100	<15.5
	1/19/2023	HCC EFF-11923	<100	<100	<15.5
	2/3/2023	HCC EFF - 2323	<100	<100	<15.5
	2/15/2023	HCC EFF - 21523	<100	<100	<15.5
	3/1/2023	HCC EFF - 3123	<100	<100	<15.5
	3/14/2023	HCC EFF - 3123	<100	<100	<15.5
	3/29/2023	HCC EFF - 3123	<100	<100	<15.5
	4/13/2023	HCC EFF - 41323	<100	<100	<15.5
	4/24/2023	HCC EFF - 42423	<100	<100	<15.5
	5/11/2023	HCC EFF - 51123	<100	<100	<15.5
	5/22/2023	HCC EFF - 52223	<100	<100	<15.5
	6/7/2023	HCC EFF - 6723	<100	<100	<15.5
	6/23/2023	HCC EFF - 62323	<100	<100	<15.5
6/30/2023	HCC EFF - 63023	<100	<100	<15.5	
9/26/2023	HCC EFF - 092623	<100	<100	<15.5	

Notes:

1. Results in **bold** font indicate the compound was detected at a concentration greater than the laboratory reporting limit.
2. Results in **bold** font and shaded grey indicate the compound was detected at a concentration greater than the site-specific remediation level. The remediation level is not applicable to vaults in the barrier wall treatment gates.
3. All results are reported in micrograms per liter.
4. Analyzed by Northwest Method NWTPH-DX without silica gel cleanup.
5. Calculated NWTPH-Dx is the sum of diesel range organic and heavy oil, using half the method detection limit for non-detect results. Data reported previously in NPDES Discharge Monitoring Reports pursuant to NPDES Permit No. WA0032123.
6. Discharge limit specified in NPDES Permit No. WA0032123.

Acronyms and Abbreviations:

< = analyte not detected at or exceeding the reported concentration
 EFF = effluent
 GAC = granular activated carbon
 HCC = hydraulic control and containment
 NPDES = National Pollutant Discharge Elimination System

Table 3
pH in HCC Water Treatment System Effluent
2023 Annual HCC System Operations Report
BNSF Railway Company
Former Maintenance and Fueling Facility, Skykomish, WA



Sample Date	pH (Standard Units)
NPDES Permit Discharge Limit	6.5-8.5
1/5/2023	6.98
1/19/2023	7.10
2/3/2023	7.70
2/15/2023	7.40
3/1/2023	7.19
3/14/2023	7.26
3/29/2023	7.37
4/13/2023	7.49
4/24/2023	7.18
5/11/2023	7.27
5/22/2023	7.16
6/7/2023	7.37
6/23/2023	7.47
9/26/2023	7.41

Notes:

1. Data reported previously in NPDES Discharge Monitoring Reports pursuant to NPDES Permit No. WA0032123.
2. Discharge limit specified in NPDES Permit No. WA0032123.

Acronyms and Abbreviations:

HCC = hydraulic control and containment
 NPDES = National Pollutant Discharge Elimination System

Table 4
Metal Concentration in HCC Water Treatment System Effluent
2023 Annual HCC System Operations Report
BNSF Railway Company
Former Maintenance and Fueling Facility, Skykomish, WA



Sample Date	Sample Identification	Analytical Results (micrograms per liter)	
		Total Lead	Total Arsenic
NPDES Permit Discharge Limit		17.5	360
03/01/2023	HCC EFF - 3123	< 1.0	< 1.0
06/30/2023	HCC EFF - 63023	< 1.0	< 1.0
09/26/2023	HCC EFF - 092623	< 1.0	1.1

Notes:

1. Analyzed by U.S. Environmental Protection Agency Method 200.8. Data reported previously in NPDES Discharge Monitoring Reports pursuant to NPDES Permit No. WA0032123.
2. Discharge limit specified in NPDES Permit No. WA0032123.

Acronyms and Abbreviations:

< = analyte not detected at or exceeding the method reporting limit
 EFF = effluent
 HCC = hydraulic control and containment
 NPDES = National Pollutant Discharge Elimination System

Table 5
HCC System Barrier Wall Groundwater Elevations
2023 Annual HCC System Operations Report
BNSF Railway Company
Former Maintenance and Fueling Facility, Skykomish, WA



Groundwater Elevations at Piezometers (feet NAVD88) and Elevation Differentials at Piezometer Pairs (feet)																				
Date	PZ-1	PZ-2S	PZ-2N	Elevation Differential at PZ-2S/PZ-2N	PZ-3S	PZ-3N	Elevation Differential at PZ-3S/PZ-3N	PZ-4S	PZ-4N	Elevation Differential at PZ-4S/PZ-4N	PZ-5S	PZ-5N	Elevation Differential at PZ-5S/PZ-5N	PZ-6S	PZ-6N	Elevation Differential at PZ-6S/PZ-6N	PZ-7S	PZ-7N	Elevation Differential at PZ-7S/PZ-7N	PZ-8
3/27/2023	925.42	928.19	922.33	5.86	925.09	920.43	4.66	924.67	920.65	4.02	929.21	917.67	11.54	923.78	917.57	6.21	922.69	918.86	3.83	919.41
6/13/2023	924.68	925.91	922.21	3.70	925.14	920.41	4.73	924.34	920.66	3.68	923.87	917.90	5.97	923.66	917.86	5.80	922.52	917.86	4.66	919.59
9/25/2023	923.03	922.51	920.59	1.92	921.72	DRY	--	920.388	920.33	0.05	920.69	917.15	3.54	919.80	916.36	3.44	916.89	916.39	0.50	915.60
12/4/2023	928.20	926.65	922.25	4.40	927.82	DRY	--	920.208	920.31	-0.11	926.79	917.42	9.37	920.38	917.40	2.98	923.29	917.48	5.81	922.98
Average Elevation Differential				3.97			4.70			1.91			7.60			4.61			3.70	
Maximum Elevation Differential				5.86			4.73			4.02			11.54			6.21			5.81	
Minimum Elevation Differential				1.92			4.66			0.05			3.54			2.98			0.50	

Note:

1. Groundwater elevations are measured quarterly using water level meters and are referenced to NAVD88.
2. Positive elevation differentials indicate a groundwater gradient of south to north, through the granular activated carbon treatment gates.

Acronyms and Abbreviations:

HCC = hydraulic control and containment
 NAVD88 = North American Vertical Datum of 1988

Table 6
 Biosparge System Operational Data
 2023 Annual HCC System Operations Report
 BNSF Railway Company
 Former Maintenance and Fueling Facility, Skykomish, WA



Date	Biosparge Compressor Status					Heat Exchanger			Temperatures and Pressures				Comments
	Status on Arrival	Status on Departure	Approximate Runtime (hours)	Speed (Hz)	Amps	Status on Arrival	Status on Departure	Approximate Runtime (hours)	Blower Outlet Temperature (°F)	Heat Exchanger Outlet Temp (°F)	Blower Outlet Pressure (psig)	Heat Exchanger Outlet Pressure (psig)	
08/03/23	Off	On	0	60	4.8	Off	On	0	186	83	14.5	14.5	System startup. All biosparge wells are open 24 hours a day, 7 days a week.
12/05/23	On	On	2,250	50	--	On	Off	2,250	140	97	18	18	Heat exchanger turned off.

Note:

1. System operating parameters were recorded upon arrival unless system was shutdown on arrival.

Acronyms and Abbreviations:

°F = degree Fahrenheit
 amp = ampere
 HCC = hydraulic control and containment
 Hz = hertz
 psig = pound per square inch gauge

Table 6
 Biosparge System Operational Data
 2023 Annual HCC System Operations Report
 BNSF Railway Company
 Former Maintenance and Fueling Facility, Skykomish, WA



Date	Manifold Flow Rate (scfm)				Manifold Injection Pressure (psig)				Well Head Pressure (psig)				Comments
	BS-1	BS-2	BS-3	BS-4	BS-1	BS-2	BS-3	BS-4	BS-1	BS-2	BS-3	BS-4	
08/03/23	6.2	6.6	6.0	6.0	6.0	9.0	5.5	4.0	5.0	7.0	5.0	3.5	System startup. All biosparge wells are open.
12/05/23	5.0	7.5	3.8	6.0	7.0	7.0	7.5	6.0	6.0	6.0	7.0	5.0	All biosparge wells are open.

Note:

1. Biosparge well parameters were recorded upon arrival unless system was shutdown on arrival.

Acronyms and Abbreviations:

HCC = hydraulic control and containment
 psig = pound per square inch gauge
 scfm = standard cubic feet per minute

Table 7
Stabilized Field Parameter Values at HCC System Monitoring Wells
2023 Annual HCC System Operations Report
BNSF Railway Company
Former Maintenance and Fueling Facility, Skykomish, WA



Monitoring Well	Sample Date	Dissolved Oxygen (milligrams per liter)	Oxidation-Reduction Potential (millivolts)	pH (Standard Units)	Specific Conductivity (mS/cm)	Temperature (degrees Celsius)	Turbidity
1B-W-23	3/29/2023	10.71	230.9	6.27	0.106	8.62	439.86
	6/15/2023	9.05	205.0	6.45	0.105	54.19	1076.60
	9/27/2023	6.08	211.2	6.09	0.090	18.40	0.29
	12/6/2023	8.81	250.3	6.68	0.089	8.78	3.25
2A-W-40	3/29/2023	9.58	12.8	6.56	0.052	7.69	55.51
	6/14/2023	7.91	231.3	6.84	0.055	48.07	2.62
	9/28/2023	6.96	183.6	6.44	0.057	9.07	2.01
	12/6/2023	6.04	218.8	6.58	0.06	9.56	1.98
2A-W-41	3/29/2023	4.20	4.2	6.47	0.144	8.41	2.67
	6/14/2023	4.15	24.9	6.32	0.131	48.99	0.77
	9/28/2023	3.67	26.1	6.35	0.171	10.93	1.99
	12/6/2023	9.75	-14.7	6.36	0.141	10.39	0.89
2A-W-42	3/30/2023	3.20	45.1	6.07	0.132	7.31	123.55
	6/14/2023	0.34	196.5	6.29	0.143	10.16	143.15
	9/28/2023	3.40	209.8	5.90	0.116	10.60	7.23
	16/6/23	4.45	28.3	6.16	0.147	9.01	0.00
5-W-43	3/29/2023	5.03	104.7	6.11	0.086	8.04	0.19
	6/14/2023	3.24	235.0	6.43	0.076	47.92	0.00
	9/29/2023	0.98	207.7	6.13	0.073	10.63	0.00
	12/5/2023	1.38	-27.8	6.03	0.110	9.81	0.00
EW-1	3/29/2023	3.22	99.2	6.04	0.087	7.96	0.32
	6/14/2023	2.42	213.9	6.35	0.077	7.88	0.00
	9/28/2023	0.53	196.3	6.01	0.058	8.84	0.00
	12/6/2023	0.55	39.7	6.02	0.114	9.59	0.00
EW-2A	3/29/2023	6.49	246.4	6.10	0.046	8.10	36.88
	6/15/2023	6.42	185.8	6.28	0.050	47.63	0.00
	9/27/2023	5.20	192.0	5.94	0.062	9.79	11.77
	12/6/2023	4.67	248.9	6.07	0.066	8.68	0.00
GW-1	3/29/2023	2.50	59.2	6.34	0.117	7.58	3.73
	6/15/2023	0.46	73.2	6.46	0.098	10.64	4.05
	10/17/2023	0.84	-68.8	6.16	0.121	11.48	NM
	12/5/2023	4.74	97.1	6.00	0.154	8.96	2.17
GW-2	3/29/2023	117.71	-35.9	6.24	0.118	7.61	3.62
	6/14/2023	0.24	62.9	6.41	0.090	9.54	1.18
	9/28/2023	1.02	18.7	6.27	0.119	11.49	1609.80
	12/5/2023	7.63	-16.9	6.51	0.169	9.25	29.64
GW-3	3/29/2023	1.58	-59.7	6.23	0.102	8.67	0.74
	6/14/2023	1.10	118.6	6.24	0.090	51.64	3.44
	9/27/2023	2.92	56.4	6.05	0.088	10.85	7.66
	12/6/2023	4.45	-11.4	6.01	0.081	8.77	0.00
GW-4	3/30/2023	1.84	-47.7	6.61	0.089	7.45	0.00
	6/14/2023	1.07	-38.9	6.84	0.144	48.84	0.00
	9/27/2023	3.00	112.4	6.35	0.087	10.09	10.48

Notes:
HCC = hydraulic control and containment
mS/cm = milliSiemen per centimeter
NM = not monitored

Table 8
Total Petroleum Hydrocarbon Concentrations in Groundwater
2023 Annual HCC System Operations Report
BNSF Railway Company
Former Maintenance and Fueling Facility, Skykomish, WA



Well	Date	Sample Identification	Sample Type	Diesel Range Organics (µg/L)	Heavy Oil (µg/L)	Combined DRO/HO (µg/L)
Sentry Wells						
S1-AD	3/30/2023	S1-AD	N	<100 UJ	<100 UJ	16.5 UJ
	6/14/2023	S1-AD_06142023	N	<100 U	<100 U	16.5 U
	9/28/2023	S1-AD_092823	N	<100 U	<100 U	16.5 U
	12/6/2023	S1-AD_120623	N	<100 U	<100 U	16.5 U
S1-AU	3/30/2023	S1-AU	N	<100 UJ	<100 UJ	16.5 UJ
	6/14/2023	S1-AU_06142023	N	<100 U	<140 UB	17.5 UB
	9/28/2023	S1-AU_092823	N	<100 U	<100 U	16.5 U
	12/6/2023	S1-AU_120623	N	<100 U	<100 U	16.5 U
S1-BD	3/30/2023	S1-BD	N	<100 UJ	<100 UJ	16.5 UJ
	6/15/2023	S1-BD_06152023	N	<100 U	<100 UB	15.5 UB
	9/28/2023	S1-BD_092823	N	<100 U	<100 U	16.5 U
	12/6/2023	S1-BD_120623	N	<100 U	<100 U	16.5 U
S1-BU	3/30/2023	S1-BU	N	<100 UJ	<100 UJ	16 UJ
	6/15/2023	S1-BU_06152023	N	<100 U	<100 U	16.5 U
	9/28/2023	S1-BU_092823	N	<100 U	<100 U	16.5 U
	12/6/2023	S1-BU_120623	N	<100 U	390	398
S2-AD	3/30/2023	S2-AD	N	<100 UJ	<100 UJ	16.5 UJ
	6/14/2023	S2-AD_06142023	N	<100 U	<100 U	16 U
	9/29/2023	S2-AD_092923	N	<100 U	<100 U	16.5 U
	12/6/2023	S2-AD_120623	N	<100 U	<100 U	16.5 U
	12/6/2023	FD-2_120623	FD	<100 U	<100 U	16.5 U
S2-AU	3/30/2023	S2-AU	N	<100 UJ	<100 UJ	16.5 UJ
	6/14/2023	S2-AU_06142023	N	<100 U	<100 U	17.5 U
	9/29/2023	S2-AU_092923	N	<100 U	<100 U	16.5 U
	12/6/2023	S2-AU_120623	N	500	140	640
S2-BD	3/30/2023	S2-BD	N	<100 UJ	<100 UJ	16 UJ
	6/15/2023	FD-2_06152023	FD	<100 U	<100 U	15.5 U
	6/15/2023	S2-BD_06152023	N	<100 U	<100 U	16.5 U
	9/29/2023	S2-BD_092923	N	<100 U	140	148
	12/7/2023	S2-BD_120723	N	<100 U	<100 U	16.5 U

Table 8
Total Petroleum Hydrocarbon Concentrations in Groundwater
2023 Annual HCC System Operations Report
BNSF Railway Company
Former Maintenance and Fueling Facility, Skykomish, WA



Sentry Wells (continued)						
S2-BU	3/30/2023	S2-BU	N	360 J	110 J	470 J
	6/15/2023	S2-BU_06152023	N	330	<130 UB	339
	9/29/2023	S2-BU_092923	N	1,000	200	1,200
	12/7/2023	S2-BU_120723	N	1,300	340	1,640
S3-AD	3/30/2023	S3-AD	N	<100 UJ	<100 UJ	16.5 UJ
	6/15/2023	S3-AD_06152023	N	<100 U	<100 U	16 U
	9/27/2023	S3-AD_092723	N	<100 U	<100 U	16.5 U
	12/7/2023	S3-AD_120723	N	<100 U	270	278
S3-AU	3/30/2023	DUP-4	FD	170 J	<100 UJ	179 J
	3/30/2023	S3-AU	N	160 J	<100 UJ	169 J
	6/15/2023	S3-AU_06152023	N	210	<100 U	219
	9/27/2023	S3-AU_092723	N	<100 U	<100 U	16.5 U
	12/7/2023	S3-AU_120723	N	<100 U	<100 U	16.5 U
S3-BD	3/30/2023	S3-BD	N	<100 UJ	<100 UJ	16.5 UJ
	6/15/2023	S3-BD_06152023	N	<100 U	<100 U	16 U
	9/28/2023	S3-BD_092823	N	<100 U	<100 U	16.5 U
	12/7/2023	S3-BD_120723	N	<100 U	<100 U	16.5 U
S3-BU	3/30/2023	S3-BU	N	<100 UJ	<100 UJ	16.5 UJ
	6/15/2023	FD-3_06152023	FD	<100 U	<100 U	16.5 U
	6/15/2023	S3-BU_06152023	N	<100 U	<100 U	17.5 U
	9/28/2023	S3-BU_092823	N	<100 U	<100 U	16.5 U
	12/7/2023	S3-BU_120723	N	110	<100 U	119
	12/7/2023	FD-3_120723	FD	<100 U	<100 U	16.5 U
S3-CD	3/30/2023	S3-CD	N	<100 UJ	<100 UJ	16.5 UJ
	6/15/2023	S3-CD_06152023	N	<100 U	<100 U	16.5 U
	9/27/2023	S3-CD_092723	N	<100 U	<100 U	16.5 U
	12/7/2023	S3-CD_120723	N	<100 UJ	300	308
S3-CU	3/30/2023	S3-CU	N	<100 UJ	<100 UJ	16.5 UJ
	6/15/2023	S3-CU_06152023	N	<100 U	<100 U	17.5 U
	9/27/2023	S3-CU_092723	N	<100 U	<100 U	16.5 U
	12/7/2023	S3-CU_120723	N	<100 U	<100 U	16.5 U
S4-AD	3/30/2023	S4-AD	N	<100 UJ	<100 UJ	16.5 UJ
	6/15/2023	S4-AD_06152023	N	<100 U	<100 U	16 U
	9/27/2023	S4-AD_092723	N	<100 U	<100 U	16.5 U
	12/7/2023	S4-AD_120723	N	<100 U	<100 U	16.5 U

Table 8
Total Petroleum Hydrocarbon Concentrations in Groundwater
2023 Annual HCC System Operations Report
BNSF Railway Company
Former Maintenance and Fueling Facility, Skykomish, WA



Sentry Wells (continued)						
S4-AU	3/30/2023	S4-AU	N	<100 UJ	<100 UJ	16.5 UJ
	6/15/2023	S4-AU_06152023	N	<100 U	<100 U	16.5 U
	9/27/2023	S4-AU_092723	N	<100 U	<100 U	16.5 U
	12/7/2023	S4-AU_120723	N	260	<100 U	269
S4-BD	3/29/2023	S4-BD	N	<100 UJ	<100 UJ	15.5 UJ
	6/15/2023	S4-BD_06152023	N	<100 U	<100 U	16 U
	9/27/2023	S4-BD_092723	N	<100 U	<100 U	16.5 U
	12/7/2023	S4-BD_120723	N	<100 U	<100 U	16.5 U
S4-BU	3/30/2023	S4-BU	N	<100 UJ	<100 UJ	16.5 UJ
	6/15/2023	S4-BU_06152023	N	<100 U	<100 U	16.5 U
	9/27/2023	S4-BU_092723	N	<100 U	<100 U	16.5 U
	12/7/2023	S4-BU_120723	N	<100 U	<100 U	16.5 U
	12/7/2023	FD-4_120723	FD	<100 U	<100 U	16.5 U
S4-CD	3/30/2023	S4-CD	N	<100 UJ	<100 UJ	16.5 UJ
	6/15/2023	S4-CD_06152023	N	<100 U	<100 U	16.5 U
	9/27/2023	S4-CD_092723	N	<100 U	<100 U	16.5 U
	12/7/2023	S4-CD_120723	N	150	150	300
S4-CU	3/30/2023	S4-CU	N	130 J	<100 UJ	139 J
	6/15/2023	S4-CU_06152023	N	<100 U	<100 U	16.5 U
	9/27/2023	FD-1_092723	FD	100	220	320
	9/27/2023	S4-CU_092723	N	<100 U	<100 U	16.5 U
	12/7/2023	S4-CU_120723	N	330	180	510
Hydraulic Control and Containment System Monitoring Wells						
Site-Specific Groundwater Remediation Level				--	--	477
1B-W-23	3/29/2023	1B-W-23	N	<100 UJ	<100 UJ	16.5 UJ
	6/15/2023	1B-W-23_06152023	N	<100 U	<100 U	15.5 U
	9/27/2023	1B-W-23_092723	N	<100 U	<100 U	16.5 U
	12/6/2023	1B-W-23_120623	N	<100 U	<100 U	16.5 U
2A-W-40	3/29/2023	2A-W-40	N	<100 UJ	280 J	288 J
	3/29/2023	DUP-2	FD	<100 UJ	330 J	338 J
	6/14/2023	2A-W-40_06142023	N	<100 U	<120 UB	15.5 UB
	6/14/2023	FD-1_06142023	FD	<100 U	<150 UB	15.5 UB
	9/28/2023	2A-W-40_092823	N	<100 U	<100 U	16.5 U
	12/6/2023	2A-W-40_120623	N	<100 U	<100 U	16.5 U
	12/6/2023	FD-1_120623	FD	<100 U	<100 U	16.5 U

Table 8
Total Petroleum Hydrocarbon Concentrations in Groundwater
2023 Annual HCC System Operations Report
BNSF Railway Company
Former Maintenance and Fueling Facility, Skykomish, WA



Hydraulic Control and Containment System Monitoring Wells (continued)						
Site-Specific Groundwater Remediation Level			--	--	477	
2A-W-41	3/29/2023	2A-W-41	N	310 J [110 J]	<100 UJ [<100 UJ]	319 J [119 J]
	6/14/2023	2A-W-41_06142023	N	250 [95]	120 UB [<100 U]	310 [103]
	9/28/2023	2A-W-41_092823	N	400 [240 J]	120 [<100 U]	520 [249 J]
	12/6/2023	2A-W-41_120623	N	230 [55]	270 [<100 U]	500 [63.5]
2A-W-42	3/30/2023	2A-W-42	N	<100 UJ	<100 UJ	16.5 UJ
	6/14/2023	2A-W-42_06142023	N	110	<100 U	119
	9/28/2023	2A-W-42_092823	N	120	<100 U	129
	12/6/2023	2A-W-42_120623	N	170	130	300
5-W-43	3/29/2023	5-W-43	N	<100 UJ	<100 UJ	15.5 UJ
	6/14/2023	5-W-43_06142023	N	<100 U	<100 U	15.5 U
	9/29/2023	5-W-43_092923	N	<100 U	<100 U	17.5 U
	9/29/2023	FD-4_092923	FD	<100 U	<100 U	16.5 U
	12/5/2023	5-W-43_120523	N	<100 U	<100 U	16.5 U
EW-1	3/29/2023	EW-1	N	<100 UJ	<100 UJ	16.5 UJ
	6/14/2023	EW-1_06142023	N	<100 U	<100 U	16.5 U
	9/28/2023	EW-1_092823	N	<100 U	<100 U	16.5 U
	12/6/2023	EW-1_120623	N	100	<100 U	109
EW-2A	3/29/2023	DUP-3	FD	<100 UJ	<100 UJ	16.5 UJ
	3/29/2023	EW-2A	N	<100 UJ	<100 UJ	16.5 UJ
	6/15/2023	EW-2A_06152023	N	<100 U	<100 U	16.5 U
	9/27/2023	EW-2A_092723	N	<100 U	250	258
	12/6/2023	EW-2A_120623	N	<100 U	<100 U	16.5 U
GW-1	3/29/2023	GW-1	N	<100 UJ	<100 UJ	15.5 UJ
	6/15/2023	GW-1_06152023	N	<100 U	<100 U	16.5 U
	10/17/2023	GW-1_101723	N	150	110	260
	10/17/2023	DUP-1_101723	FD	140	130	270
	12/5/2023	GW-1_120523	N	<100 U	120	128
GW-2	3/29/2023	GW-2	N	<100 UJ	<100 UJ	15.5 UJ
	6/14/2023	GW-2_06142023	N	<100 U	<100 U	16.5 U
	9/28/2023	GW-2_092823	N	<100 U	<100 U	16.5 U
	12/5/2023	GW-2_120523	N	120	200	320

Table 8
Total Petroleum Hydrocarbon Concentrations in Groundwater
2023 Annual HCC System Operations Report
BNSF Railway Company
Former Maintenance and Fueling Facility, Skykomish, WA



Hydraulic Control and Containment System Monitoring Wells (continued)						
Site-Specific Groundwater Remediation Level			--	--	477	
GW-3	3/29/2023	GW-3	N	490 J [160 J]	140 J [<100 UJ]	630 J [168 J]
	6/14/2023	GW-3_06142023	N	400 [150]	<110 UB [<100 U]	408 [158]
	9/27/2023	GW-3_092723	N	250 [110]	<100 U [<100 U]	259 [119]
	12/6/2023	GW-3_120623	N	81.0 [<50.0 U]	<100 U [<100 U]	89.5 [16.5 U]
GW-4	3/30/2023	GW-4	N	<100 UJ	<100 UJ	16 UJ
	6/14/2023	GW-4_06142023	N	<100 U	<100 U	15.5 U
	9/27/2023	GW-4_092723	N	130	690	820
	12/6/2023	--	--	NM	NM	NM

Validation Qualifiers

- J = compound was positively identified and the associated numerical value is an estimate
- U = compound was analyzed for but not detected and the associated value is the compound quantitation limit
- UB = compound is considered non-detect at the listed value due to associated blank contamination
- UJ = compound was not detected above the reported sample quantitation limit and the reported limit is approximate

Notes

1. Results in **bold** font indicate the compound was detected at a concentration greater than the laboratory reporting limit.
2. Results in **bold** font and shaded grey indicate the compound was detected at a concentration greater than the site-specific remediation level. The remediation level is not applicable to vaults in the barrier wall treatment gates.
3. Analyzed by Northwest Method NWTPH-Dx without silica gel cleanup unless otherwise noted.
4. Calculated NWTPH-Dx is the sum of diesel range organic and heavy oil, using half the method detection limit for non-detect results.

Acronyms and Abbreviations

- < = denotes analyte not reported as detected at or exceeding the listed laboratory reporting limit
- [] = sample analyzed by Northwest Method NWTPH-Dx with silica gel cleanup
- µg/L = microgram per liter
- DRO = diesel range organics
- FD = field duplicate
- HO = heavy oil
- N = parent sample
- NM = not monitored due to inaccessibility

Table 9
Groundwater Elevations and LNAPL Thicknesses
2023 Annual HCC System Operations Report
BNSF Railway Company
Former Maintenance and Fueling Facility, Skykomish, WA



Zone		Location	Measuring Point Elevation Q1 and Q2 (ft NAVD88) ¹	Measuring Point Elevation Q3 and Q4 (ft NAVD88) ²	Date	Depth to Groundwater (ft btoc)	Depth to LNAPL (ft btoc)	LNAPL Thickness	Groundwater Elevation (ft NAVD88) ^{3,4}	
HCC Wall Monitoring Wells	Gate Wells	GW-1	928.24	--	3/27/2023	10.85	--	--	917.39	
					6/13/2023	10.46	--	--	917.78	
					10/17/2023	11.18	--	--	917.06	
					12/4/2023	7.52	--	--	920.72	
		GW-2	930.29	930.14	3/27/2023	12.85	--	--	917.44	
					6/13/2023	12.50	--	--	917.79	
					9/26/2023	10.57	--	--	919.57	
					12/4/2023	12.55	--	--	917.59	
		GW-3	935.82	--	3/27/2023	14.10	--	--	921.72	
					6/13/2023	13.99	--	--	921.83	
					9/25/2023	15.30	--	--	920.52	
					12/4/2023	13.91	--	--	921.91	
	GW-4	934.68	934.58	3/27/2023	10.82	--	--	923.86		
				6/13/2023	10.83	--	--	923.85		
				9/25/2023	12.50	--	--	922.08		
				12/4/2023	NM	--	--	NM		
	End Wells	EW-1	928.72	928.34	3/27/2023	10.49	--	--	918.23	
					6/13/2023	10.33	--	--	918.39	
					9/26/2023	11.95	--	--	916.39	
					12/4/2023	7.83	--	--	920.51	
EW-2A		936.2	935.84	3/27/2023	10.55	--	--	925.65		
				6/13/2023	10.34	--	--	925.86		
				9/25/2023	12.65	--	--	923.19		
				12/4/2023	6.71	--	--	929.13		
Sentry Wells	Far West Gate	S1	S1-AD	--	929.47	3/27/2023	8.60	--	--	920.87
						6/13/2023	8.71	--	--	920.76
						9/25/2023	11.75	--	--	917.72
						12/4/2023	8.76	--	--	920.71
		S1-AU	--	929.49	3/27/2023	8.64	--	--	920.85	
					6/13/2023	9.76	--	--	919.73	
					9/25/2023	11.77	--	--	917.72	
					12/4/2023	8.80	--	--	920.69	
		S1-BD	--	930.02	3/27/2023	9.17	--	--	920.85	
					6/13/2023	9.29	--	--	920.73	
					9/25/2023	12.32	--	--	917.70	
					12/4/2023	8.24	--	--	921.78	
	S1-BU	--	930.07	3/27/2023	9.25	--	--	920.82		
				6/13/2023	9.32	--	--	920.75		
				9/25/2023	12.37	--	--	917.70		
				12/4/2023	8.25	--	--	921.82		
	West Gate	S2	S2-AD	--	931.23	3/27/2023	13.90	--	--	917.33
						6/13/2023	13.62	--	--	917.61
						9/25/2023	14.80	--	--	916.43
						12/4/2023	13.82	--	--	917.41
S2-AU		--	931.21	3/27/2023	13.89	--	--	917.32		
				6/13/2023	13.60	--	--	917.61		
				9/25/2023	14.80	--	--	916.41		
				12/4/2023	13.86	--	--	917.35		

Table 9
Groundwater Elevations and LNAPL Thicknesses
2023 Annual HCC System Operations Report
BNSF Railway Company
Former Maintenance and Fueling Facility, Skykomish, WA



Zone			Location	Measuring Point Elevation Q1 and Q2 (ft NAVD88) ¹	Measuring Point Elevation Q3 and Q4 (ft NAVD88) ²	Date	Depth to Groundwater (ft btoc)	Depth to LNAPL (ft btoc)	LNAPL Thickness	Groundwater Elevation (ft NAVD88) ^{3,4}
Sentry Wells	West Gate	S2	S2-BD	--	931.36	3/27/2023	12.90	--	--	918.46
						6/13/2023	12.13	--	--	919.23
						9/25/2023	14.00	--	--	917.36
						12/4/2023	12.25	--	--	919.11
		S2-BU	--	931.28	3/27/2023	12.04	--	--	919.24	
					6/13/2023	12.10	--	--	919.18	
					9/25/2023	13.92	--	--	917.36	
					12/4/2023	12.17	--	--	919.11	
	Center Gate	S3-AD	--	936.41	3/27/2023	13.32	--	--	923.09	
					6/13/2023	13.23	--	--	923.18	
					9/25/2023	15.64	--	--	920.77	
					12/4/2023	13.25	--	--	923.16	
		S3-AU	--	936.42	3/27/2023	13.34	--	--	923.08	
					6/13/2023	13.25	--	--	923.17	
					9/25/2023	15.65	--	--	920.77	
					12/4/2023	13.21	--	--	923.21	
		Center Gate	S3-BD	--	936.34	3/27/2023	14.00	--	--	922.34
						6/13/2023	13.84	--	--	922.5
						9/25/2023	15.70	--	--	920.64
						12/4/2023	14.07	--	--	922.27
	S3-BU		--	936.30	3/27/2023	14.00	--	--	922.30	
					6/13/2023	13.82	--	--	922.48	
					9/25/2023	15.66	--	--	920.64	
					12/4/2023	14.07	--	--	922.23	
	S3-CD		--	935.62	3/27/2023	13.62	--	--	922.00	
					6/13/2023	13.59	--	--	922.03	
					9/25/2023	15.12	--	--	920.50	
					12/4/2023	12.91	--	--	922.71	
	S3-CU	--	935.62	3/27/2023	13.62	--	--	922.00		
				6/13/2023	13.66	--	--	921.96		
				9/25/2023	15.82	--	--	919.80		
				12/4/2023	13.52	--	--	922.10		
	East Gate	S4-AD	--	934.04	3/27/2023	10.32	--	--	923.72	
					6/13/2023	10.25	--	--	923.79	
					9/26/2023	11.79	--	--	922.25	
					12/4/2023	9.90	--	--	924.14	
		S4-AU	--	934.05	3/27/2023	10.30	--	--	923.75	
					6/13/2023	10.32	--	--	923.73	
					9/25/2023	11.93	--	--	922.12	
					12/4/2023	9.91	--	--	924.14	
		S4-BD	--	934.00	3/27/2023	10.19	--	--	923.81	
					6/13/2023	10.08	--	--	923.92	
					9/26/2023	11.72	--	--	922.28	
					12/4/2023	9.77	--	--	924.23	

Table 9
Groundwater Elevations and LNAPL Thicknesses
2023 Annual HCC System Operations Report
BNSF Railway Company
Former Maintenance and Fueling Facility, Skykomish, WA



Zone			Location	Measuring Point Elevation Q1 and Q2 (ft NAVD88) ¹	Measuring Point Elevation Q3 and Q4 (ft NAVD88) ²	Date	Depth to Groundwater (ft btoc)	Depth to LNAPL (ft btoc)	LNAPL Thickness	Groundwater Elevation (ft NAVD88) ^{3,4}
Sentry Wells	East Gate	S4	S4-BU	--	934.01	3/27/2023	10.18	--	--	923.83
						6/13/2023	10.19	--	--	923.82
						9/25/2023	11.79	--	--	922.22
			12/4/2023	9.34	--	--	924.67			
			S4-CD	--	933.98	3/27/2023	9.31	--	--	924.67
						6/13/2023	9.34	--	--	924.64
	9/25/2023	11.35				--	--	922.63		
	12/4/2023	9.08	--	--	924.90					
	S4-CU	--	933.98	3/27/2023	9.32	--	--	924.66		
				6/13/2023	9.40	--	--	924.58		
				9/25/2023	11.35	--	--	922.63		
				12/4/2023	9.00	--	--	924.98		
Piezometers	PZ-1	PZ-1	935.38	935.01	3/31/2023	9.96	--	--	925.42	
					6/13/2023	10.70	--	--	924.68	
					9/25/2023	11.98	--	--	923.03	
					12/4/2023	6.81	--	--	928.20	
	PZ-2	PZ-2N	934.35	934.00	3/27/2023	12.02	--	--	922.33	
					6/13/2023	12.14	--	--	922.21	
					9/25/2023	13.41	--	--	920.59	
					12/4/2023	11.75	--	--	922.25	
		PZ-2S	934.94	934.57	3/31/2023	6.75	--	--	928.19	
					6/13/2023	9.03	--	--	925.91	
					9/25/2023	12.06	--	--	922.51	
					12/4/2023	7.92	--	--	926.65	
	PZ-3	PZ-3N	934.41	934.047	3/27/2023	13.98	--	--	920.43	
					6/13/2023	14.00	--	--	920.41	
					9/25/2023	Dry	--	--	Dry	
		PZ-3S	934.45	934.06	3/28/2023	9.36	--	Sheen	925.09	
					6/13/2023	9.60	9.30	0.30	925.14	
					9/26/2023	12.35	12.34	0.01	922.11	
	12/4/2023	6.25	6.24	0.01	928.21					
	PZ-4	PZ-4N	935.27	934.93	3/27/2023	14.62	--	--	920.65	
					6/13/2023	14.61	--	--	920.66	
					9/25/2023	14.60	--	--	920.33	
					12/4/2023	14.62	--	--	920.31	
		PZ-4S	935.31	934.99	3/27/2023	10.64	--	--	924.67	
6/13/2023					10.97	--	--	924.34		
9/26/2023					14.60	--	--	920.39		
12/4/2023					14.78	--	--	920.21		
PZ-5	PZ-5N	933.15	932.82	3/27/2023	15.48	--	--	917.67		
				6/13/2023	15.25	--	--	917.90		
				9/28/2023	15.66	--	--	917.16		
				12/4/2023	15.40	--	--	917.42		
	PZ-5S	933.46	933.16	3/28/2023	4.30	4.25	0.05	929.21		
				6/13/2023	9.64	9.59	0.05	923.87		
				9/26/2023	12.48	12.47	0.01	920.99		
				12/4/2023	6.38	6.37	0.01	927.09		

Table 9
Groundwater Elevations and LNAPL Thicknesses
2023 Annual HCC System Operations Report
BNSF Railway Company
Former Maintenance and Fueling Facility, Skykomish, WA



Zone		Location	Measuring Point Elevation Q1 and Q2 (ft NAVD88) ¹	Measuring Point Elevation Q3 and Q4 (ft NAVD88) ²	Date	Depth to Groundwater (ft btoc)	Depth to LNAPL (ft btoc)	LNAPL Thickness	Groundwater Elevation (ft NAVD88) ^{3,4}	
Piezometers	PZ-6	PZ-6N	931.17	930.88	3/27/2023	13.60	--	--	917.57	
					6/13/2023	13.31	--	--	917.86	
					9/25/2023	14.52	--	--	916.36	
					12/4/2023	13.48	--	--	917.40	
		PZ-6S	931.41	931.10	3/31/2023	7.63	--	Sheen	923.78	
					6/13/2023	7.75	--	Sheen	923.66	
	9/26/2023				11.35	11.30	0.05	919.80		
	PZ-7	PZ-7N	930.37	930.09	3/31/2023	11.51	--	--	918.86	
					6/13/2023	12.51	--	--	917.86	
					9/26/2023	13.70	--	--	916.39	
					12/4/2023	12.61	--	--	917.48	
		PZ-7S	930.4	930.132	3/28/2023	7.71	--	--	922.69	
					6/13/2023	7.88	--	Sheen	922.52	
	PZ-8	PZ-8	929.48	929.20	9/25/2023	13.24	--	--	916.89	
					12/4/2023	6.84	--	--	923.29	
					3/31/2023	10.07	--	--	919.41	
					6/13/2023	9.89	--	Sheen	919.59	
					9/25/2023	13.60	--	--	915.60	
12/4/2023					6.22	--	--	922.98		
Barrier Wall Oil-Water Separator Chamber Vaults	Far West Gate	FWG-WV	FWG-WV-NORTH	930.76	930.44	3/27/2023	16.22	--	--	914.54
						9/26/2023	15.10	--	--	915.34
						12/4/2023	7.87	--	--	922.57
		FWG-WV	FWG-WV-SOUTH	930.76	930.44	3/27/2023	16.22	--	--	914.54
						9/26/2023	15.10	--	--	915.34
						12/4/2023	7.35	--	--	923.09
		FWG-EV	FWG-EV-NORTH	--	930.47	3/27/2023	18.65	--	--	911.82
						9/26/2023	15.10	--	--	915.37
						12/4/2023	4.75	--	--	925.72
		FWG-EV	FWG-EV-SOUTH	--	930.47	3/27/2023	18.65	--	--	911.82
						9/26/2023	15.10	--	--	915.37
						12/4/2023	4.91	--	--	925.56
	West Gate	WG-WV	WG-WV-NORTH	--	931.57	3/27/2023	21.20	--	--	910.37
						9/28/2023	15.88	--	--	915.69
						12/4/2023	6.81	--	--	924.76
		WG-WV	WG-WV-SOUTH	--	931.57	3/27/2023	21.20	--	--	910.37
						9/28/2023	15.88	--	--	915.69
						12/4/2023	6.81	--	--	924.76
Barrier Wall Oil-Water Separator Chamber Vaults	West Gate	WG-EV	WG-EV-NORTH	931.84	931.62	3/27/2023	21.25	--	--	910.59
						9/28/2023	15.90	--	--	915.72
						12/4/2023	6.81	--	--	924.81
		WG-EV	WG-EV-SOUTH	931.84	931.62	3/27/2023	21.25	--	--	910.59
						9/28/2023	15.90	--	--	915.72
						12/4/2023	6.80	--	--	924.82
	Center Gate	CG-WV	CG-WV-NORTH	937.09	934.99	3/27/2023	22.52	--	--	914.57
						9/27/2023	11.75	--	--	923.24
						12/4/2023	8.84	--	--	926.15
		CG-WV	CG-WV-SOUTH	937.09	934.99	3/27/2023	22.52	--	--	914.57
						9/27/2023	11.75	--	--	923.24
						12/4/2023	8.84	--	--	926.15

Table 9
Groundwater Elevations and LNAPL Thicknesses
2023 Annual HCC System Operations Report
BNSF Railway Company
Former Maintenance and Fueling Facility, Skykomish, WA



Zone		Location	Measuring Point Elevation Q1 and Q2 (ft NAVD88) ¹	Measuring Point Elevation Q3 and Q4 (ft NAVD88) ²	Date	Depth to Groundwater (ft btoc)	Depth to LNAPL (ft btoc)	LNAPL Thickness	Groundwater Elevation (ft NAVD88) ^{3,4}	
Barrier Wall Oil-Water Separator Chamber Vaults	Center Gate	CG-CV-NORTH	--	936.80	3/27/2023	15.85	--	--	920.95	
					9/27/2023	11.75	--	--	925.05	
					12/4/2023	8.83	--	--	927.97	
		CG-CV-SOUTH	--	936.80	3/27/2023	15.85	--	--	920.95	
					9/27/2023	11.75	--	--	925.05	
					12/4/2023	8.83	--	--	927.97	
		CG-EV	CG-EV-NORTH	--	936.21	3/27/2023	15.25	--	--	920.96
						9/26/2023	17.88	--	--	918.33
						12/4/2023	8.23	--	--	927.98
			CG-EV-SOUTH	--	936.21	3/27/2023	15.25	--	--	920.96
						9/26/2023	17.86	--	--	918.35
						12/4/2023	8.23	--	--	927.98
	East Gate	EG-WV	EG-WV-NORTH	934.31	933.99	3/27/2023	10.35	--	--	923.96
						9/25/2023	11.94	--	--	922.05
						12/4/2023	9.89	--	--	924.10
			EG-WV-SOUTH	934.31	934.03	3/27/2023	10.35	--	--	923.96
						9/28/2023	11.95	--	--	922.08
						12/4/2023	9.92	--	--	924.11
		EG-CV	EG-CV-NORTH	--	933.95	3/27/2023	10.15	--	--	923.80
						9/25/2023	11.78	--	--	922.17
						12/4/2023	9.74	--	--	924.21
			EG-CV-SOUTH	--	933.94	3/27/2023	10.11	--	--	923.83
						9/28/2023	11.79	--	--	922.15
						12/4/2023	9.74	--	--	924.20
		EG-EV	EG-EV-NORTH	--	933.95	3/27/2023	9.28	--	--	924.67
						9/25/2023	11.33	--	--	922.62
						12/4/2023	8.99	--	--	924.96
			EG-EV-SOUTH	--	933.96	3/27/2023	9.30	--	--	924.66
						9/25/2023	11.34	--	Sheen	922.62
						12/4/2023	8.99	--	--	924.97
	Recovery Wells	RW-01	932.84	936.203	3/27/2023	9.15	--	--	923.69	
					9/25/2023	10.88	--	--	925.32	
		RW-02	933.84	936.853	3/27/2023	10.25	--	--	923.59	
					9/25/2023	14.48	--	--	922.37	
		RW-03	933.8	936.814	3/27/2023	10.18	--	Sheen	923.62	
					9/26/2023	12.51	--	Sheen	924.30	
RW-04		931.86	934.91	3/31/2023	8.84	--	--	923.02		
				9/28/2023	--	--	Sheen	Sheen		
RW-05		928.53	931.848	3/27/2023	16.78	--	--	911.75		
				9/26/2023	14.14	--	--	917.71		
RW-06		928.53	931.547	3/27/2023	16.17	--	--	912.36		
				9/25/2023	13.79	--	--	917.76		
RW-07		933.06	--	3/31/2023	7.33	--	Sheen	925.73		
				9/26/2023	11.45	11.43	0.02	921.63		
RW-08		931.85	--	3/28/2023	7.49	--	Sheen	924.36		
				9/26/2023	10.44	10.43	0.01	921.42		
RW-09		933.96	937.011	3/27/2023	NM	--	--	NM		
				9/25/2023	10.97	--	Sheen	926.04		
RW-10		925.11	--	3/27/2023	7.52	--	--	917.59		
				9/28/2023	8.86	--	--	916.25		

Table 9
Groundwater Elevations and LNAPL Thicknesses
2023 Annual HCC System Operations Report
BNSF Railway Company
Former Maintenance and Fueling Facility, Skykomish, WA



Zone	Location	Measuring Point Elevation Q1 and Q2 (ft NAVD88) ¹	Measuring Point Elevation Q3 and Q4 (ft NAVD88) ²	Date	Depth to Groundwater (ft btoc)	Depth to LNAPL (ft btoc)	LNAPL Thickness	Groundwater Elevation (ft NAVD88) ^{3,4}
Site Wide Wells	2A-W-40	933.34	933.03	3/27/2023	12.50	--	--	920.84
				6/13/2023	12.29	--	--	921.05
				9/27/2023	13.41	--	--	919.62
				12/4/2023	8.22	--	--	924.81
	2A-W-41	935.22	934.90	3/27/2023	17.61	--	--	917.61
				6/13/2023	17.32	--	--	917.90
				9/26/2023	18.49	--	--	916.41
				12/4/2023	14.31	--	--	920.59
	2A-W-42	935.37	935.04	3/27/2023	13.33	--	--	922.04
				6/13/2023	13.49	--	--	921.88
				9/28/2023	14.22	--	--	920.82
				12/4/2023	13.14	--	--	921.90
	1B-W-23	936.25	930.39	3/27/2023	15.58	--	--	920.67
				6/13/2023	17.49	--	--	918.76
				9/26/2023	16.57	--	--	913.82
				12/4/2023	16.48	--	--	913.91
5-W-43	926.18	--	3/27/2023	8.29	--	--	917.89	
			6/13/2023	8.10	--	--	918.08	
			9/26/2023	9.60	--	--	916.58	
			12/4/2023	5.52	--	--	920.66	

Notes:

¹ 2015 survey measuring point elevations used for groundwater elevation calculations prior to third quarter of 2023 or if well not resurveyed.

² Survey was performed on October 6, 2023 by Otak, Inc.

³ Updated survey data taken in the third quarter was used for measuring point elevation where historical measuring point elevation for the first and second quarters is unavailable.

⁴ Groundwater elevation corrected where LNAPL present. LNAPL density estimated at 0.974 grams per cubic centimeter.

Acronyms and Abbreviations:

-- = not applicable

btoc = below top of casing

ft = feet

LNAPL = light non-aqueous phase liquid

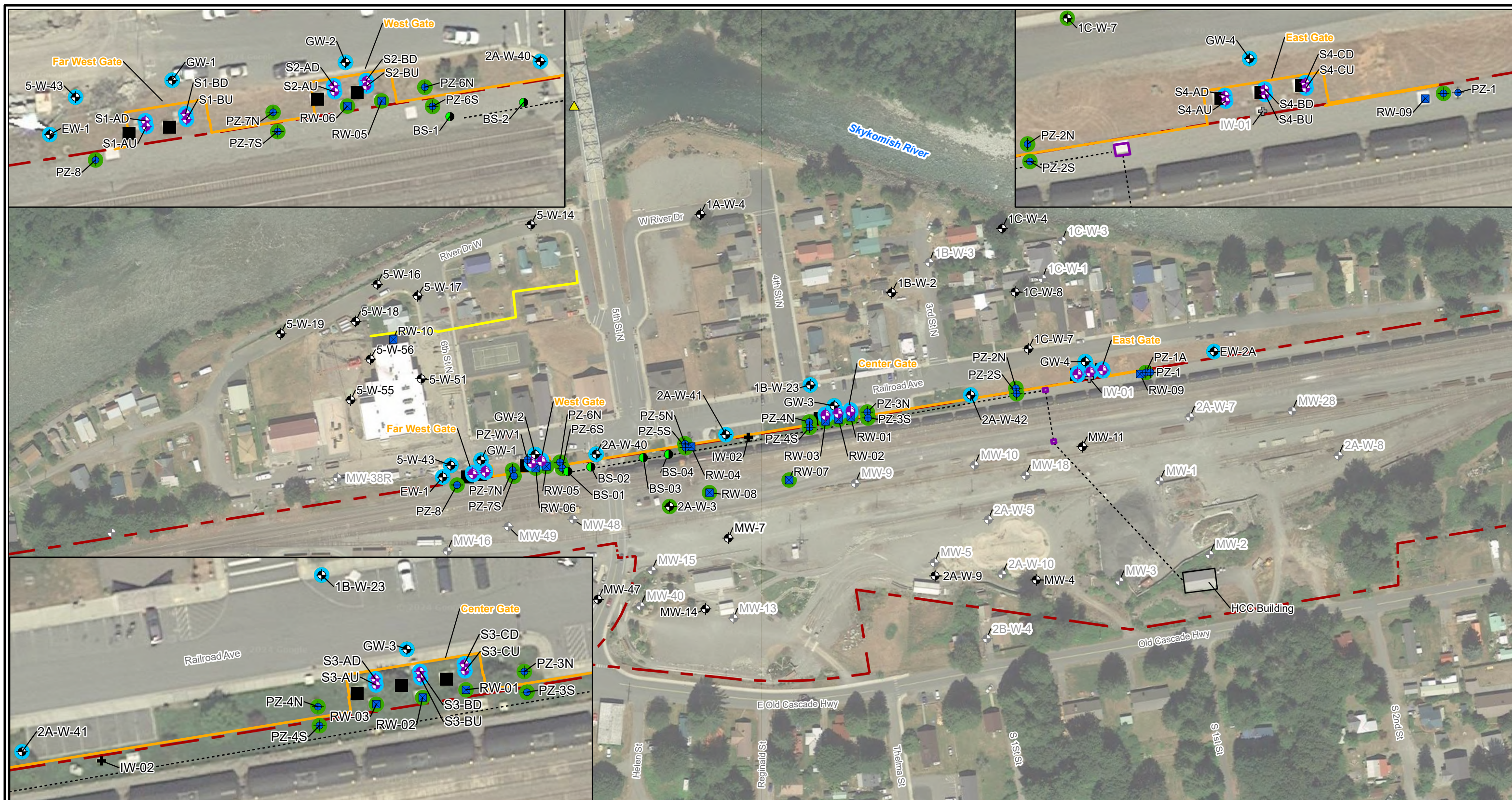
NAVD88 = North American Vertical Datum of 1988

NM = not monitored due to inaccessibility

Q1, Q2, Q3, Q4 = first quarter, second quarter, third quarter, fourth quarter

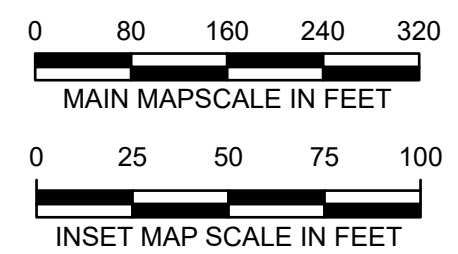
Figures

CITY: (DEN-TECH) DIV: (GROUP-ENV/GIS) DB: ACARLONE LD: PIC: PM: TM:
 PROJECT: PATH: T:_ENV\BNSF\BNSF_Skykomish_WA\arcPro_ProjectFiles\2023\2023_HCC_Report\2023_HCC_Report.aprx



Legend

◆ Monitoring Well	■ Barrier Wall Gate Vault
⊕ Injection Well	● Location Sampled for NWTPH-Dx
⊖ Recovery Well	● Location Gauged Only
⊕ Piezometer	— Mechanically Stabilized Earth Wall
▲ Bridge Gauge	— Hydraulic Control and Containment System
⊕ Abandoned Monitoring Well	— Sheet Pile Barrier Wall and Gates
⊕ Abandoned Injection Well	--- Biosparge Air Conveyance Line
◆ Sentry Well	--- BNSF Railyard Boundary
● Biosparge Well	□ Utility Vault



Notes:
 1) Aerial Imagery from Google Earth

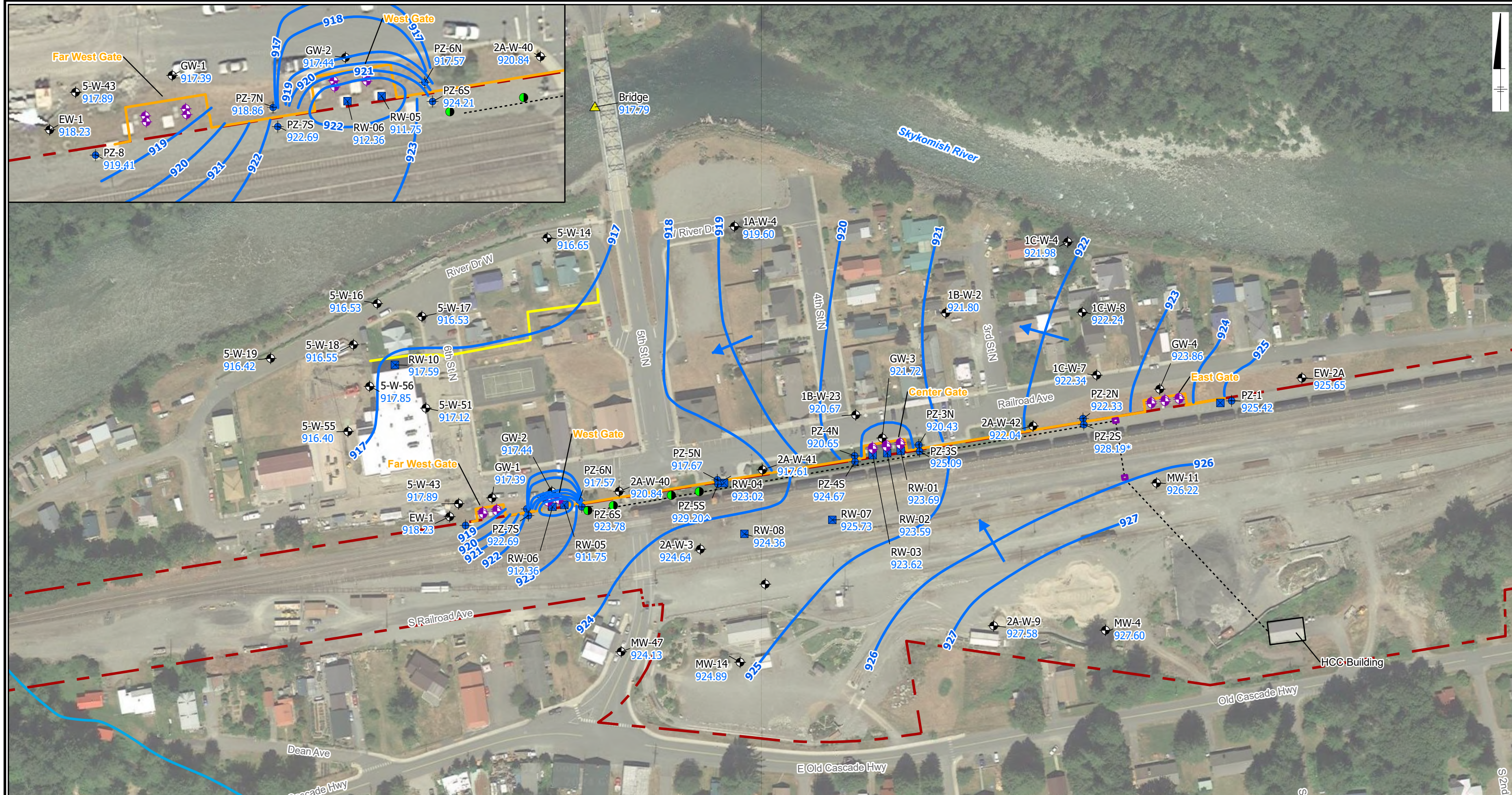
BNSF RAILWAY COMPANY
 FORMER MAINTENANCE AND FUELING FACILITY
 SKYKOMISH, WASHINGTON
 2023 ANNUAL HYDRAULIC CONTROL AND
 CONTAINMENT SYSTEM OPERATIONS REPORT

SITE PLAN

ARCADIS

FIGURE
1

CITY: (DEN-TECH) DIV: (GROUP-ENV/GIS) DB: ACARLONE LD: PIC: PM: TM:
PROJECT: PATH: T:_ENV\BNSF\BNSF_Skykomish_WA\arcPro_ProjectFiles\2023\2023_HCC_Report\2023_HCC_Report.aprx



Legend

- Monitoring Well
- Recovery Well
- Piezometer
- Bridge Gauge
- Sentry Well
- Biosparge Well
- Mechanically Stabilized Earth Wall
- Hydraulic Control and Containment System
- Sheet Pile Barrier Wall and Gates
- Biosparge Air Conveyance Line
- BNSF Railyard Boundary
- Utility Vault
- Groundwater Elevation Contour
- Approximate Groundwater Flow Direction



Notes:

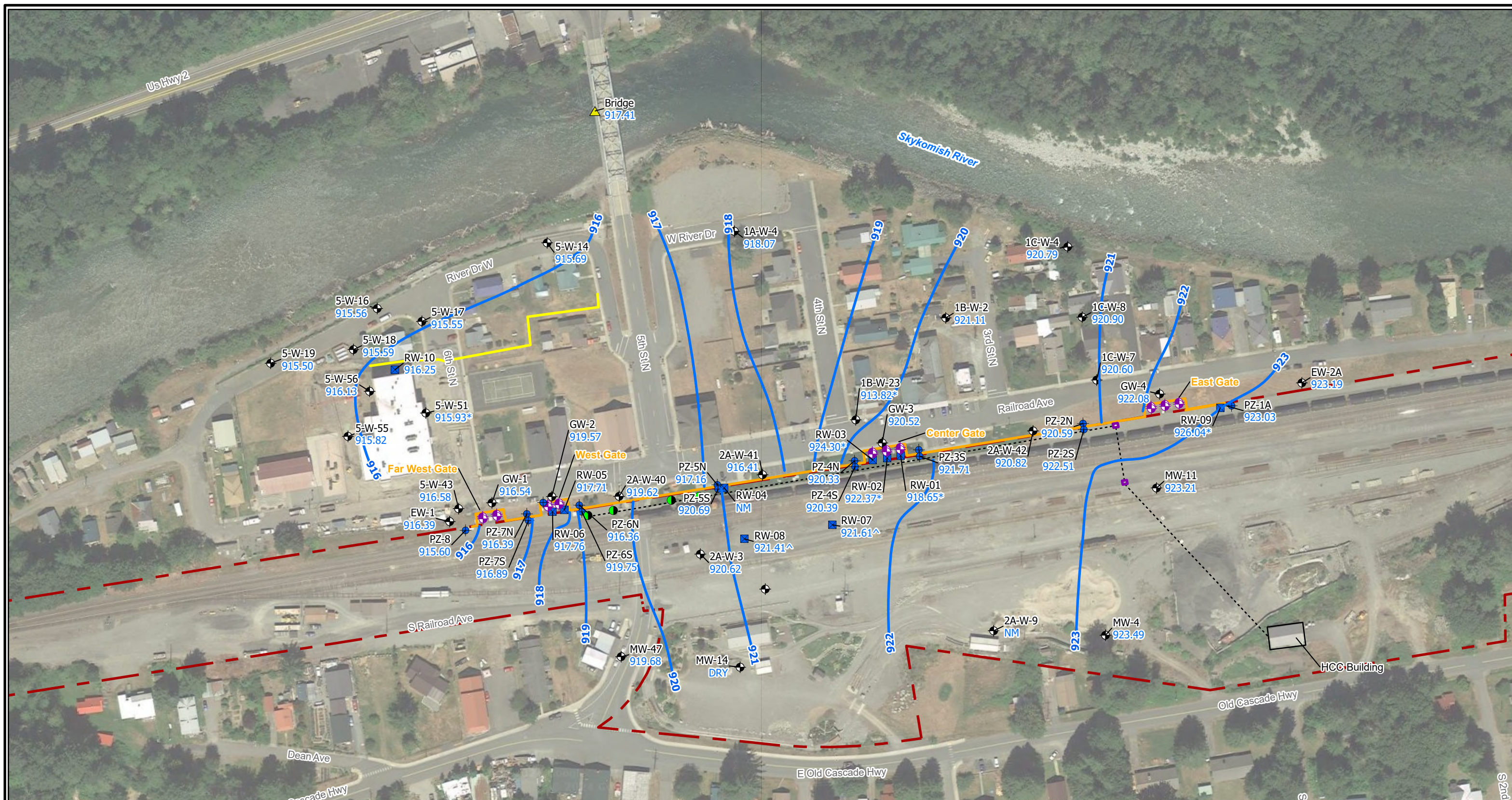
- 1) Aerial Imagery from Google Earth
- 2) NAVD 88 = North American Vertical Datum of 1988
- 3) ^ = Groundwater elevation corrected where LNAPL present. LNAPL density estimated at 0.974 grams per cubic centimeter
- 4) * = Groundwater elevation not used in contouring. LNAPL = Light Non-Aqueous Phase Liquid

BNSF RAILWAY COMPANY
FORMER MAINTENANCE AND FUELING FACILITY
SKYKOMISH, WASHINGTON
**2023 ANNUAL HYDRAULIC CONTROL AND
CONTAINMENT SYSTEM OPERATIONS REPORT**

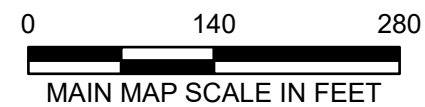
**MARCH 2023 POTENTIOMETRIC
SURFACE MAP**



CITY: (DEN/TECH) DIV: (GROUP/ENV/GIS) DB: ACARLONE LD: PIC: PM: TM:
 PROJECT: PATH: T:_ENV\BNSF\BNSF_Skykomish_WA\arcPro_ProjectFiles\2023\2023_HCC_Report\2023_HCC_Report.aprx



- Legend**
- ◆ Monitoring Well
 - Recovery Well
 - Piezometer
 - ▲ Bridge Gauge
 - ◆ Sentry Well
 - Biosparge Well
 - Groundwater Elevation Contour
 - ← Approximate Groundwater Flow Direction
 - Biosparge Air Conveyance Line
 - Mechanically Stabilized Earth Wall
 - Hydraulic Control and Containment System
 - Sheet Pile Barrier Wall and Gates
 - BNSF Railyard Boundary
 - Utility Vault



Notes:
 1) Aerial Imagery from Google Earth
 2) * = Not included in contouring
 3) ^ = Groundwater elevation corrected where LNAPL present. LNAPL density estimated at 0.974 grams per cubic centimeter
 4) Hydraulic Control and Containment system in passive mode. Biosparge system is active.
 LNAPL = Light Non-Aqueous Phase Liquid
 NM = Not Monitored

BNSF RAILWAY COMPANY
 FORMER MAINTENANCE AND FUELING FACILITY
 SKYKOMISH, WASHINGTON
 2023 ANNUAL HYDRAULIC CONTROL AND
 CONTAINMENT SYSTEM OPERATIONS REPORT

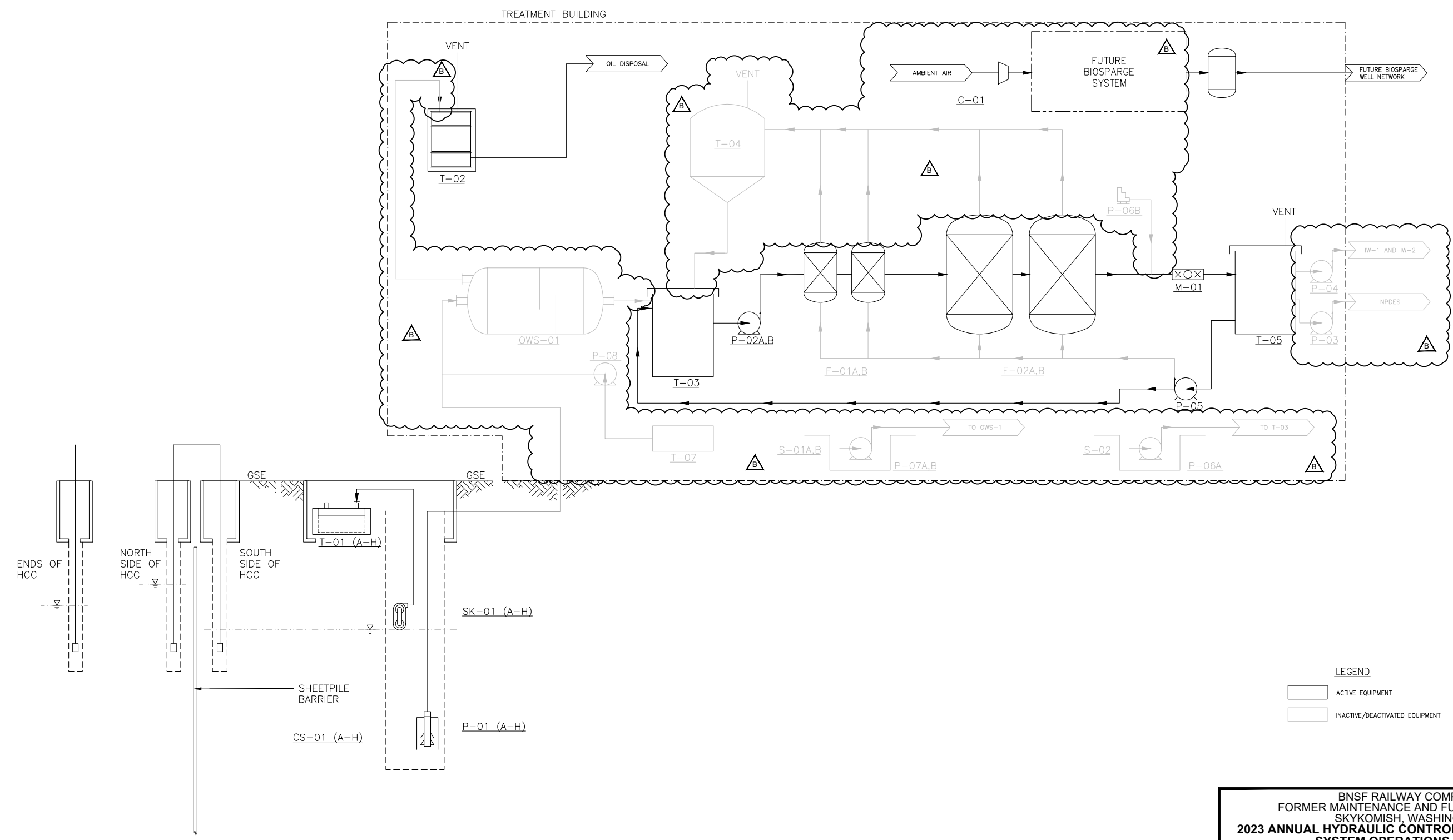
**SEPTEMBER 2023 POTENTIOMETRIC
 SURFACE MAP**

ARCADIS

FIGURE
3

C:\Users\jrharris\OneDrive\Documents\BNSF\BNSF-FORMER MAINTENANCE AND FUELING FACILITY-SKYYKOMISH\Washington\Project Files\2023\01-In Progress\01-DWG\O&MM-DR102-PID.dwg LAYOUT: 2 ACADIVER: 24.2S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: ----
 PLOTTED: 4/2/2023 8:08 PM BY: HARRIS, JESS
 XREFS: IMAGES: PROJECTNAME: O&MM-X-TTL-ENCADIS_Logo_2021.PNG

- P-01 (A-H) DOWN WELL SUBMERSIBLE PUMP
- CS-01 (A-H) COOLING SHROUD DOWN WELL SUBMERSIBLE PUMP
- SK-01 (A-H) OIL RECOVERY BELT SKIMMER PACKAGE
- T-01 (A-H) RECOVERED OIL STORAGE TANK & OVERPACK
- OWS-01 OIL/WATER SEPARATOR
- T-02 RECOVERED OIL STORAGE TANK & OVERPACK
- T-03 INFLUENT EQUALIZATION TANK
- P-02A,B INFLUENT EQUALIZATION TANK TRANSFER PUMP
- F-01A,B SAND FILTER PACKAGE
- F-02A,B GRANULAR ACTIVATED CARBON PACKAGE
- T-05 EFFLUENT EQUALIZATION TANK
- T-04 BACKWASH TANK
- P-03 TREATED WATER NPDES DISCHARGE PUMP
- P-04 TREATED WATER INJECTION PUMP
- P-05 BACKWASH PUMP
- P-06A BUILDING SUMP PUMP
- P-07A,B UTILITY VAULT SUMP PUMP
- S-01A,B UTILITY VAULT SUMP
- S-02 BUILDING FLOOR SUMP
- C-01 AIR SPARGE BLOWER
- T-06 REMOVED
- M-01 STATIC MIXER
- P-06B NaOH METERING PUMP
- P-08 METERING PUMP 0.5 GPH, 250 PSI 115V
- T-07 HYDROGEN PEROXIDE SOLUTION TANK 55 GALLONS



LEGEND
 [Solid Line] ACTIVE EQUIPMENT
 [Dashed Line] INACTIVE/DEACTIVATED EQUIPMENT

BNSF RAILWAY COMPANY
 FORMER MAINTENANCE AND FUELING FACILITY
 SKYYKOMISH, WASHINGTON
 2023 ANNUAL HYDRAULIC CONTROL AND CONTAINMENT
 SYSTEM OPERATIONS REPORT

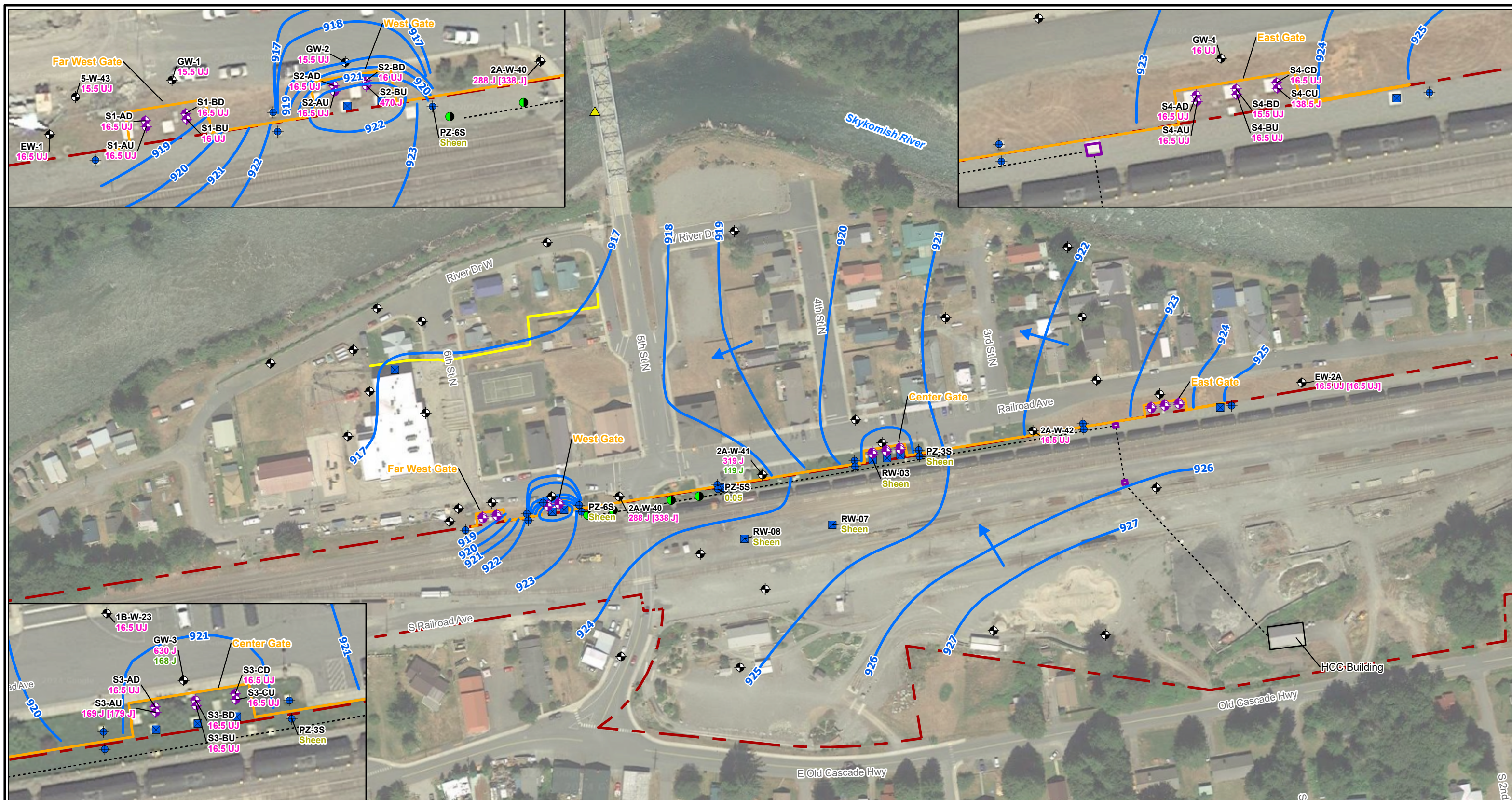
**BIOSPARGE SYSTEM PROCESS AND
 INSTRUMENTATION DIAGRAM**

ARCADIS

FIGURE
4

B 3/14/2023 O&MM ADDENDUM CHANGES BY ARCADIS JH PM
 A 8/15/2014 2014 O&MM ADDENDUM CHANGES BY FARALLON CONSULTING LLC

CITY: (DEN-TECH) DIV: (GROUP-ENV/GIS) DB: (DHOLMES) LD: (PIC) PW: (TM)
 PROJECT: (PATH: T:_ENV\BNSF\BNSF_Skykomish_WA\ArcPro_ProjectFiles\2023\2023_HCC_Report\2023_HCC_Report.aprx



- Legend**
- ◆ Monitoring Well
 - Recovery Well
 - Piezometer
 - ▲ Bridge Gauge
 - ◆ Sentry Well
 - Biosparge Well
 - Biosparge Air Conveyance Line
 - Mechanically Stabilized Earth Wall
 - Hydraulic Control and Containment System
 - Sheet Pile Barrier Wall and Gates
 - Groundwater Elevation Contour
 - ← Approximate Groundwater Flow Direction
 - - - BNSF Railyard Boundary

318.5 J Combined DRO/HO Concentration (microgram per liter)
 118.5 J Combined DRO/HO Concentration with Silica Gel Cleanup (microgram per liter)
 Sheen LNAPL Measurement (thickness in feet)

0 50 100
 INSET MAP SCALE IN FEET

0 140 280
 MAIN MAP SCALE IN FEET

- Notes:
- 1) Aerial Imagery from Google Earth
 - 2) NAVD 88 = North American Vertical Datum of 1988
 - 3) DRO = Diesel Range Organics
 - 4) HO = Heavy Oil
 - 5) J = Compound was positively identified and the associated numerical value is an estimate.
 - 6) UJ = Compound was not detected above the reported sample quantitation limit and the reported limit is approximate.
 - 7) LNAPL = Light Non-Aqueous Phase Liquid
 - 8) [] = duplicate result

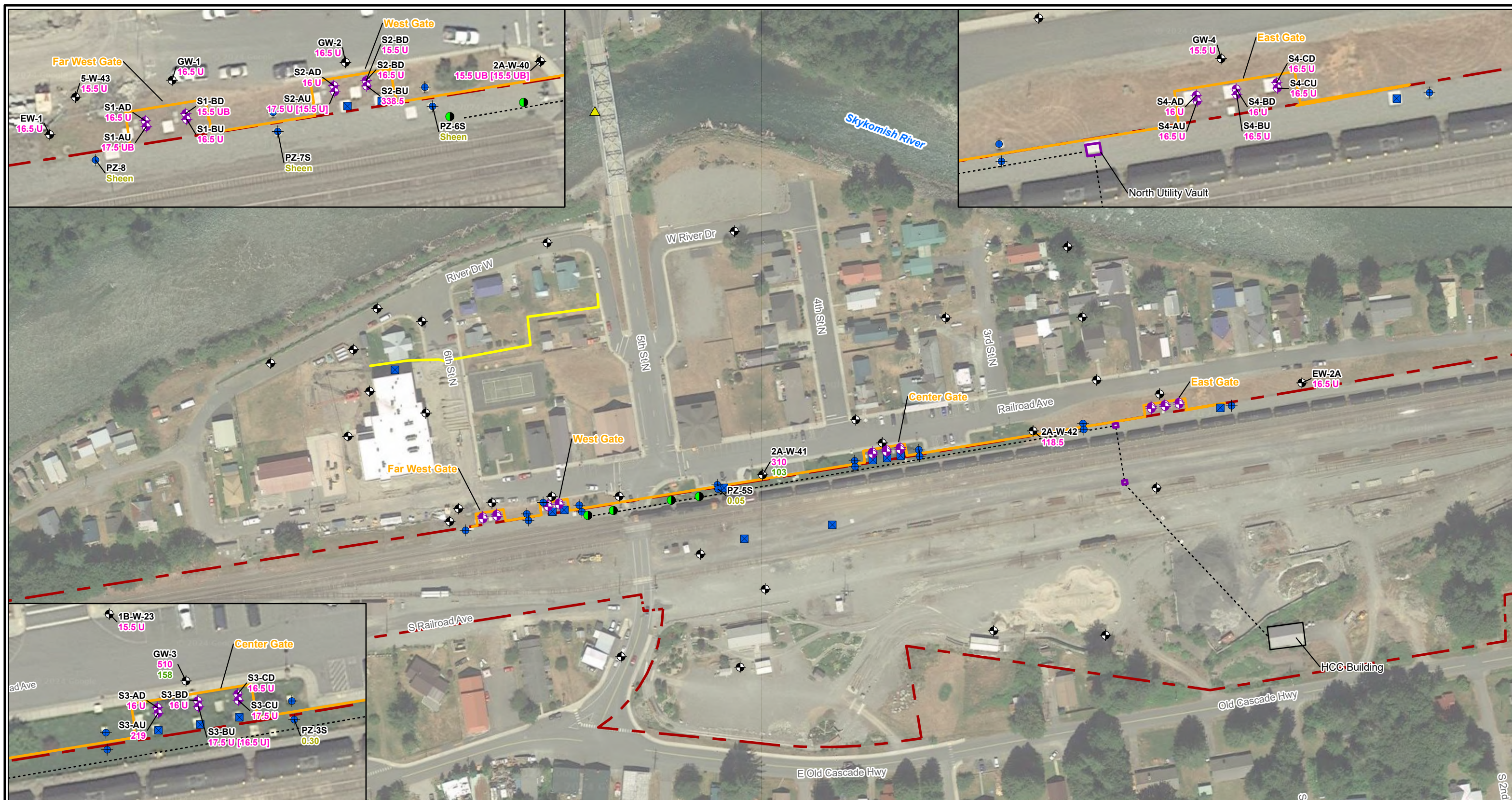
BNSF RAILWAY COMPANY
 FORMER MAINTENANCE AND FUELING FACILITY
 SKYKOMISH, WASHINGTON
 2023 OPERATION AND MAINTENANCE MANUAL FOR THE
 HYDRAULIC CONTROL AND CONTAINMENT SYSTEM

**MARCH 2023 TOTAL PETROLEUM
 HYDROCARBONS IN GROUNDWATER**

ARCADIS

FIGURE
6

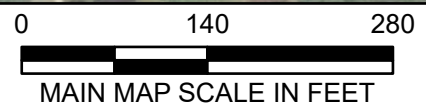
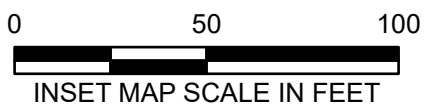
CITY: (DEN-TECH) DIV: (GROUP-ENV/GIS) DB: (ACARLONE LD. PIC. PM. TM. PROJECT: T:_ENV\BNSF\BNSF_Skykomish_WA\ArcPro_ProjectFiles\2023\2023_HCC_Report\2023_HCC_Report.aprx



- Legend**
- Monitoring Well
 - Recovery Well
 - Piezometer
 - Bridge Gauge
 - Sentry Well
 - Biosparge Well

- Biosparge Air Conveyance Line
- Mechanically Stabilized Earth Wall
- Hydraulic Control and Containment System
- Sheet Pile Barrier Wall and Gates
- BNSF Railyard Boundary

- 510 Combined DRO/HO Concentration (microgram per liter)
- 158 Combined DRO/HO Concentration with Silica Gel Cleanup (microgram per liter)
- 0.01 LNAPL Measurement (thickness in feet)



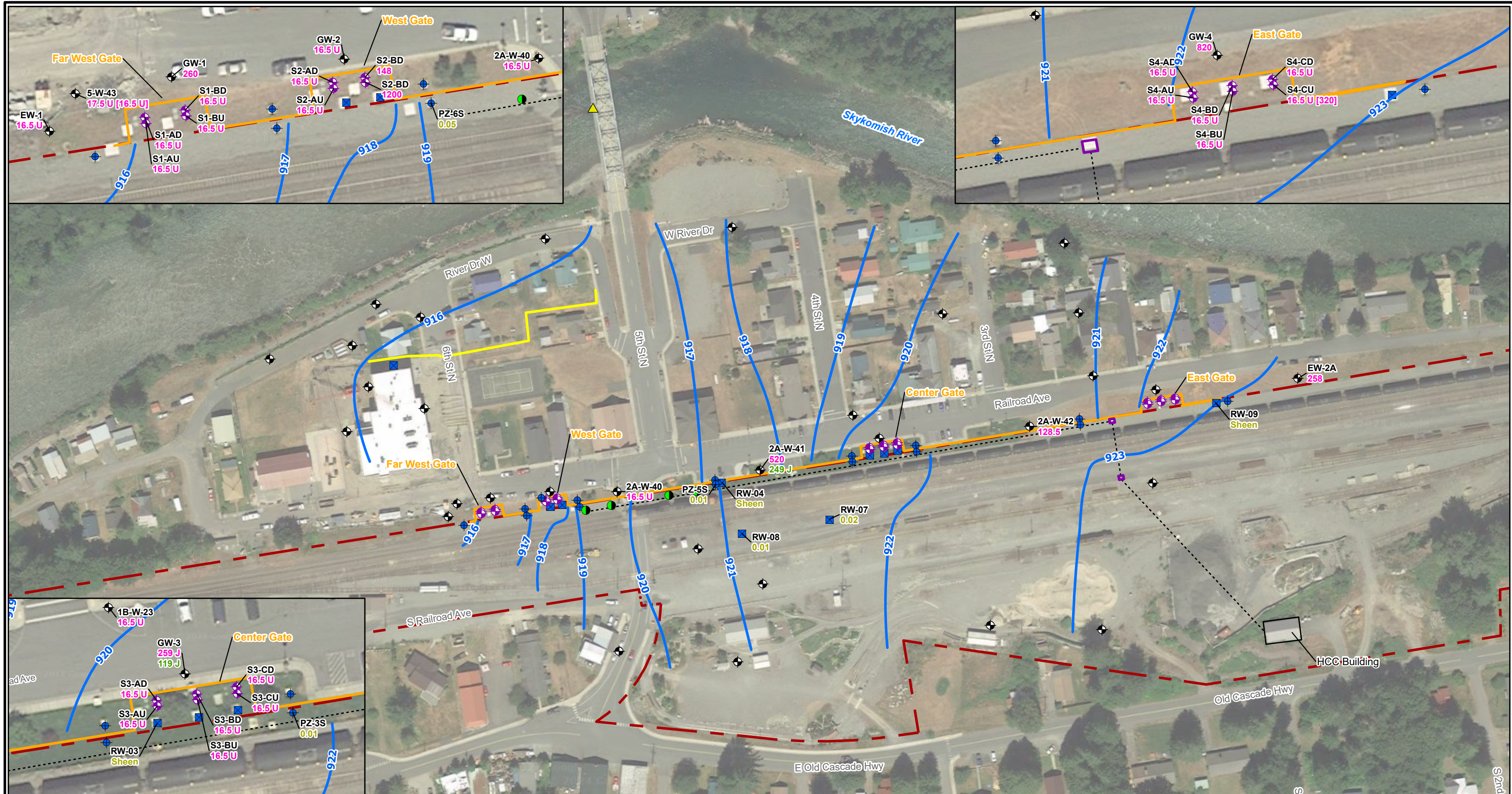
- Notes:
- 1) Aerial Imagery from Google Earth
 - 2) NAVD 88 = North American Vertical Datum of 1988
 - 3) DRO = Diesel Range Organics
 - 4) HO = Heavy Oil
 - 5) U = Compound was analyzed for but not detected and the associated value is the compound quantitation limit.
 - 6) UB = Compound considered non-detect at the listed value due to associated blank contamination.
 - 7) LNAPL = Light Non-Aqueous Phase Liquid
 - 8) [] = Duplicate result

BNSF RAILWAY COMPANY
 FORMER MAINTENANCE AND FUELING FACILITY
 SKYKOMISH, WASHINGTON
 2023 ANNUAL HYDRAULIC CONTROL AND
 CONTAINMENT SYSTEM OPERATIONS REPORT

**JUNE 2023 TOTAL PETROLEUM
 HYDROCARBONS IN GROUNDWATER**

FIGURE
7

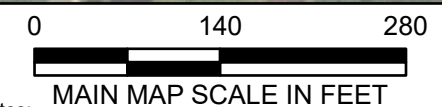
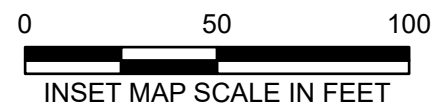
CITY: (DEN-TECH) DIV: (GROUP-ENV/GIS) DB: (DHOLMES.LD) PIC: (PM) TM:
 PROJECT: (PATH: T:_ENV\BNSF\BNSF_Skykomish_WA\ArcPro_ProjectFiles\2023\2023_HCC_Report\2023_HCC_Report.aprx



- Legend**
- Monitoring Well
 - Recovery Well
 - Piezometer
 - Bridge Gauge
 - Sentry Well
 - Biosparge Well
 - Biosparge Air Conveyance Line

- Mechanically Stabilized Earth Wall
- Hydraulic Control and Containment System
- Sheet Pile Barrier Wall and Gates
- Groundwater Elevation Contour
- Approximate Groundwater Flow Direction
- BNSF Railyard Boundary
- Monitoring Well Zones

- 510 Combined DRO/HO Concentration (microgram per liter)
- 158 Combined DRO/HO Concentration with Silica Gel Cleanup (microgram per liter)
- 0.01 LNAPL Measurement (thickness in feet)



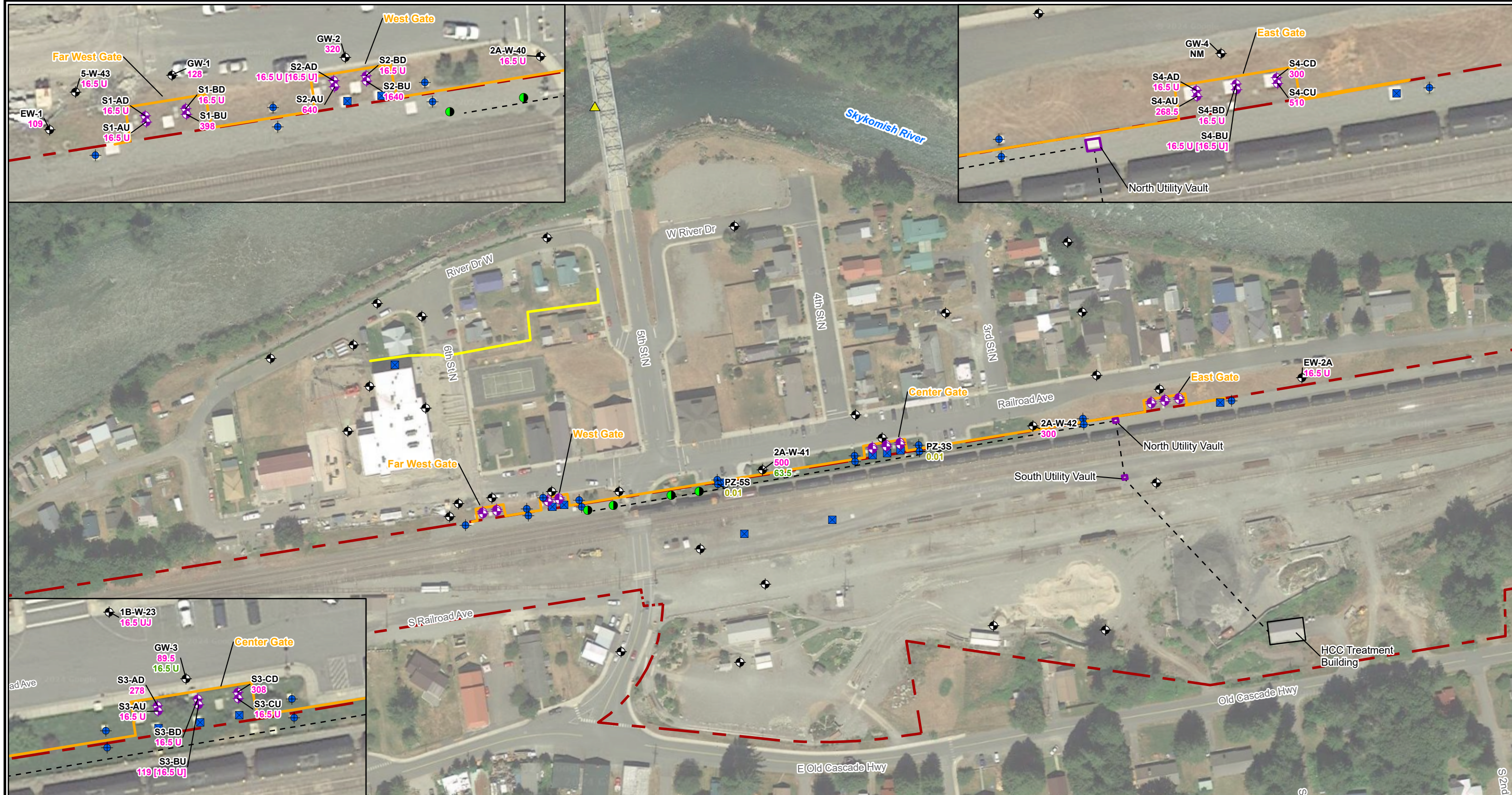
- Notes:
- 1) Aerial Imagery from Google Earth
 - 2) NAVD 88 = North American Vertical Datum of 1988
 - 3) DRO = Diesel Range Organics
 - 4) HO = Heavy Oil
 - 5) U = Compound was analyzed for but not detected and the associated value is the compound quantitation limit.
 - 6) J = Compound was positively identified and the associated numerical value is an estimate.
 - 7) LNAPL = Light Non-Aqueous Phase Liquid
 - 8) [] = Duplicate result

BNSF RAILWAY COMPANY
 FORMER MAINTENANCE AND FUELING FACILITY
 SKYKOMISH, WASHINGTON
 2023 ANNUAL HYDRAULIC CONTROL AND
 CONTAINMENT SYSTEM OPERATIONS REPORT

**SEPTEMBER 2023 TOTAL PETROLEUM
 HYDROCARBONS IN GROUNDWATER**

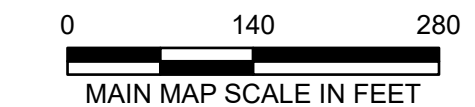
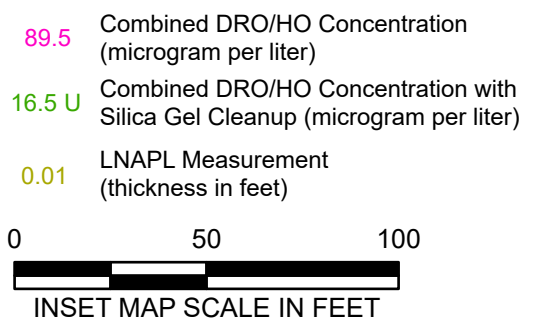
FIGURE 8

CITY: (DEN-TECH) DIV: (GROUP-ENV/GIS) DB: (DHOLMES) LD: (PIC) PM: (TM)
 PROJECT: (PATH: T:_ENV\BNSF\BNSF_Skykomish_WA\ArcPro_ProjectFiles\2023\2023_HCC_Report\2023_HCC_Report.aprx



- Legend**
- Monitoring Well
 - Recovery Well
 - Piezometer
 - Bridge Gauge
 - Sentry Well
 - Biosparge Well

- Existing System Piping to be Used for Proposed Biosparge System
- Mechanically Stabilized Earth Wall
- Hydraulic Control and Containment System Sheet Pile Barrier Wall and Gates
- BNSF Railyard Boundary



- Notes:
- 1) Aerial Imagery from Google Earth
 - 2) U = Compound was analyzed for but not detected and the associated value is the compound quantitation limit.
 - 3) DRO = Diesel Range Organics
 - 4) HO = Heavy Oil
 - 5) NM = Not Monitored
 - 6) LNAPL = Light Non-Aqueous Phase Liquid
 - 7) [] = Duplicate result

BNSF RAILWAY COMPANY
 FORMER MAINTENANCE AND FUELING FACILITY
 SKYKOMISH, WASHINGTON
 2023 ANNUAL HYDRAULIC CONTROL AND
 CONTAINMENT SYSTEM OPERATIONS REPORT

**DECEMBER 2023 TOTAL PETROLEUM
 HYDROCARBONS IN GROUNDWATER**



Appendix A

Laboratory Analytical Report



April 12, 2023

Mr. Kyle Haslam
Arcadis U.S., Inc.
1100 Olive Way, Suite 800
Seattle, WA 98101

Dear Mr. Haslam,

On March 31st, 49 samples were received by our laboratory and assigned our laboratory project number EV23040003. The project was identified as your BNSF Skykomish. The sample identification and requested analyses are outlined on the attached chain of custody record.

No abnormalities or nonconformances were observed during the analyses of the project samples.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Rob Greer
Laboratory Director



CERTIFICATE OF ANALYSIS

CLIENT: Arcadis U.S., Inc. DATE: 4/12/2023
1100 Olive Way, Suite 800 ALS JOB#: EV23040003
Seattle, WA 98101 ALS SAMPLE#: EV23040003-01
CLIENT CONTACT: Kyle Haslam DATE RECEIVED: 03/31/2023
CLIENT PROJECT: BNSF Skykomish COLLECTION DATE: 3/28/2023 9:45:00 AM
CLIENT SAMPLE ID 1C-W-8 WDOE ACCREDITATION: C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	04/07/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	04/07/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	103	04/07/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT: Arcadis U.S., Inc. DATE: 4/12/2023
1100 Olive Way, Suite 800 ALS JOB#: EV23040003
Seattle, WA 98101 ALS SAMPLE#: EV23040003-02
CLIENT CONTACT: Kyle Haslam DATE RECEIVED: 03/31/2023
CLIENT PROJECT: BNSF Skykomish COLLECTION DATE: 3/28/2023 9:50:00 AM
CLIENT SAMPLE ID 5-W-17 WDOE ACCREDITATION: C601

SAMPLE DATA RESULTS

Table with 8 columns: ANALYTE, METHOD, RESULTS, REPORTING LIMITS, DILUTION FACTOR, UNITS, ANALYSIS DATE, ANALYSIS BY. Rows include TPH-Diesel Range, TPH-Oil Range, and SURROGATE C25.

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-03
CLIENT SAMPLE ID	5-W-16	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/28/2023 11:15:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	04/07/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	04/07/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	100	04/07/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-04
CLIENT SAMPLE ID	5-W-55	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/28/2023 4:10:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	04/07/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	04/07/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	108	04/07/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit..

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-05
CLIENT SAMPLE ID	1C-W-4	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/28/2023 11:00:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	100	100	1	UG/L	04/07/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	04/07/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	104	04/07/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains an unidentified diesel range product.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-06
CLIENT SAMPLE ID	5-W-56	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/28/2023 4:05:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	2800	500	5	UG/L	04/09/2023	DHM
TPH-Oil Range	NWTPH-DX	1800	500	5	UG/L	04/09/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 5X Dilution	NWTPH-DX	87.6	04/09/2023	DHM

Chromatogram indicates that it is likely that sample contains an unidentified diesel range product and an unidentified oil range product.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-07
CLIENT SAMPLE ID	5-W-14	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/28/2023 12:40:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	04/08/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	04/08/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	99.6	04/08/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-08
CLIENT SAMPLE ID	5-W-19	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/28/2023 2:08:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	04/08/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	04/08/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	109	04/08/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-09
CLIENT SAMPLE ID	5-W-18	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/28/2023 3:10:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	04/08/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	04/08/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	106	04/08/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-10
CLIENT SAMPLE ID	DUP-1	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/28/2023
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	04/08/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	04/08/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	107	04/08/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-11
CLIENT SAMPLE ID	EW-2A	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/29/2023 5:02:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	04/08/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	04/08/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	150 SUR01	04/08/2023	DHM

SUR01 -One or more surrogate recoveries were above the upper control limits. The sample results may be biased high.
 U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-12
CLIENT SAMPLE ID	MW-4	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/29/2023 10:15:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	140	100	1	UG/L	04/08/2023	DHM
TPH-Oil Range	NWTPH-DX	160	100	1	UG/L	04/08/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	105	04/08/2023	DHM

Chromatogram indicates that it is likely that sample contains an unidentified diesel range product and light oil.
Diesel range product results biased high due to oil range product overlap.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-13
CLIENT SAMPLE ID	EW-1	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/29/2023 12:20:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	04/08/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	04/08/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	110	04/08/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit..

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-14
CLIENT SAMPLE ID	5-W-43	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/29/2023 12:50:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	04/08/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	04/08/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	111	04/08/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-15
CLIENT SAMPLE ID	2-A-W-40	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/29/2023 2:45:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	04/08/2023	DHM
TPH-Oil Range	NWTPH-DX	280	100	1	UG/L	04/08/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	106	04/08/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains weathered lube oil.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-16
CLIENT SAMPLE ID	GW-1	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/29/2023 12:10:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	04/08/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	04/08/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	161 SUR01	04/08/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.
 SUR01 -One or more surrogate recoveries were above the upper control limits. The sample results may be biased high.



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-17
CLIENT SAMPLE ID	GW-3	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/29/2023 5:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	160	100	1	UG/L	04/09/2023	DHM
TPH-Oil Range	NWTPH-DX w/ SGA	U	100	1	UG/L	04/09/2023	DHM
TPH-Diesel Range	NWTPH-DX	490	100	1	UG/L	04/08/2023	DHM
TPH-Oil Range	NWTPH-DX	140	100	1	UG/L	04/08/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX w/ SGA	105	04/09/2023	DHM
C25	NWTPH-DX	106	04/08/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.
 Chromatogram indicates that it is likely that sample contains highly weathered diesel and an unidentified oil range product.
 Oil range product results biased high due to diesel range product overlap.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
		ALS JOB#:	EV23040003
CLIENT CONTACT:	Kyle Haslam	ALS SAMPLE#:	EV23040003-18
CLIENT PROJECT:	BNSF Skykomish	DATE RECEIVED:	03/31/2023
CLIENT SAMPLE ID	GW-2	COLLECTION DATE:	3/29/2023 1:45:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	04/08/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	04/08/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	106	04/08/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-19
CLIENT SAMPLE ID	5W-51	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/29/2023 1:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	270	100	1	UG/L	04/08/2023	DHM
TPH-Oil Range	NWTPH-DX	120	100	1	UG/L	04/08/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	95.7	04/08/2023	DHM

Chromatogram indicates that it is likely that sample contains highly weathered an unidentified diesel range product and an unidentified oil range product.
 Oil range product results biased high due to diesel range product overlap.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-20
CLIENT SAMPLE ID	1B-W-23	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/29/2023 3:35:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	04/08/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	04/08/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	95.1	04/08/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-21
CLIENT SAMPLE ID	2A-W-9	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/29/2023 11:55:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	350	100	1	UG/L	04/08/2023	DHM
TPH-Oil Range	NWTPH-DX	220	100	1	UG/L	04/08/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	91.9	04/08/2023	DHM

Chromatogram indicates that it is likely that sample contains highly weathered diesel and lube oil.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-22
CLIENT SAMPLE ID	1C-W-7	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/29/2023 2:10:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	100	100	1	UG/L	04/08/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	04/08/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	89.9	04/08/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains an unidentified diesel range product.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-23
CLIENT SAMPLE ID	2A-W-41	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/29/2023 4:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	110	100	1	UG/L	04/09/2023	DHM
TPH-Oil Range	NWTPH-DX w/ SGA	U	100	1	UG/L	04/09/2023	DHM
TPH-Diesel Range	NWTPH-DX	310	100	1	UG/L	04/08/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	04/08/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX w/ SGA	91.1	04/09/2023	DHM
C25	NWTPH-DX	92.9	04/08/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains highly weathered diesel.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-24
CLIENT SAMPLE ID	GW-4	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/30/2023 5:50:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	04/08/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	04/08/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	92.1	04/08/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-25
CLIENT SAMPLE ID	S3-CD	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/30/2023 2:49:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	04/08/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	04/08/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	88.6	04/08/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
		ALS JOB#:	EV23040003
CLIENT CONTACT:	Kyle Haslam	ALS SAMPLE#:	EV23040003-26
CLIENT PROJECT:	BNSF Skykomish	DATE RECEIVED:	03/31/2023
CLIENT SAMPLE ID	S4-CD	COLLECTION DATE:	3/30/2023 4:55:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	04/08/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	04/08/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	90.9	04/08/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-27
CLIENT SAMPLE ID	S4-AD	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/30/2023 3:49:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	04/08/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	04/08/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	94.2	04/08/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-28
CLIENT SAMPLE ID	S4-BD	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/29/2023 4:24:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	04/08/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	04/08/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	95.2	04/08/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
		ALS JOB#:	EV23040003
CLIENT CONTACT:	Kyle Haslam	ALS SAMPLE#:	EV23040003-29
CLIENT PROJECT:	BNSF Skykomish	DATE RECEIVED:	03/31/2023
CLIENT SAMPLE ID	S3-AD	COLLECTION DATE:	3/30/2023 1:16:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	04/08/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	04/08/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	91.4	04/08/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-30
CLIENT SAMPLE ID	S1-BU	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/30/2023 12:05:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	04/08/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	04/08/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	94.0	04/08/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-31
CLIENT SAMPLE ID	S4-AU	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/30/2023 3:50:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	04/08/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	04/08/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	80.4	04/08/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-32
CLIENT SAMPLE ID	S1-AU	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/30/2023 12:35:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	04/08/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	04/08/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	92.7	04/08/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-33
CLIENT SAMPLE ID	S3-BD	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/30/2023 1:55:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	04/08/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	04/08/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	95.3	04/08/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-34
CLIENT SAMPLE ID	S4-CU	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/30/2023 5:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	130	100	1	UG/L	04/08/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	04/08/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	93.0	04/08/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains an unidentified diesel range product.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-35
CLIENT SAMPLE ID	S3-CU	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/30/2023 2:48:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	04/08/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	04/08/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	90.7	04/08/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-36
CLIENT SAMPLE ID	S4-BU	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/30/2023 4:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	04/08/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	04/08/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	93.1	04/08/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-37
CLIENT SAMPLE ID	DUP-2	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/29/2023
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	04/08/2023	DHM
TPH-Oil Range	NWTPH-DX	330	100	1	UG/L	04/08/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	101	04/08/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains weathered lube oil.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-38
CLIENT SAMPLE ID	DUP-3	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/29/2023
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	04/08/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	04/08/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	96.9	04/08/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-39
CLIENT SAMPLE ID	S1-BD	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/30/2023 11:20:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	04/08/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	04/08/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	101	04/08/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-40
CLIENT SAMPLE ID	S2-BU	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/30/2023 9:55:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	360	100	1	UG/L	04/08/2023	DHM
TPH-Oil Range	NWTPH-DX	110	100	1	UG/L	04/08/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	91.4	04/08/2023	DHM

Chromatogram indicates that it is likely that sample contains highly weathered diesel and an unidentified oil range product.
Oil range product results biased high due to diesel range product overlap.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-41
CLIENT SAMPLE ID	S2-BD	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/30/2023 9:07:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	04/08/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	04/08/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	94.5	04/08/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-42
CLIENT SAMPLE ID	S3-AU	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/30/2023 1:56:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	160	100	1	UG/L	04/08/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	04/08/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	98.7	04/08/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains an unidentified diesel range product.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-43
CLIENT SAMPLE ID	S1-AD	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/30/2023 11:26:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	04/09/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	04/09/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	100	04/09/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-44
CLIENT SAMPLE ID	S3-BU	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/30/2023 1:21:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	04/09/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	04/09/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	93.0	04/09/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-45
CLIENT SAMPLE ID	S2-AD	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/30/2023 9:05:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	04/09/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	04/09/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	93.8	04/09/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-46
CLIENT SAMPLE ID	2A-W-42	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/30/2023 6:18:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	04/09/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	04/09/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	96.9	04/09/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-47
CLIENT SAMPLE ID	S2-AU	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/30/2023 9:45:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	04/09/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	04/09/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	96.1	04/09/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-48
CLIENT SAMPLE ID	DUP-4	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/30/2023
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	170	100	1	UG/L	04/09/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	04/09/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	96.7	04/09/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains an unidentified diesel range product.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-49
CLIENT SAMPLE ID	EQUIPMENT BLANK	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/30/2023 1:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	04/09/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	04/09/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	92.9	04/09/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS SDG#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	WDOE ACCREDITATION:	C601

LABORATORY BLANK RESULTS

MB-040423W - Batch 192046 - Water by NWTPH-DX

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	UG/L	100	04/07/2023	DHM
TPH-Oil Range	NWTPH-DX	U	UG/L	100	04/07/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

MB-040523W - Batch 192064 - Water by NWTPH-DX

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	UG/L	100	04/08/2023	DHM
TPH-Oil Range	NWTPH-DX	U	UG/L	100	04/08/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

MB2-040523W - Batch 192065 - Water by NWTPH-DX

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	UG/L	100	04/08/2023	DHM
TPH-Oil Range	NWTPH-DX	U	UG/L	100	04/08/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS SDG#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	WDOE ACCREDITATION:	C601

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: 192046 - Water by NWTPH-DX

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
TPH-Diesel Range - BS	NWTPH-DX	85.9			67	125	04/07/2023	DHM
TPH-Diesel Range - BSD	NWTPH-DX	95.0	10		67	125	04/07/2023	DHM

ALS Test Batch ID: 192064 - Water by NWTPH-DX

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
TPH-Diesel Range - BS	NWTPH-DX	119			67	125	04/08/2023	DHM
TPH-Diesel Range - BSD	NWTPH-DX	117	2		67	125	04/08/2023	DHM

ALS Test Batch ID: 192065 - Water by NWTPH-DX

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
TPH-Diesel Range - BS	NWTPH-DX	101			67	125	04/08/2023	DHM
TPH-Diesel Range - BSD	NWTPH-DX	110	8		67	125	04/05/2023	DHM

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS SDG#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	WDOE ACCREDITATION:	C601

MATRIX SPIKE RESULTS


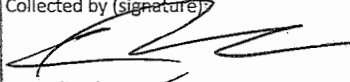
ALS Test Batch ID: 192064 - Water
Parent Sample: S4-AU

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	SPIKE ADDED	PARENT SAMPLE RESULT	LIMITS			ANALYSIS DATE	ANALYSIS BY	
							MIN	MAX	RPD			
TPH-Diesel Range - MS	NWTPH-DX	102			500	29.0	510	67	125		04/08/2023	DHM
TPH-Diesel Range - MSD	NWTPH-DX	101	0		500	29.0	500	67	125	15.2	04/08/2023	DHM

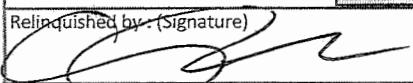
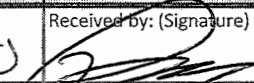
APPROVED BY



Rob Greer
Laboratory Director

Company Name: Arcadis - Chevron - WA		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 16	
1100 Olive Way Suite 800 Seattle, WA 98101		Email To: KYLE HASLAM @ ARCADIS.COM Sydney.Clark@arcadis.com; Amanda.Bowring@arcadis.com								 MT JULIET, TN 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: James O'Connell/Sydney Clark KYLE HASLAM		City/State Collected: SKYKOMISH, WA		Please Circle: PT MT CT ET							
Project Description: 200410 BNSF SKYKOMISH		Client Project # 30144053 30063829-25-21 BNSF SKYKOMISH		Lab Project # CHEVARCWA-200410							SDG # EV2304003
Phone: 206-325-5254 206 726 4753		Site/Facility ID # 15510 AURORA AVEN		P.O. #							Table #
Collected by (print): ELIZABETH SCHELLER		Rush? (Lab MUST Be Notified)		Quote #							Acctnum: CHEVARCWA
Collected by (signature): 		<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		Date Results Needed							Template: T220745
Immediately Packed on Ice N <u> </u> Y <u>X</u>											Prelog: P967072
											PM: 110 Brian Ford
											PB:
											Shipped Via:
											Remarks
											Sample # (lab only)

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	BTEXM, EDB, EDC, 8260D 40ml/amb/MeOH10ml/Syr	NWTPHDX no silica 8oz Clr- NoPres	NWTPHGX 40ml/amb/MeOH10ml/Syr	Total Lead 6010 8oz Clr- NoPres								
1C-W-8	G	GW ^{SS}		3-28-23	0945	1		X										1
5-W-17		GW ^{SS}			0950	1		X										2
5-W-16		SS			1115	1		X										3
5-W-55		SS			1610	1		X										4
1C-W-4		SS			1100	1		X										5
5-W-56		SS			1605	1		X										6
5-W-14		SS			1240	1		X										7
5-W-19		SS			1408	1		X										8
5-W-18		SS			1510	1		X										9
DUP-1	X	X ^{SS}		X		1		X										10

* Matrix: SS - Soil AIR - Air F - Filter GW - Groundwater B - Bioassay WW - WasteWater DW - Drinking Water OT - Other		Remarks: STD TAT		pH _____ Temp _____		Flow _____ Other _____		Sample Receipt Checklist COC Seal Present/Intact: <u> </u> NP <u> </u> Y <u> </u> N COC Signed/Accurate: <u> </u> Y <u> </u> N Bottles arrive intact: <u> </u> Y <u> </u> N Correct bottles used: <u> </u> Y <u> </u> N Sufficient volume sent: <u> </u> Y <u> </u> N If Applicable VOA Zero Headspace: <u> </u> Y <u> </u> N Preservation Correct/Checked: <u> </u> Y <u> </u> N RAD Screen <0.5 mR/hr: <u> </u> Y <u> </u> N					
Relinquished by: (Signature) 		Date: 3-31-23 Time: 1520		Received by: (Signature) 		Trip Blank Received: Yes / No HCL / MeoH TBR							
Relinquished by: (Signature)		Date:		Time:		Received by: (Signature)		Temp: °C		Bottles Received:		If preservation required by Login: Date/Time	
Relinquished by: (Signature)		Date:		Time:		Received for lab by: (Signature)		Date:		Time:		Hold: Condition: NCF / OK	

EV 23040003

Arcadis - Chevron - WA
 1100 Olive Way
 Suite 800
 Seattle, WA 98101

Report to:
James O'Connell/Sydney Clark

Project Description:
206440

City/State Collected:
 [Blank]

Client Project #
30063829-25-21

Site/Facility ID #
BNSF SKY KORVO

Lab Project #
CHEVARCWA-200410

P.O. #
 [Blank]

Quote #
 [Blank]

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

Billing Information:
Attn: Accounts Payable
630 Plaza Dr., Ste. 600
Highlands Ranch, CO 80129

Email To:
Sydney.Clark@arcadis.com/Amanda.Bowring@a

Please Circle: PT MT CT ET

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs
EW-2A	6	SS GW		3-29-23	1702	1
MW-4		SS			1015	1
EW-1		SS			1220	1
5-W-43		SS			1250	1
2-A-W-40		SS			1445	1
GW-1		SS			1210	1
GW-3		SS			1700	2
GW-2		SS			1345	1
5W-51		SS			1300	1
1B-W-23		SS*			1555	1

Remarks:
STD TM

Samples returned via:
 UPS FedEx Courier

Tracking #
 [Blank]

Received by: (Signature) [Signature] 3-31-23 15:20

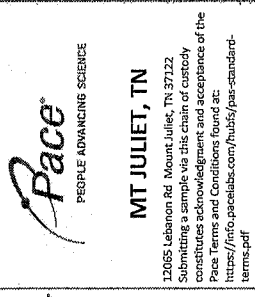
Received by: (Signature) [Signature] 3-31-23 15:20

Relinquished by: (Signature) [Signature]

Relinquished by: (Signature) [Signature]

Relinquished by: (Signature) [Signature]

* Matrix: SS - Soil AIR - Air F - Filter
 GW - Groundwater B - Bioassay
 WW - Waste Water
 DW - Drinking Water
 OT - Other



SDG # **EV23040003**

Table #

Account: **CHEVARCWA**

Template: **T220745**

Prelopin: **P967072**

PM: **110 Brian Ford**

PB:

Shipped Via:

Remarks

Sample # (lab only)

Analysis / Container / Preservative	Analysis / Container / Preservative	Analysis / Container / Preservative	Analysis / Container / Preservative	Analysis / Container / Preservative	Analysis / Container / Preservative	Analysis / Container / Preservative	Analysis / Container / Preservative	Analysis / Container / Preservative	Analysis / Container / Preservative
BTXM, EDB, EDC 8260D 40mlamb/MeOH10ml/SY	NWTPHDX no silica 80ZC/NOPres	NWTPHGX 40mlamb/MeOH10ml/SY	Total Lead 6010 80ZC/NOPres	NWTPHDX	W/SSG				
									11
									12
									13
									14
									15
									16
									17
									18
									19
									20

Sample Receipt Checklist

COC Seal Present/Intact: Y N

COC Signed/Accurate: Y N

Bottles arrive intact: Y N

Correct bottles used: Y N

Sufficient volume sent: Y N

If Applicable: Y N

VOA Zero Readspace: Y N

Preservation Correct/Checked: Y N

RAD Screen <0.5 mR/hr: Y N

PH _____ Temp _____

Flow _____ Other _____

Trip Blank Received: Yes / No

HCL / MeOH

TBR

Temp: _____ °C Bottles Received:

Date: _____ Time: _____

Received by: (Signature) [Signature]

Received by: (Signature) [Signature]

Received for lab by: (Signature)

Date: 3-31-23 15:20

Date: 3-31-23 15:20

Date: [Blank]

Condition:
 NCF / OK

EV23040003

Chain of Custody Page 2 of 6

Company Name/Address:
Arcadis - Chevron - WA
 1100 Olive Way
 Suite 800
 Seattle, WA 98101

Report to:
 James O'Connell/Sydney Clark

Billing Information:
 Attn: Accounts Payable
 630 Plaza Dr., Ste. 600
 Highlands Ranch, CO 80129

Project Description:
 2069410

City/State Collected:
 City/State
 Collected:

Client Project #
 30063829-25-21

Site/Facility ID #
 BNSF SKYDOME
 15510 AURORA AVE - N

Lab Project #
 CHEVARCWA-200410

Quote #
 P.O. #

Phone: 206-325-5254

Email To:
 Sydney.Clark@arcadis.com; Amenda.Bowling@a...
 City/State
 Collected:

Request? (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 ___

Remarks:
 STD TAX

Sample ID
 2A-W-9
 1C-W-7
 2A-W-41
 6W-41
 S3-CD
 S4-CD
 S4-AD
 S4-BD
 S3-AD
 S1-BU

Comp/Grab Matrix* Depth
 G1 6W SS7
 | | SS
 | | SS
 | | SS
 | | SS
 | | SS
 | | SS
 | | SS
 | | SS
 | | SS
 | | SS

Date
 3-29-23
 |
 X
 3-30-23
 |
 |
 |
 |
 |
 X

Time
 1155
 1410
 1600
 1750
 1449
 1655
 1549
 1624
 1316
 1205

No. of Cntrs
 1
 1
 2
 1
 1
 1
 1
 1
 1
 1

Analysis / Container / Preservative
 BTEXM, EDB, EDC, 8260D, 40MIAMB/MeOH10MI/SYR
 NWT PHDX no silica 8ozClr-NOPres
 NWT PHGX 40MIAMB/MeOH10MI/SYR
 Total Lead 6010 8ozClr-NOPres
 NWT PHDX W 56C

Shipping Via:
 Remarks

Sample # (lab only)

Shipped Via:
 Remarks

Account: CHEVARCWA
Template: T220745
Prelogin: P967072
PM: 110 - Brian Ford
PB:

SDG #
Table #

Accnum: CHEVARCWA
Template: T220745
Prelogin: P967072
PM: 110 - Brian Ford
PB:

Company Name/Address:
Arcadis - Chevron - WA
 1100 Olive Way
 Suite 800
 Seattle, WA 98101

Report to:
 James O'Connell/Sydney Clark

Project Description:
 2069410

City/State Collected:
 City/State
 Collected:

Client Project #
 30063829-25-21

Site/Facility ID #
 BNSF SKYDOME
 15510 AURORA AVE - N

Lab Project #
 CHEVARCWA-200410

Quote #
 P.O. #

Request? (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 ___

Remarks:
 STD TAX

Sample ID
 2A-W-9
 1C-W-7
 2A-W-41
 6W-41
 S3-CD
 S4-CD
 S4-AD
 S4-BD
 S3-AD
 S1-BU

Comp/Grab Matrix* Depth
 G1 6W SS7
 | | SS
 | | SS
 | | SS
 | | SS
 | | SS
 | | SS
 | | SS
 | | SS
 | | SS

Date
 3-29-23
 |
 X
 3-30-23
 |
 |
 |
 |
 |
 X

Time
 1155
 1410
 1600
 1750
 1449
 1655
 1549
 1624
 1316
 1205

No. of Cntrs
 1
 1
 2
 1
 1
 1
 1
 1
 1
 1

Analysis / Container / Preservative
 BTEXM, EDB, EDC, 8260D, 40MIAMB/MeOH10MI/SYR
 NWT PHDX no silica 8ozClr-NOPres
 NWT PHGX 40MIAMB/MeOH10MI/SYR
 Total Lead 6010 8ozClr-NOPres
 NWT PHDX W 56C

Account: CHEVARCWA
Template: T220745
Prelogin: P967072
PM: 110 - Brian Ford
PB:

SDG #
Table #

Accnum: CHEVARCWA
Template: T220745
Prelogin: P967072
PM: 110 - Brian Ford
PB:

Shipping Via:
 Remarks

Sample # (lab only)

Shipped Via:
 Remarks

Sample ID	Comp/Grab Matrix* Depth	Date	Time	No. of Cntrs	Analysis / Container / Preservative	pH		Temp		Flow	Other
						Temp	Other				
2A-W-9	G1 6W SS7	3-29-23	1155	1							
1C-W-7	SS		1410	1							
2A-W-41	SS	X	1600	2							
6W-41	SS	3-30-23	1750	1							
S3-CD	SS		1449	1							
S4-CD	SS		1655	1							
S4-AD	SS		1549	1							
S4-BD	SS		1624	1							
S3-AD	SS		1316	1							
S1-BU	X SS	X	1205	1							

Remarks:
 STD TAX

Sample Matrix:
 SS - Soil AIR - Air F - Filter
 GW - Groundwater B - Bioassay
 WW - Wastewater
 DW - Drinking Water
 OT - Other

Samples returned via:
 UPS FedEx Courier

Relinquished by: (Signature)
 Relinquished by: (Signature)
 Relinquished by: (Signature)

Tracking #
 Received by: (Signature)
 Received by: (Signature)
 Received for lab by: (Signature)

Date:
 3-31-23 1520
 Date: 3-31-23 1530
 Date: 3-31-23 1530

Temp: °C °F

Date:

Condition:
 NCF / OK

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

If preservation required by Logrn: Date/Time

EV23040003

Chain of Custody Page 1 of 4

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:
James O. Connell/Sydney Clark
 Project Description:
 200410

Pace
 PEOPLE ADVANCING SCIENCE
 MT JULIET, TN
 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>

City/State Collected:
 Client Project #
 Site/Facility ID #
 P.O. #
 Quote #

City/State Collected:
 Lab Project #
 CHEVARCWA-200410

Phone: 206-325-5254
 Collected by (print):
 Collected by (signature):
 Immediately Packed on Ice N Y

SDG #
 Table #
 Acctnum: CHEVARCWA
 Template: T220745
 Prelogam: P967072
 PM: 110 - Brian Ford
 PB:
 Shipped Via:
 Remarks
 Sample # (lab only)

Analysis / Container / Preservative
 NWTPHGX 40mlamb/MeOH10ml/Syr
 Total Lead 6010 8ozClr-NOPres
 NWTPHDX no silica 8ozClr-NOPres
 BTEXM,EDB,EDC 8260D 40mlamb/MeOH10ml/Syr

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs
S4-AU	G	6WBS		3-30-23	1550	3
MS		SS			1550	
MSD		SS			1550	
S1-AU		SS			1735	1
S3-BD		SS			1355	1
S4-CU		SS			1700	1
S3-CU		SS			1448	1
S4-BU		SS			1630	1
DUP-2		SS		3-29-23		1
DUP-3	X	XSS		3-29-23		1

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

Analysis / Container / Preservative
 NWTPHGX 40mlamb/MeOH10ml/Syr
 Total Lead 6010 8ozClr-NOPres
 NWTPHDX no silica 8ozClr-NOPres
 BTEXM,EDB,EDC 8260D 40mlamb/MeOH10ml/Syr

Remarks:
 * Matrix:
 SS - Soil AIR - Air F - Filter
 GW - Groundwater B - Bioassay
 WW - Waste Water
 DW - Drinking Water
 OT - Other
 S70 TAY

PH _____ Temp _____
 Flow _____ Other _____

Trip Blank Received: Yes/No
 HCL/MsOH TBR
 Temp: °C Bottles Received:
 Date: Time:

Tracking #
 Received by: (Signature) 3-31-23 1529
 Received by: (Signature) 3-31-23 1520
 Received for lab by: (Signature)
 Date: Time:
 Relinquished by: (Signature)
 Relinquished by: (Signature)
 Relinquished by: (Signature)

Condition: NCF / OK
 Hold:
 Date: Time:

EV23040003

Company Name/Address: **Arcadis - Chevron - WA**
 1100 Olive Way
 Suite 800
 Seattle, WA 98101

Report to: **James O'Connell/Sydney Clark**
 Email To: **Sydney.Clark@arcadis.com; Amanda.Bowring@a**

Billing Information:
 Attn: Accounts Payable
 630 Plaza Dr., Ste. 600
 Highlands Ranch, CO 80129


City/State Collected: _____
 Client Project # **30063829.25.21**
 Site/Facility ID # **BNSF SKYCOMSM**
 Lab Project # **CHEVARCWA-200410**
 P.O. # _____
 Quote # _____

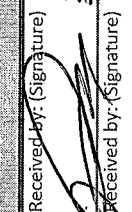
Project Description: **200410**
 Phone: **206-325-5254**
 Collected by (print): _____
 Collected by (signature): _____
 Rush? (Lab MUST Be Notified)
 ___ Same Day ___ Five Day
 ___ Next Day ___ 5 Day (Rad Only)
 ___ Two Day ___ 10 Day (Rad Only)
 ___ Three Day _____
 Immediately Packed on Ice N ___ Y ___

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs
S1 - BU	61	SS		3-30-23	1205	1
S1 - BD		SS		1120		1
S2 - BU		SS		0955		1
S2 - BD		SS		0907		1
S3 - AU		SS		1356		1
S1 - AD		SS		1126		1
S3 - BU		SS		1321		1
S2 - AD		SS		0905		1
2A-W-42		SS		1818		1
S2 - AU		SS		0945		1

Remarks: **STD TAT**

Samples returned via: UPS FedEx Courier

Relinquished by: (Signature)  Date: **3-31-23** Time: **1520**

Relinquished by: (Signature)  Date: **3-31-23** Time: **1520**

Relinquished by: (Signature) _____ Date: _____ Time: _____

Analysis / Container / Preservative	Pres Chk
BTEXM, EDB, EDC 8260D 40mlamb/MeOH10ml/Syr	
NWTFPHDX no silica 80zclr-NOPres	
NWTFPHGX 40mlamb/MeOH10ml/Syr	
Total Lead 6010 80zclr-NOPres	

SDG #	Table #	Acctnum: CHEVARCWA	Template: T220745	Prelogim: P967072	PM: 110 - Brian Ford	PB:	Shipped Via:	Remarks	Sample # (lab only)
								44 NOT RECEIVED	
								42 31	
								43 40	
								44 41	
								45 42	
								46 43	
								47 44	
								48 45	
								49 46	
								50 47	

Sample Receipt Checklist

COC Seal Present/Intact: ___ 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

if preservation required by Login: Date/Time

Hold: _____ Condition: NCF / OK



MT JULIET, TN
 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/pac-standard-terms.pdf>

EV 2304 0003

Arcadis - Chevron - WA
 1100 Olive Way
 Suite 800
 Seattle, WA 98101

Report to: **James O'Connell/Sydney Clark**

Project Description: **200410**

Billing Information:
 Attn: Accounts Payable
 630 Plaza Dr., Ste. 600
 Highlands Ranch, CO 80129

Email To: **Sydney.Clark@arcadis.com; Amanda.Bowring@a...**

City/State Collected: _____

Client Project # **30063829-25-21**
 Site/Facility ID # **BNSF SKYLARK 151**

Lab Project # **CHEVARCWA-200410**

P.O. # _____

Quote # _____

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	Sample Description	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs
DUP - 4	EQUIPMENT BLANK	67	6WSS		3-30-23	1300	1
			6WSS		3-30-23	1300	1
			SS				
			SS				
			SS				
			SS				
			SS				
			SS				

NWT/PHDX no silica 8ozCh-NOPres NWT/PHGX 40mlamb/MeOH10ml/SYR Total Lead 6010 8ozCh-NOPres	BTEXM, EDB, EDC 8260D 40mlamb/MeOH10ml/SYR																		

* Matrix: SS - Soil, AIR - Air, F - Filter, GW - Groundwater, B - Bioassay, WW - Waste Water, DW - Drinking Water, OT - Other _____

Remarks: **SID TAX**

Samples returned via: UPS _____ FedEx _____ Courier _____

Tracking # _____

Received by: (Signature) _____ Time: 3:31-23 15-20

Received by: (Signature) _____ Time: _____

Received for lab by: (Signature) _____ Date: _____

Relinquished by: (Signature) Relinquished by: (Signature) Relinquished by: (Signature)	Trip Blank Received: Yes/No HCL/MaOH TBR °C Bottles Received: _____ Date: _____	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: Y N

YOA Zero HeadSpace: Y N

Preservation Correct/Checked: Y N

RAD Screen <0.5 mB/hr: Y N

If preservation required by Login: Date/Time _____

Hold: _____ Condition: NCF / OK



MT JULIET, TN
 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 # _____

Table # _____

Account: CHEVARCWA

Template: T220745

Prelogin: P967072

PM: 110 - Brian Ford

PB: _____

Shipped Via: _____

Remarks: _____

Sample # (lab only) _____

ALS ENVIRONMENTAL

Sample Receiving Checklist

Client: ARCADIS

ALS Job #: FV23040003

Project: BNSF SKYKOMETH

Received Date: 3/31/23 Received Time: 15:20 By: BF

Type of shipping container: Cooler Box Other

Shipped via: FedEx Ground UPS Mail Courier Hand Delivered
FedEx Express On Ice

	<u>Yes</u>	<u>No</u>	<u>N/A</u>
Were custody seals on outside of shipping container?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
If yes, how many? _____ Where? _____			
Custody seal date: _____ Seal name: _____			

Was Chain of Custody properly filled out (ink, signed, dated, etc.)?

Did all bottles have labels?

Did all bottle labels and tags agree with Chain of Custody?

Were samples received within hold time?

Did all bottles arrive in good condition (unbroken, etc.)?

Was sufficient amount of sample sent for the tests indicated?

Was correct preservation added to samples?

If no, Sample Control added preservative to the following:

<u>Sample Number</u>	<u>Reagent</u>	<u>Analyte</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____

Were VOA vials checked for absence of air bubbles?
Bubbles present in sample #: _____

Temperature of cooler upon receipt: 6.4°C Cold Cool Ambient N/A

Explain any discrepancies: _____

Was client contacted? _____ Who was called? _____ By whom? _____ Date: _____

Outcome of call: _____



June 23, 2023

Mr. Kyle Haslam
Arcadis U.S., Inc.
1100 Olive Way, Suite 800
Seattle, WA 98101

Dear Mr. Haslam,

On June 16th, 35 samples were received by our laboratory and assigned our laboratory project number EV23060093. The project was identified as your BNSF Skykomish. The sample identification and requested analyses are outlined on the attached chain of custody record.

No abnormalities or nonconformances were observed during the analyses of the project samples.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Rob Greer
Laboratory Director



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	6/23/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23060093
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23060093-01
CLIENT SAMPLE ID:	GW-1_06152023	DATE RECEIVED:	06/16/2023
		COLLECTION DATE:	6/15/2023 10:06:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	06/21/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	06/21/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	105	06/21/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.
 Chromatogram indicates that it is likely that sample contains an unidentified oil range product.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	6/23/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23060093
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23060093-02
CLIENT SAMPLE ID	GW-2_06142023	DATE RECEIVED:	06/16/2023
		COLLECTION DATE:	6/14/2023 11:21:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	06/21/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	06/21/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	96.4	06/21/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	6/23/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23060093
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23060093-03
CLIENT SAMPLE ID	GW-3_06142023	DATE RECEIVED:	06/16/2023
		COLLECTION DATE:	6/14/2023 1:25:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	400	50	1	UG/L	06/21/2023	DHM
TPH-Diesel Range	NWTPH-DX w/SGA	150	50	1	UG/L	06/23/2023	DHM
TPH-Oil Range	NWTPH-DX	110	100	1	UG/L	06/21/2023	DHM
TPH-Oil Range	NWTPH-DX w/SGA	U	100	1	UG/L	06/23/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	111	06/21/2023	DHM
C25	NWTPH-DX w/SGA	108	06/23/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains an unidentified diesel range product and an unidentified oil range product.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	6/23/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23060093
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23060093-04
CLIENT SAMPLE ID	GW-4_06142023	DATE RECEIVED:	06/16/2023
		COLLECTION DATE:	6/14/2023 2:40:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	06/21/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	06/21/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	88.3	06/21/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	6/23/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23060093
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23060093-05
CLIENT SAMPLE ID	EW-1_06142023	DATE RECEIVED:	06/16/2023
		COLLECTION DATE:	6/14/2023 10:01:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	06/21/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	06/21/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	83.8	06/21/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	6/23/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23060093
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23060093-06
CLIENT SAMPLE ID	EW-2A_06152023	DATE RECEIVED:	06/16/2023
		COLLECTION DATE:	6/15/2023 10:11:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	06/21/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	06/21/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	76.3	06/21/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	6/23/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23060093
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23060093-07
CLIENT SAMPLE ID	S1-AD_06142023	DATE RECEIVED:	06/16/2023
		COLLECTION DATE:	6/14/2023 3:55:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	06/21/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	06/21/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	86.6	06/21/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	6/23/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23060093
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23060093-08
CLIENT SAMPLE ID	S1-AU_06142023	DATE RECEIVED:	06/16/2023
		COLLECTION DATE:	6/14/2023 4:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	06/21/2023	DHM
TPH-Oil Range	NWTPH-DX	140	100	1	UG/L	06/21/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	87.0	06/21/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains an unidentified oil range product.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	6/23/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23060093
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23060093-09
CLIENT SAMPLE ID	S1-BD_06152023	DATE RECEIVED:	06/16/2023
		COLLECTION DATE:	6/15/2023 4:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	06/21/2023	DHM
TPH-Oil Range	NWTPH-DX	100	100	1	UG/L	06/21/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	79.8	06/21/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.
 Chromatogram indicates that it is likely that sample contains an unidentified oil range product.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	6/23/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23060093
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23060093-10
CLIENT SAMPLE ID	S1-BU_06152023	DATE RECEIVED:	06/16/2023
		COLLECTION DATE:	6/15/2023 4:40:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	06/21/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	06/21/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	69.0	06/21/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	6/23/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23060093
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23060093-11
CLIENT SAMPLE ID	S2-AD_06142023	DATE RECEIVED:	06/16/2023
		COLLECTION DATE:	6/14/2023 5:05:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	06/21/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	06/21/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	77.5	06/21/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	6/23/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23060093
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23060093-12
CLIENT SAMPLE ID	S2-AU_06142023	DATE RECEIVED:	06/16/2023
		COLLECTION DATE:	6/14/2023 5:15:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	06/21/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	06/21/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	77.4	06/21/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	6/23/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23060093
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23060093-13
CLIENT SAMPLE ID	S2-BD_06152023	DATE RECEIVED:	06/16/2023
		COLLECTION DATE:	6/15/2023 9:05:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	06/21/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	06/21/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	73.0	06/21/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	6/23/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23060093
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23060093-14
CLIENT SAMPLE ID	S2-BU_06152023	DATE RECEIVED:	06/16/2023
		COLLECTION DATE:	6/15/2023 9:05:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	330	100	1	UG/L	06/21/2023	DHM
TPH-Oil Range	NWTPH-DX	130	100	1	UG/L	06/21/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	85.4	06/21/2023	DHM

Chromatogram indicates that it is likely that sample contains an unidentified diesel range product and an unidentified oil range product.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	6/23/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23060093
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23060093-15
CLIENT SAMPLE ID	S3-AD_06152023	DATE RECEIVED:	06/16/2023
		COLLECTION DATE:	6/15/2023 10:47:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	06/21/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	06/21/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	84.0	06/21/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	6/23/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23060093
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23060093-16
CLIENT SAMPLE ID	S3-AU_06152023	DATE RECEIVED:	06/16/2023
		COLLECTION DATE:	6/15/2023 10:58:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	210	100	1	UG/L	06/21/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	06/21/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	70.4	06/21/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains an unidentified diesel range product.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	6/23/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23060093
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23060093-17
CLIENT SAMPLE ID	S3-BD_06152023	DATE RECEIVED:	06/16/2023
		COLLECTION DATE:	6/15/2023 11:42:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	06/21/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	06/21/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	78.5	06/21/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	6/23/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23060093
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23060093-18
CLIENT SAMPLE ID	S3-BU_06152023	DATE RECEIVED:	06/16/2023
		COLLECTION DATE:	6/15/2023 11:37:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	06/22/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	06/22/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	82.7	06/22/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	6/23/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23060093
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23060093-19
CLIENT SAMPLE ID	S3-CD_06152023	DATE RECEIVED:	06/16/2023
		COLLECTION DATE:	6/15/2023 12:34:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	06/22/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	06/22/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	77.5	06/22/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT: Arcadis U.S., Inc. DATE: 6/23/2023
1100 Olive Way, Suite 800 ALS JOB#: EV23060093
Seattle, WA 98101 ALS SAMPLE#: EV23060093-20
CLIENT CONTACT: Kyle Haslam DATE RECEIVED: 06/16/2023
CLIENT PROJECT: BNSF Skykomish COLLECTION DATE: 6/15/2023 12:25:00 PM
CLIENT SAMPLE ID S3-CU_06152023 WDOE ACCREDITATION: C601

SAMPLE DATA RESULTS

Table with columns: ANALYTE, METHOD, RESULTS, REPORTING LIMITS, DILUTION FACTOR, UNITS, ANALYSIS DATE, ANALYSIS BY. Includes rows for TPH-Diesel Range, TPH-Oil Range, and SURROGATE C25.

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	6/23/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23060093
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23060093-21
CLIENT SAMPLE ID	S4-AD_06152023	DATE RECEIVED:	06/16/2023
		COLLECTION DATE:	6/15/2023 1:26:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	06/22/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	06/22/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	66.4	06/22/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	6/23/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23060093
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23060093-22
CLIENT SAMPLE ID	S4-AU_06152023	DATE RECEIVED:	06/16/2023
		COLLECTION DATE:	6/15/2023 1:16:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	06/22/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	06/22/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	78.4	06/22/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	6/23/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23060093
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23060093-23
CLIENT SAMPLE ID	S4-BD_06152023	DATE RECEIVED:	06/16/2023
		COLLECTION DATE:	6/15/2023 1:58:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	06/21/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	06/21/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	113	06/21/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	6/23/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23060093
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23060093-24
CLIENT SAMPLE ID	S4-BU_06152023	DATE RECEIVED:	06/16/2023
		COLLECTION DATE:	6/15/2023 1:55:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	06/21/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	06/21/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	110	06/21/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	6/23/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23060093
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23060093-25
CLIENT SAMPLE ID	S4-CD_06152023	DATE RECEIVED:	06/16/2023
		COLLECTION DATE:	6/15/2023 2:32:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	06/22/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	06/22/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	113	06/22/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	6/23/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23060093
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23060093-26
CLIENT SAMPLE ID	S4-CU_06152023	DATE RECEIVED:	06/16/2023
		COLLECTION DATE:	6/15/2023 2:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	06/22/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	06/22/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	105	06/22/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	6/23/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23060093
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23060093-27
CLIENT SAMPLE ID	2A-W-40_06142023	DATE RECEIVED:	06/16/2023
		COLLECTION DATE:	6/14/2023 11:16:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	06/22/2023	DHM
TPH-Oil Range	NWTPH-DX	120	100	1	UG/L	06/22/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	109	06/22/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains an unidentified oil range product.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	6/23/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23060093
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23060093-28
CLIENT SAMPLE ID	2A-W-41_06142023	DATE RECEIVED:	06/16/2023
		COLLECTION DATE:	6/14/2023 12:22:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	250	50	1	UG/L	06/22/2023	DHM
TPH-Diesel Range	NWTPH-DX w/SGA	95	50	1	UG/L	06/23/2023	DHM
TPH-Oil Range	NWTPH-DX	120	100	1	UG/L	06/22/2023	DHM
TPH-Oil Range	NWTPH-DX w/SGA	U	100	1	UG/L	06/23/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	112	06/22/2023	DHM
C25	NWTPH-DX w/SGA	99.2	06/23/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.
 Chromatogram indicates that it is likely that sample contains an unidentified diesel range product and an unidentified oil range product.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	6/23/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23060093
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23060093-29
CLIENT SAMPLE ID	2A-W-42_06142023	DATE RECEIVED:	06/16/2023
		COLLECTION DATE:	6/14/2023 1:50:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	110	100	1	UG/L	06/22/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	06/22/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	117	06/22/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains an unidentified diesel range product.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	6/23/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23060093
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23060093-30
CLIENT SAMPLE ID	1B-W-23_06152023	DATE RECEIVED:	06/16/2023
		COLLECTION DATE:	6/15/2023 11:10:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	06/22/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	06/22/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	116	06/22/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	6/23/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23060093
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23060093-31
CLIENT SAMPLE ID	5-W-43_06142023	DATE RECEIVED:	06/16/2023
		COLLECTION DATE:	6/14/2023 10:00:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	06/22/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	06/22/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	95.2	06/22/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	6/23/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23060093
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23060093-32
CLIENT SAMPLE ID	EB_06152023	DATE RECEIVED:	06/16/2023
		COLLECTION DATE:	6/15/2023 3:06:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	06/22/2023	DHM
TPH-Oil Range	NWTPH-DX	110	100	1	UG/L	06/22/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	98.4	06/22/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains an unidentified oil range product.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	6/23/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23060093
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23060093-33
CLIENT SAMPLE ID	FD-1_06142023	DATE RECEIVED:	06/16/2023
		COLLECTION DATE:	6/14/2023
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	06/22/2023	DHM
TPH-Oil Range	NWTPH-DX	150	100	1	UG/L	06/22/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	101	06/22/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains an unidentified oil range product.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	6/23/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23060093
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23060093-34
CLIENT SAMPLE ID	FD-2_06152023	DATE RECEIVED:	06/16/2023
		COLLECTION DATE:	6/15/2023
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	06/22/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	06/22/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	115	06/22/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	6/23/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23060093
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23060093-35
CLIENT SAMPLE ID	FD-3_06152023	DATE RECEIVED:	06/16/2023
		COLLECTION DATE:	6/15/2023
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	06/22/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	06/22/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	111	06/22/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT: Arcadis U.S., Inc. DATE: 6/23/2023
1100 Olive Way, Suite 800 ALS SDG#: EV23060093
Seattle, WA 98101 WDOE ACCREDITATION: C601
CLIENT CONTACT: Kyle Haslam
CLIENT PROJECT: BNSF Skykomish

LABORATORY BLANK RESULTS

MB-062123W - Batch 196692 - Water by NWTPH-DX

Table with 7 columns: ANALYTE, METHOD, RESULTS, UNITS, REPORTING LIMITS, ANALYSIS DATE, ANALYSIS BY. Rows include TPH-Diesel Range and TPH-Oil Range with results 'U'.

U - Analyte analyzed for but not detected at level above reporting limit.

MB2-062123W - Batch 196693 - Water by NWTPH-DX

Table with 7 columns: ANALYTE, METHOD, RESULTS, UNITS, REPORTING LIMITS, ANALYSIS DATE, ANALYSIS BY. Rows include TPH-Diesel Range and TPH-Oil Range with results 'U'.

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	6/23/2023
CLIENT CONTACT:	Kyle Haslam	ALS SDG#:	EV23060093
CLIENT PROJECT:	BNSF Skykomish	WDOE ACCREDITATION:	C601

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: 196692 - Water by NWTPH-DX

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
TPH-Diesel Range - BS	NWTPH-DX	92.2			67	125	06/21/2023	DHM
TPH-Diesel Range - BSD	NWTPH-DX	93.6	2		67	125	06/21/2023	DHM

ALS Test Batch ID: 196693 - Water by NWTPH-DX

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
TPH-Diesel Range - BS	NWTPH-DX	74.8			67	125	06/22/2023	DHM
TPH-Diesel Range - BSD	NWTPH-DX	73.9	1		67	125	06/21/2023	DHM



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	6/23/2023
CLIENT CONTACT:	Kyle Haslam	ALS SDG#:	EV23060093
CLIENT PROJECT:	BNSF Skykomish	WDOE ACCREDITATION:	C601

MATRIX SPIKE RESULTS

ALS Test Batch ID: 196692 - Water

Parent Sample: S3-BD_06152023

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	SPIKE ADDED	PARENT SAMPLE RESULT	RESULT	LIMITS			ANALYSIS DATE	ANALYSIS BY
								MIN	MAX	RPD		
TPH-Diesel Range - MS	NWTPH-DX	75.1			485	16.0	360	67	125		06/21/2023	DHM
TPH-Diesel Range - MSD	NWTPH-DX	74.3	1		485	16.0	360	67	125	15.2	06/21/2023	DHM

ALS Test Batch ID: 196693 - Water

Parent Sample: 2A-W-42_06142023

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	SPIKE ADDED	PARENT SAMPLE RESULT	RESULT	LIMITS			ANALYSIS DATE	ANALYSIS BY
								MIN	MAX	RPD		
TPH-Diesel Range - MS	NWTPH-DX	108			493	110	530	67	125		06/22/2023	DHM
TPH-Diesel Range - MSD	NWTPH-DX	102	4		493	110	500	67	125	15.2	06/22/2023	DHM

APPROVED BY

Rob Greer
Laboratory Director



Cincinnati, OH
+1 513 733 5336

Everett, WA
+1 425 356 2600

Fort Collins, CO
+1 970 490 1511

Holland, MI
+1 616 399 6070

Houston, TX
+1 281 530 5656

Middletown, PA
+1 717 944 5541

Spring City, PA
+1 610 948 4903

Salt Lake City, UT
+1 801 266 7700

South Charleston, WV
+1 304 356 3168

York, PA
+1 717 505 5280

Chain of Custody Form

Page 1 of 4

COC ID: **289098**

EV23060093

Customer Information		Project Information		ALS Project Manager: <u>ALS Work Order #:</u>																				
Purchase Order	30159458	Project Name	BNSF Skykomish	Parameter/Method Request for Analysis																				
Work Order		Project Number		A	NWTPH-DX	B	NWTPH-DX w/ SGC	C		D		E		F		G		H		I		J		Hold
Company Name	Arcadis U.S., Inc.	Bill To Company	Arcadis U.S., Inc.	D		E		F		G		H		I		J								
Send Report To	Kyle Haslam	Invoice Attn	Account Payable																					
Address	1100 Olive Way Suite 800	Address	630 Plaza Drive Suite 600																					
City/State/Zip	Seattle, WA 98101	City/State/Zip	Highlands Ranch CO 80129																					
Phone	(206) 325-5254	Phone	(303) 471-3699																					
Fax	(206) 325-8218	Fax																						
e-Mail Address	kyle.haslam@arcadis.com	e-Mail Address	accountspayable.administration@arcadis-us.com																					
No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Results Due Date:							
1	GW1 - 06152023	6-15-2023	1006	Water	-	1	X																	
2	GW2 - 06142023	6-14-2023	1121	Water	-	1	X																	
3	GW3 - 06142023	6-14-2023	1325	Water	-	2	X	X																
4	GW4 - 06142023	6-14-2023	1440	Water	-	1	X																	
5	EW1 - 06142023	6-14-2023	1001	Water	-	1	X																	
6	EW2A - 06152023	6-15-2023	1011	Water	-	1	X																	
7	S1-AD - 06142023	6-14-23	1555	Water	-	1	X																	
8	S1-AU - 06142023	6-14-23 CN	1600	Water	-	1	X																	
9	S1-BD - 06152023	6-15-2023	1630	Water	-	1	X																	
10	S1-BU - 06152023	6-15-2023	1640	Water	-	1	X																	
Sampler(s) Please Print & Sign		Shipment Method		Required Turnaround Time: (Check Box)		Other		2 Wk Days		5 Wk Days		24 Hour												
ROBERTO PIEMONTESE		ROBERTO PIEMONTESE		<input checked="" type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>												
Relinquished by:		Date:	Time:	Received by (Laboratory):		Cooler ID		Cooler Temp.		QC Package: (Check One Box Below)														
ROBERTO PIEMONTESE		6/16/23	8:00	Angela ALS		1		1.30		Level II Std QC <input checked="" type="checkbox"/>														
Relinquished by:		Date:	Time:	Checked by (Laboratory):		2		2.20		Level III Std QC/Raw Date <input type="checkbox"/>														
		Date:	Time:			3		3.10		Level IV SW846/CLP <input type="checkbox"/>														
		Date:	Time:			4		1.60		Other <input type="checkbox"/>														
Preservative Key:		1-HCl	2-HNO ₃	3-H ₂ SO ₄	4-NaOH	5-Na ₂ S ₂ O ₃	6-NaHSO ₄	7-Other	8-4°C	9-5035														

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
 2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
 3. The Chain of Custody is a legal document. All information must be completed accurately. *Checked by Amber to GWS - CN*



Cincinnati, OH
+1 513 733 5336
Everett, WA
+1 425 356 2600

Fort Collins, CO
+1 970 490 1511
Holland, MI
+1 616 399 6070

Houston, TX
+1 281 530 5656
Middletown, PA
+1 717 944 5541

Spring City, PA
+1 610 948 4903
Salt Lake City, UT
+1 801 266 7700
York, PA
+1 717 505 5280

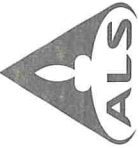
South Charleston, WV
+1 304 356 3168

Page 2 of 4
COC ID: 289097

EV23060093

Customer Information		Project Information		ALS Project Manager:		Parameter/Method Request for Analysis											
Purchase Order	30159458	Project Name	BNSF Skykomish	A	NWTPH-DX												
Work Order		Project Number		B	NWTPH-DX w/ SGC												
Company Name	Arcadis U.S., Inc.	Bill To Company	Arcadis U.S., Inc.	C													
Send Report To	Kyle Haslam	Invoice Attn	Accounts Payable	D													
Address	1100 Olive Way Suite 800	Address	630 Plaza Drive Suite 600	E													
City/State/Zip	Seattle, WA 98101	City/State/Zip	Highlands Ranch CO 80129	F													
Phone	(206) 325-5254	Phone	(303) 471-3699	G													
Fax	(206) 325-8218	Fax		H													
e-Mail Address	kyle.haslam@arcadis.com	e-Mail Address	accountspayable.administration@arcadisus.com	I													
No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	S2-AD - 06142023	6-14-23	1715	Water	-	1041	X										
2	S2-AU - 06142023	6-14-23	1715	Water	-	1	X										
3	S2-BD - 06152023	6-15-23	0905	Water	-	1	X										
4	S2-BU - 06152023	6-15-23	0905	Water	-	1	X										
5	S3-AD - 06152023	6-15-23	1047	Water	-	1	X										
6	S3-AU - 06152023	6-15-23	1058	Water	-	1	X										
7	S3-BD - 06152023	6-15-23	1137	Water	-	1	X										
8	S3-BU - 06152023	6-15-23	1137	Water	-	1	X										
9	S3-CD - 06152023	6-15-23	1234	Water	-	1	X										
10	S3-CU - 06152023	6-15-23	1225	Water	-	1	X										

Sampler(s) Please Print & Sign: ROBERTO P IEMONTES
 Received by: [Signature] Date: 6/16/23
 Received by (Laboratory): [Signature] Date: 6/16/23
 Checked by (Laboratory): [Signature] Date: []
 Required Turnaround Time: (Check Box) 5 Wk Days 10 Wk Days 24 Hour
 Results Due Date: []
 Notes: [Handwritten notes]
 Cooler ID: [] Cooler Temp: []
 OC Package: (Check One Box Below) Level II Std QC TRRP Checklist
 Level III Std QC/Raw Date TRRP Level IV
 Level IV SW846/CLP Other



Cincinnati, OH
+1 513 733 5336
Everett, WA
+1 425 356 2600

Fort Collins, CO
+1 970 490 1511
Holland, MI
+1 616 399 6070

Houston, TX
+1 281 530 5656
Middletown, PA
+1 717 944 5541

Spring City, PA
+1 610 948 4903
Salt Lake City, UT
+1 801 266 7700

South Charleston, WV
+1 304 356 3168
York, PA
+1 717 505 5280

Page 3 of 4
COC ID: 289096
ALS Project Manager: ENZ3060093

Customer Information		Project Information		ALS Work Order #:	
Purchase Order	30159458	Project Name	BNSF Skykomish	Parameter/Method Request for Analysis	
Work Order		Project Number		A	NWTPH-DX
Company Name	Arcadis U.S., Inc.	Bill To Company	Arcadis U.S., Inc.	B	NWTPH-DX w/ SGC
Send Report To	Kyle Haslam	Invoice Attn	Account Payable	C	
Address	1100 Olive Way Suite 800	Address	630 Plaza Drive Suite 600	E	
City/State/Zip	Seattle, WA 98101	City/State/Zip	Highlands Ranch CO 80129	G	
Phone	(206) 325-5254	Phone	(303) 471-3699	H	
Fax	(206) 325-8218	Fax		I	
e-Mail Address	kyle.haslam@arcadis.com	e-Mail Address	accountspayable.administration@arcadisus.com	J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
Z1	S4-AD - 06152023	6-15-23	1326	Water	-	1	X										
Z2	S4-AU - 06152023	6-15-23	1316	Water	-	1	X										
Z3	S4-BD - 06152023	6-15-23	1358	Water	-	1	X										
Z4	S4-BU - 06152023	6-15-23	1355	Water	-	1	X										
Z5	S4-CD - 06152023	6-15-23	1432	Water	-	1	X										
Z6	S4-CU - 06152023	6-15-23	1430	Water	-	1	X										
Z7	2A-W40 - 06142023	6-14-23	1116	Water	-	1	X										
Z8	2A-W41 - 06142023	6-14-23	1222	Water	-	2	X	X									
Z9	2A-W42 - 06142023	6-14-23	1350	Water	-	3	X										
30	1B-W23 - 06152023	6-15-23	1110	Water	-	1	X										

Sampler(s) Please Print & Sign: *ROBERTO PIEMONTE*

Required Turnaround Time: (Check Box) Other 5 Wk Days 2 Wk Days 24 Hour

Results Due Date: _____

Notes: *Received by: [Signature] 6/16/23 8:00*

QC Package: (Check One Box Below) Level II Std QC Level III Std QC Level IV SW846/CLP Other

TRRP Checklist: TRRP Level I TRRP Level IV

Preservative Key: 1-HCl 2-HNO₃ 3-H₂SO₄ 4-NaOH 5-Na₂S₂O₃ 6-NaHSO₄ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental. ** - checked 16 Amber to confirm. CW*
 2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
 3. The Chain of Custody is a legal document. All information must be completed accurately.

Copyright 2011 by ALS Environmental.



Cincinnati, OH
+1 513 733 5336

Fort Collins, CO
+1 970 490 1511

Holland, MI
+1 616 399 6070

Everett, WA
+1 425 356 2600

Houston, TX
+1 281 530 5656

Spring City, PA
+1 610 948 4903

Middletown, PA
+1 717 944 5541

Salt Lake City, UT
+1 801 266 7700

York, PA
+1 717 505 5280

South Charleston, WV
+1 304 356 3168

Chain of Custody Form

Page 4 of 4

COC ID: **289095**

EVZ306093

Customer Information		Project Information		ALS Work Order #:																				
Purchase Order	30159458	Project Name	BNSF Skykomish	Parameter/Method Request for Analysis																				
Work Order		Project Number		A	NWTPH-DX	B	NWTPH-DX w/ SGC	C		D		E		F		G		H		I		J		Hold
Company Name	Arcadis U.S., Inc.	Bill To Company	Arcadis U.S., Inc.																					
Send Report To	Kyle Haslam	Invoice Attn	Accounts Payable																					
Address	1100 Olive Way Suite 800	Address	630 Plaza Drive Suite 600																					
City/State/Zip	Seattle, WA 98101	City/State/Zip	Highlands Ranch CO 80129																					
Phone	(206) 325-5254	Phone	(303) 471-3699																					
Fax	(206) 325-8218	Fax																						
e-Mail Address	kyle.haslam@arcadis.com	e-Mail Address	accountspayable.administration@arcadis.us.com																					
No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold							
31	5-W-43 - 06142023	6-14-2023	1000	Water	---	1	X																	
32	EB - 06152023	6-15-23	1506	Water	---	1	X																	
33	FD-1 - 06142023	6-14-23	---	Water	---	1	X																	
34	FD-2 - 06152023	6-15-23	---	Water	---	1	X																	
35	FD-3 - 06152023	6-15-23	---	Water	---	1	X																	
6																								
7																								
8																								
9																								
10																								

Sampler(s) Please Print & Sign: ROBERTO PIEMONTE

Received by: ROBERTO PIEMONTE Date: 6/16/23 Time: 8:00

Received by (Laboratory): ROBERTO PIEMONTE Date: 6/16/23 Time: 8:00

Checked by (Laboratory): ROBERTO PIEMONTE Date: 6/16/23 Time: 8:00

Required Turnaround Time: (Check Box) Other 5 Wk Days 2 Wk Days 24 Hour

Results Due Date: _____

QC Package: (Check One Box Below) Level II Std QC TRRP Checklist Level III Std QC/Raw Date TRRP Level IV Level IV SW846/CLP Other

Preservative Key: 1-HCl 2-HNO₃ 3-H₂SO₄ 4-NaOH 5-Na₂O₂ 6-NaHSO₄ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

Copyright 2011 by ALS Environmental.

ALS ENVIRONMENTAL

Sample Receiving Checklist

Client: Arcadis U.S., Inc

ALS Job #: EV23060093

Project: BNSF Skykomish

Received Date: 6/16/23 Received Time: 0800 By: CC

Type of shipping container: Cooler Box Other

Shipped via: FedEx Ground UPS Mail Courier Hand Delivered
FedEx Express

	<u>Yes</u>	<u>No</u>	<u>N/A</u>
Were custody seals on outside of shipping container?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
If yes, how many? _____			
Where? _____			
Custody seal date: _____			
Seal name: _____			

Was Chain of Custody properly filled out (ink, signed, dated, etc.)?

Did all bottles have labels?

Did all bottle labels and tags agree with Chain of Custody?

Were samples received within hold time?

Did all bottles arrive in good condition (unbroken, etc.)?

Was sufficient amount of sample sent for the tests indicated?

Was correct preservation added to samples?

If no, Sample Control added preservative to the following:

<u>Sample Number</u>	<u>Reagent</u>	<u>Analyte</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____

Were VOA vials checked for absence of air bubbles?
Bubbles present in sample #: _____

Temperature of cooler upon receipt: 1.3°/2.2°/3.1° Cold Cool Ambient N/A
1.6°/4.3° onic

Explain any discrepancies: _____

Was client contacted? _____ Who was called? _____ By whom? _____ Date: _____

Outcome of call: _____



October 16, 2023

Ms. Michelle Nguyen
Arcadis U.S., Inc.
1420 - 5th Ave , Unit 2400
Seattle, WA 98101

Dear Ms. Nguyen,

On October 2nd, 46 samples were received by our laboratory and assigned our laboratory project number EV23100004. The project was identified as your BNSF Skykomish PN 30159457.01. The sample identification and requested analyses are outlined on the attached chain of custody record.

No abnormalities or nonconformances were observed during the analyses of the project samples.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Rob Greer
Laboratory Director



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
		ALS JOB#:	EV23100004
CLIENT CONTACT:	Michelle Nguyen	ALS SAMPLE#:	EV23100004-01
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	DATE RECEIVED:	10/02/2023
CLIENT SAMPLE ID	GW-2_092823	COLLECTION DATE:	9/28/2023 2:05:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	10/09/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	10/09/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	93.8	10/09/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-02
CLIENT SAMPLE ID	GW-3_092723	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/27/2023 5:55:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	250	100	1	UG/L	10/09/2023	DHM
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX w/ SGA	110	100	1	UG/L	10/16/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	10/09/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX w/ SGA	U	100	1	UG/L	10/16/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	90.4	10/09/2023	DHM
C25 CAS: 629-99-2	NWTPH-DX w/ SGA	101	10/16/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains highly weathered diesel.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-03
CLIENT SAMPLE ID	GW-4_092723	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/27/2023 12:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	130	100	1	UG/L	10/09/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	690	100	1	UG/L	10/09/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	93.8	10/09/2023	DHM

Chromatogram indicates that it is likely that sample contains an unidentified diesel range product and an unidentified oil range product.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-04
CLIENT SAMPLE ID	EW-1_092823	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/28/2023 4:42:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	10/09/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	10/09/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	95.0	10/09/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-05
CLIENT SAMPLE ID	EW-2A_092723	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/27/2023 1:50:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	10/09/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	250	100	1	UG/L	10/09/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	115	10/09/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains an unidentified oil range product.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-06
CLIENT SAMPLE ID	S1-AD_092823	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/28/2023 5:25:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	10/09/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	10/09/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	93.0	10/09/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-07
CLIENT SAMPLE ID	S1-AU_092823	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/28/2023 5:25:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	10/09/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	10/09/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	82.6	10/09/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-08
CLIENT SAMPLE ID	S1-BD_092823	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/28/2023 5:50:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	10/09/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	10/09/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	93.3	10/09/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-09
CLIENT SAMPLE ID	S1-BU_092823	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/28/2023 5:55:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	10/09/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	10/09/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	86.3	10/09/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-10
CLIENT SAMPLE ID	S2-AD_092923	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/29/2023 3:42:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	10/09/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	10/09/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	96.9	10/09/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-11
CLIENT SAMPLE ID	S2-AU_092923	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/29/2023 3:18:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	10/09/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	10/09/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	94.5	10/09/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-12
CLIENT SAMPLE ID	S2-BD_092923	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/29/2023 12:42:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	10/09/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	140	100	1	UG/L	10/09/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	93.7	10/09/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains an unidentified oil range product.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-13
CLIENT SAMPLE ID	S2-BU_092923 MS/MSD	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/29/2023 12:03:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	1000	100	1	UG/L	10/09/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	200	100	1	UG/L	10/09/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	97.6	10/09/2023	DHM

Chromatogram indicates that it is likely that sample contains weathered diesel and an unidentified oil range product.
Oil range product results biased high due to diesel range product overlap.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-14
CLIENT SAMPLE ID	S3-AD_092723	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/27/2023 4:51:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	10/09/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	10/09/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	92.8	10/09/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-15
CLIENT SAMPLE ID	S3-AU_092723	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/27/2023 4:26:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	10/09/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	10/09/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	95.0	10/09/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-16
CLIENT SAMPLE ID	S3-BD_092823	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/28/2023 9:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	10/09/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	10/09/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	91.7	10/09/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-17
CLIENT SAMPLE ID	S3-BU_092823	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/28/2023 10:45:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	10/09/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	10/09/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	97.7	10/09/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-18
CLIENT SAMPLE ID	S3-CD_092723	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/27/2023 3:55:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	10/09/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	10/09/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	100	10/09/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-19
CLIENT SAMPLE ID	S3-CU_092723 MS/MD	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/27/2023 4:25:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	10/09/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	10/09/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	95.1	10/09/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-20
CLIENT SAMPLE ID	S4-AD_092723	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/27/2023 9:28:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	10/09/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	10/09/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	100	10/09/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-21
CLIENT SAMPLE ID	S4-AU_092723	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/27/2023 10:24:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	10/09/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	10/09/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	95.9	10/09/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-22
CLIENT SAMPLE ID	S4-BD_092723	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/27/2023 11:37:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	10/09/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	10/09/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	101	10/09/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-23
CLIENT SAMPLE ID	S4-BU_092723	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/27/2023 1:10:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	10/09/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	10/09/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	97.2	10/09/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-24
CLIENT SAMPLE ID	S4-CD_092723	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/27/2023 9:35:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	10/09/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	10/09/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	105	10/09/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-25
CLIENT SAMPLE ID	S4-CU_092723	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/27/2023 10:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	10/09/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	10/09/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	95.1	10/09/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-26
CLIENT SAMPLE ID	5-W-14_092623	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/26/2023 3:08:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	10/10/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	10/10/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	98.4	10/10/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-27
CLIENT SAMPLE ID	5-W-16_092623	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/26/2023 5:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	10/10/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	10/10/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	100	10/10/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-28
CLIENT SAMPLE ID	5-W-17_092923	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/29/2023 11:10:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	10/10/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	10/10/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	98.0	10/10/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-29
CLIENT SAMPLE ID	5-W-18_092923	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/29/2023 11:55:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	10/10/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	10/10/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	103	10/10/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-30
CLIENT SAMPLE ID	5-W-19_092923	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/29/2023 12:40:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	10/10/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	10/10/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	97.0	10/10/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-31
CLIENT SAMPLE ID	5-W-51_092923	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/29/2023 10:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	530	100	1	UG/L	10/10/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	220	100	1	UG/L	10/10/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	98.6	10/10/2023	DHM

Chromatogram indicates that it is likely that sample contains highly weathered diesel and an unidentified oil range product. Oil range product results biased high due to diesel range product overlap.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-32
CLIENT SAMPLE ID	5-W-55_092823	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/28/2023 3:50:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	10/10/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	10/10/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	97.1	10/10/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-33
CLIENT SAMPLE ID	5-W-56_092823	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/28/2023 3:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	1400	100	1	UG/L	10/10/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	710	100	1	UG/L	10/10/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	81.2	10/10/2023	DHM

Chromatogram indicates that it is likely that sample contains an unidentified diesel range product and an unidentified oil range product.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-34
CLIENT SAMPLE ID	FD-3_092923	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/29/2023
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	590	100	1	UG/L	10/10/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	290	100	1	UG/L	10/10/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	100	10/10/2023	DHM

Chromatogram indicates that it is likely that sample contains highly weathered diesel and an unidentified oil range product. Oil range product results biased high due to diesel range product overlap.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-35
CLIENT SAMPLE ID	2A-W-40_092823	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/28/2023 1:02:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	10/10/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	10/10/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	106	10/10/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-36
CLIENT SAMPLE ID	2A-W-41_092823	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/28/2023 11:05:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	400	100	1	UG/L	10/10/2023	DHM
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX w/ SGA	240	50	1	UG/L	10/16/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	120	100	1	UG/L	10/10/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX w/ SGA	U	100	1	UG/L	10/16/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	104	10/10/2023	DHM
C25 CAS: 629-99-2	NWTPH-DX w/ SGA	132 SUR11	10/16/2023	DHM

SUR11 - Surrogate outside of control limits due to sporadic marginal failure. No corrective action taken.
 U - Analyte analyzed for but not detected at level above reporting limit.
 Chromatogram indicates that it is likely that sample contains highly weathered diesel and an unidentified oil range product.
 Oil range product results biased high due to diesel range product overlap.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-37
CLIENT SAMPLE ID	2A-W-42_092823	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/28/2023 10:01:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	120	100	1	UG/L	10/10/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	10/10/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	103	10/10/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains an unidentified diesel range product.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-38
CLIENT SAMPLE ID	1B-W-23_092723	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/27/2023 5:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	10/10/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	10/10/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	86.5	10/10/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-39
CLIENT SAMPLE ID	1C-W-7_092723	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/27/2023 1:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	120	100	1	UG/L	10/10/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	10/10/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	97.0	10/10/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains an unidentified diesel range product.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-40
CLIENT SAMPLE ID	1C-W-8_092723	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/27/2023 2:45:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	10/10/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	10/10/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	96.7	10/10/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-41
CLIENT SAMPLE ID	5-W-43_092923	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/29/2023 11:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	10/10/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	10/10/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	93.3	10/10/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-42
CLIENT SAMPLE ID	MW-4_092923	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/29/2023 4:03:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	290	100	1	UG/L	10/10/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	100	100	1	UG/L	10/10/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	95.2	10/10/2023	DHM

Chromatogram indicates that it is likely that sample contains an unidentified diesel range product.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-43
CLIENT SAMPLE ID	FD-1_092723	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/27/2023
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	100	100	1	UG/L	10/10/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	220	100	1	UG/L	10/10/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	115	10/10/2023	DHM

Chromatogram indicates that it is likely that sample contains an unidentified diesel range product and an unidentified oil range product.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-44
CLIENT SAMPLE ID	EB-1_092723	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/27/2023 5:10:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	10/10/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	10/10/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	88.2	10/10/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-45
CLIENT SAMPLE ID	FD-2_092923	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/27/2023
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	10/10/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	10/10/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	89.2	10/10/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-46
CLIENT SAMPLE ID	FD-4_092923	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/29/2023
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	10/10/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	10/10/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	93.2	10/10/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS SDG#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	WDOE ACCREDITATION:	C601

LABORATORY BLANK RESULTS

MB-100623W - Batch 201638 - Water by NWTPH-DX

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	UG/L	100	10/09/2023	DHM
TPH-Oil Range	NWTPH-DX	U	UG/L	100	10/09/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

MB-100823W - Batch 201641 - Water by NWTPH-DX

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	UG/L	100	10/10/2023	DHM
TPH-Oil Range	NWTPH-DX	U	UG/L	100	10/10/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

MB2-100623W - Batch 201639 - Water by NWTPH-DX

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	UG/L	50	10/10/2023	DHM
TPH-Oil Range	NWTPH-DX	U	UG/L	100	10/10/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS SDG#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	WDOE ACCREDITATION:	C601

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: 201638 - Water by NWTPH-DX

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
TPH-Diesel Range - BS	NWTPH-DX	95.1			67	125	10/09/2023	DHM
TPH-Diesel Range - BSD	NWTPH-DX	96.3	1		67	125	10/09/2023	DHM

ALS Test Batch ID: 201639 - Water by NWTPH-DX

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
TPH-Diesel Range - BS	NWTPH-DX	92.2			67	125	10/10/2023	DHM
TPH-Diesel Range - BSD	NWTPH-DX	96.0	4		67	125	10/10/2023	DHM

ALS Test Batch ID: 201641 - Water by NWTPH-DX

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
TPH-Diesel Range - BS	NWTPH-DX	99.5			67	125	10/10/2023	DHM
TPH-Diesel Range - BSD	NWTPH-DX	97.7	2		67	125	10/10/2023	DHM

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS SDG#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	WDOE ACCREDITATION:	C601

MATRIX SPIKE RESULTS

ALS Test Batch ID: 201638 - Water
Parent Sample: S2-BU_092923 MS/MSD

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	SPIKE ADDED	PARENT SAMPLE RESULT	CALC RESULT*	LIMITS			ANALYSIS DATE	ANALYSIS BY
								MIN	MAX	RPD		
TPH-Diesel Range - MS	NWTPH-DX	141			493	1000	700 SQ2	67	125		10/09/2023	DHM
TPH-Diesel Range - MSD	NWTPH-DX	158	5	MS14	500	1000	790 MS14	67	125	15.2	10/09/2023	DHM

Parent Sample: S3-CU_092723 MS/MD

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	SPIKE ADDED	PARENT SAMPLE RESULT	CALC RESULT*	LIMITS			ANALYSIS DATE	ANALYSIS BY
								MIN	MAX	RPD		
TPH-Diesel Range - MS	NWTPH-DX	97.0			493	16.0	480	67	125		10/09/2023	DHM
TPH-Diesel Range - MSD	NWTPH-DX	98.5	1		493	16.0	480	67	125	15.2	10/09/2023	DHM

MS14 - MS/MSD recoveries were above the control limits, due to matrix interference. The associated LCS recoveries and MS/MSD RPD were within the control limits.

SQ2 - Spike outside of control limits due to matrix effect.

*Calc Result = (Sample Result - Parent Sample Result)

APPROVED BY



Rob Greer
Laboratory Director



Cincinnati, OH
+1 513 733 5336
Everett, WA
+1 425 356 2600

Fort Collins, CO
+1 970 490 1511
Holland, MI
+1 616 399 6070

Chain of Custody Form

Houston, TX
+1 281 530 5656
Middletown, PA
+1 717 944 5541

Spring City, PA
+1 610 948 4903
Salt Lake City, UT
+1 801 266 7700

South Charleston, WV
+1 304 356 3168
York, PA
+1 717 505 5280

Page 1 of 5

COC ID: **289093**

EV23100004

Customer Information		Project Information		ALS Work Order #:													
Purchase Order	Project Name	BNSF Skykomish PN 30159457.01	A	210_DX_W	Parameter/Method Request for Analysis												
Work Order	Project Number		B														
Company Name	Bill To Company	Arcadis U.S., Inc.	C	210_DXSGA_W													
Send Report To	Invoice Attn	Account's Payable	D														
Address	Address	630 Plaza Drive Suite 600	E														
City/State/Zip	City/State/Zip	Seattle, WA 98101	G														
Phone	Phone	(206) 325-5254	H														
Fax	Fax	(206) .32-5.82	I														
e-Mail Address	e-Mail Address	Michelle.Nguyen@arcadis.com	J														
	e-Mail Address	invoices_us@arcadis.com															
No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	GW1 NOT SAMPLED			Water	1	1	X										
2	GW2 - 092823	9/28/23	14:05	Water	1	1	X										1
3	GW3 - 092723	17:55	9/27/23	Water	1	2	X		X								2
4	GW4 - 092723	9/27/23	12:30	Water	1	1	X										3
5	EW1 - 092823	9/28/23	16:42	Water	1	1	X										4
6	EW2A - 092723	9/27/23	13:50	Water	1	1	X										5
7	S1-AD - 092823	9/28/23	17:25	Water	1	1	X										6
8	S1-AU - 092823	9/28/23	17:25	Water	1	1	X										7
9	S1-BD - 092823	9/28/23	17:50	Water	1	1	X										8
10	S1-BU - 092823	9/28/23	17:55	Water	1	1	X										9

Sampler(s) Please Print & Sign: *Kyle Johnson Nguyen*

Shipment Method: Drop off Other

Required Turnaround Time: (Check Box) 5 Wk Days 2 Wk Days 24 Hour

Date: 10/2/23 Time: 12:20

Received by: *Kyle Johnson*

Date: 10/2/23 Time: 10:23 AM

Received by (Laboratory): *AJ Furum*

Date: _____ Time: _____

Checked by (Laboratory): _____

Notes: _____

QC Package: (Check One Box Below)

Level II Std QC TRRP Checklist

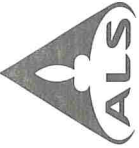
Level III Std QC/Raw Date TRRP Level IV

Level IV SW646/CLP Other

Preservative Key: 1-HCl 2-HNO₃ 3-H₂SO₄ 4-NaOH 5-Na₂S₂O₃ 6-NaHSO₄ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
 2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
 3. The Chain of Custody is a legal document. All information must be completed accurately.

Copyright 2011 by ALS Environmental.



Fort Collins, CO
+1 970 490 1511

Holland, MI
+1 616 399 6070

Cincinnati, OH
+1 513 733 5336

Everett, WA
+1 425 356 2600

Spring City, PA
+1 610 948 4903

Middletown, PA
+1 717 944 5541

South Charleston, WV
+1 304 356 3168

Salt Lake City, UT
+1 801 266 7700

York, PA
+1 717 505 5280

Chain of Custody Form

Page 2 of 3

COC ID: **289092**

ALS Project Manager: EVZ300004

Customer Information		Project Information		ALS Work Order #:													
Purchase Order		Project Name	BNSF Sky/komish PN 30159457.01	Parameter/Method Request for Analysis													
Work Order		Project Number		A	B	C	D	E	F	G	H	I	J	Hold			
Company Name	Arcadis U.S., Inc.	Bill To Company	Arcadis U.S., Inc.	210_DX_W													
Send Report To	Michelle Nguyen	Invoice Attn	Accounts Payable	210_DXSGA_W													
Address	1420 - 5th Ave Unit 2400	Address	630 Plaza Drive Suite 600														
City/State/Zip	Seattle, WA 98101	City/State/Zip	Highlands Ranch CO 80129														
Phone	(206) 325-5254	Phone	(303) 471-3699														
Fax	(206) 32-5.82	Fax															
e-Mail Address	Michelle.Nguyen@arcadis.com	e-Mail Address	invoices_us@arcadis.com														
No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	S2-AD - 042923	9/29/23	1542	Water	1	1	X										-10
2	S2-AU - 092923	9/29/23	1518	Water	1	1	X										-11
3	S2-BD - 092923	9/29/23	1242	Water	1	1	X										-12
4	S2-BU - 092923 ^{KJ} ^{MS/MSD}	9/29/23	1203	Water	1	1	X										-13
5	S3-AD - 092723	9/27/23	16:51	Water	1	1	X										-14
6	S3-AU - 092723	9/27/23	16:26	Water	1	1	X										-15
7	S3-BD - 092823	9/28/23	09:30	Water	1	1	X										-16
8	S3-BU - 092823	9/28/23	1045	Water	1	1	X										-17
9	S3-CD - 092723	9/27/23	1555	Water	1	1	X										-18
10	S3-CU - 092723 MS/MSD	9/27/23	16:25	Water	1	3	X										-19

Shipper(s) Please Print & Sign: Kyle Johnson, Tony Aron

Shipment Method: dropped off

Required Turnaround Time: (Check Box) 5 Wk Days 2 Wk Days 24 Hour

Results Due Date: _____

Relinquished by: Kyle Johnson Date: 10/2/23

Relinquished by: Kyle Johnson Date: _____

Relinquished by: AJ Evans Date: _____

QC Package: (Check One Box Below) Level II Std QC Level III Std QC/Raw Date Level IV SWB46/CLP Other

TRRP Checklist: TRRP Level IV

Preservative Key: 1-HCl 2-HNO₃ 3-H₂SO₄ 4-NaOH 5-Na₂S₂O₃ 6-NaHSO₄ 7-Other 8-4°C 9-5035

Notes: okkbs 12:30



Cincinnati, OH
+1 513 733 5336
Everett, WA
+1 425 356 2600

Fort Collins, CO
+1 970 490 1511
Holland, MI
+1 616 399 6070

Chain of Custody Form

Houston, TX
+1 281 530 5656
Middletown, PA
+1 717 944 5541

Spring City, PA
+1 610 948 4903
Salt Lake City, UT
+1 801 266 7700

South Charleston, WV
+1 304 356 3168
York, PA
+1 717 505 5280

Page 3 of 5

COC ID: **289091**

EV23100004

Customer Information				Project Information				ALS Work Order #:																																								
ALS Project Manager:				Parameter/Method Request for Analysis																																												
Purchase Order	Project Name			Project Number			A 210_DX_W																																									
Work Order	Bill To Company			Invoice Attn			B																																									
Company Name	Address			City/State/Zip			C 210_DXSGA_W																																									
Send Report To	Phone			Fax																																												
Address	e-Mail Address			Matrix			Pres.			# Bottles			A			B			C			D			E			F			G			H			I			J								
City/State/Zip	Time			Date			Time			Date			Time			Date			Time			Date			Time			Date			Time			Date			Time			Date			Time			Date		
Phone	e-Mail Address			Matrix			Pres.			# Bottles			A			B			C			D			E			F			G			H			I			J								
Fax	e-Mail Address			Matrix			Pres.			# Bottles			A			B			C			D			E			F			G			H			I			J								
e-Mail Address	e-Mail Address			Matrix			Pres.			# Bottles			A			B			C			D			E			F			G			H			I			J								
S4-AD -092723	9/27/23			09:28			Water			1			1			X																																
S4-AU -092723	9/27/23			10:24			Water			1			1			X																																
S4-BD -092723	9/27/23			11:37			Water			1			1			X																																
S4-BU -092723	9/27/23			13:16			Water			1			1			X																																
S4-CD -092723	9/27/23			9:35			Water			1			1			X																																
S4-CU -092723	9/27/23			10:30			Water			1			1			X																																
5-W-14 -092623	9/26/23			15:08			Water			1			1			X																																
5-W-16 -092623	9/26/23			17:00			Water			1			1			X																																
5-W-17 -092923	9/29/23			11:10			Water			1			1			X																																
5-W-18 -092923	9/29/23			11:55			Water			1			1			X																																
Sampler(s) Please Print & Sign				Shipment Method				Required Turnaround Time: (Check Box)				Other				Results Due Date:																																
Kyle Johnson <i>Kyle Johnson</i>				drop off				<input checked="" type="checkbox"/> STD 10 Wk Days				<input type="checkbox"/> 5 Wk Days				<input type="checkbox"/> 24 Hour																																
Relinquished by:				Received by:				Notes:				QC Package: (Check One Box Below)																																				
Kyle Johnson				10/2/23 12:20				w/klb 12:30				<input checked="" type="checkbox"/> Level II Std QC																																				
Relinquished by:				Received by (Laboratory):				Cooler ID				Cooler Temp.																																				
Kyle Johnson				ALS Everett								<input type="checkbox"/> Level III Std QC/Raw Date																																				
Logged by (Laboratory):				Checked by (Laboratory):				Cooler ID				Cooler Temp.																																				
				ALS Everett								<input type="checkbox"/> Level IV SWB46/CLP																																				
Preservative Key: 1-HCl 2-HNO ₃ 3-H ₂ SO ₄ 4-NaOH 5-Na ₂ S ₂ O ₃ 6-NaHSO ₄ 7-Other 8-4°C 9-5035												Other																																				

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
 2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
 3. The Chain of Custody is a legal document. All information must be completed accurately.

Copyright 2011 by ALS Environmental.



Cincinnati, OH
+1 513 733 5336
Everett, WA
+1 425 356 2600

Fort Collins, CO
+1 970 490 1511
Holland, MI
+1 616 399 6070

Houston, TX
+1 281 530 5656
Middletown, PA
+1 717 944 5541

Spring City, PA
+1 610 948 4903
Salt Lake City, UT
+1 801 266 7700

South Charleston, WV
+1 304 356 3168
York, PA
+1 717 505 5280

Page 4 of 5
COC ID: 289090

ALS Project Manager:
ALS Work Order #: EV23100004

Project Name: BNSF Skykomish PN 30159457.01
Parameter/Method Request for Analysis: A 210_DX_W

Project Number: B
Company: Arcadis U.S., Inc.
Invoice Attn: Accounts Payable
Address: 630 Plaza Drive Suite 600
City/State/Zip: Highlands Ranch CO 80129
Phone: (303) 471-3699
Fax:
e-Mail Address: invoices_us@arcadis.com

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
30	5-W-19 - 092923	9/27/23	12:40	Water	1	1	X										-30
31	5-W-51 - 092923	9/29/23	10:30	Water	1	1	X										-31
32	5-W-55 - 092823	9/28/23	15:50	Water	1	1	X										-32
33	5-W-56 - 092823	9/28/23	15:30	Water	1	1	X										-33
34	2A-W-9 - 092823	9/28/23	13:02	Water	1	1	X										-34
35	2A-W-40 - 092823	9/28/23	13:02	Water	1	1	X										-35
36	2A-W-41 - 092823	9/28/23	11:05	Water	1	1	X		X								-36
37	2A-W-42 - 092823	9/28/23	10:01	Water	1	1	X										-37
38	1B-W-23 - 092723	9/27/23	17:30	Water	1	1	X										-38
39	4C-W-4 - NOT SAMPLED			Water	1	1	X										

Shipper's Please Print & Sign: Kyle Johnson, *Kyle Johnson*

Relinquished by: Kyle Johnson, *Kyle Johnson*

Relinquished by: Kyle Johnson, *Kyle Johnson*

Logged by (Laboratory):

Shipment Method: drop off

Required Turnaround Time: (Check Box) STD 10 Wk Days 5 Wk Days 24 Hour

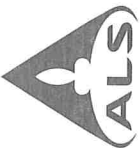
Results Due Date:

QC Package: (Check One Box Below) Level II Std QC Level III Std QC/Raw Date Level IV SWB46/CLP Other

TRRP Checklist: TRRP Level IV

Preservative Key: 1-HCl 2-HNO₃ 3-H₂SO₄ 4-NaOH 5-Na₂O₂ 6-NaHSO₄ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.



Cincinnati, OH
+1 513 733 5336

Everett, WA
+1 425 356 2600

Fort Collins, CO
+1 970 490 1511

Holland, MI
+1 616 399 6070

Houston, TX
+1 281 530 5656

Middletown, PA
+1 717 944 5541

Spring City, PA
+1 610 948 4903

Salt Lake City, UT
+1 801 266 7700

South Charleston, WV
+1 304 356 3168

York, PA
+1 717 505 5280

Page 5 of 5

COC ID: **289089**

EV2310004

Customer Information		Project Information		ALS Project Manager: ALS Work Order #:													
Purchase Order		Project Name	BNSF Skykomish PN 30159457.01	Parameter/Method Request for Analysis													
Work Order		Project Number		A	B	C	D	E	F	G	H	I	J	Hold			
Company Name	Arcadis U.S., Inc.	Bill To Company	Arcadis U.S., Inc.														
Send Report To	Michelle Nguyen	Invoice Attn	Accounts Payable														
Address	1420 - 5th Ave Unit 2400	Address	630 Plaza Drive Suite 600														
City/State/Zip	Seattle, WA 98101	City/State/Zip	Highlands Ranch CO 80129														
Phone	(206) 325-5254	Phone	(303) 471-3699														
Fax	(206) 325-582	Fax															
e-Mail Address	Michelle.Nguyen@arcadis.com	e-Mail Address	invoices_us@arcadis.com														
No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	1C-W7 - 092723	9/27/23	13:00	Water	1	1	X										-39
2	1C-W8 - 092723	9/27/23	14:45	Water	1	1	X										-40
3	5-W43 - 092723	9/29/23	11:30	Water	1	1	X										-41
4	MW4 - 092923	9/29/23	16:03	Water	1	1	X										-42
5	FD-1 - 092723	9/27/23		Water	1	1	X										-43
6	EB-1 - 092723	9/27/23	17:10	Water	1	1	X										-44
7	F-05 - 09262023	9/26/23	15:00	Water	1,2	3	X				X						
8	F-03 - 09262023	9/26/23	14:40	Water	1,2	3	X				X						
9	FD-2 - 092723	9/27/23		Water	1	1	X										-45
10	FD-4 - 092923	9/29/23		Water	1	1	X										-46

Shipments Method: STD 10 Wk Days 5 Wk Days 2 Wk Days 24 Hour

Required Turnaround Time: (Check Box) Other

Results Due Date:

Relinquished by: Kyle Johnson Waddell Date: 10/12/23 Time: 12:20

Relinquished by: ALS Everar Date: 10/12/23 Time: 12:20

Logged by (Laboratory): ALS Everar Date: 10/12/23 Time: 12:20

Preservative Key: 1-HCl 2-HNO₃ 3-H₂SO₄ 4-NaOH 5-Na₂S₂O₃ 6-NaHSO₄ 7-Other 8-4°C 9-5035

QC Package: (Check One Box Below)

Level II Std QC TRRP Checklist

Level III Std GC/RAW Date TRRP Level IV

Level IV SW846/CLP Other

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

Copyright 2011 by ALS Environmental.

ALS ENVIRONMENTAL

Sample Receiving Checklist

Client: Arcadis

ALS Job #: EV23100004

Project: BNSF SKYKOMISH PN 30159457.01

Received Date: 10/2/23 Received Time: 1230 By: ce

Type of shipping container: Cooler Box Other

Shipped via: FedEx Ground UPS Mail Courier Hand Delivered
FedEx Express

Were custody seals on outside of shipping container? Yes No N/A
If yes, how many? _____ Where? _____
Custody seal date: _____ Seal name: _____

Was Chain of Custody properly filled out (ink, signed, dated, etc.)? Yes No N/A

Did all bottles have labels? Yes No N/A

Did all bottle labels and tags agree with Chain of Custody? Yes No N/A

Were samples received within hold time? Yes No N/A

Did all bottles arrive in good condition (unbroken, etc.)? Yes No N/A

Was sufficient amount of sample sent for the tests indicated? Yes No N/A

Was correct preservation added to samples? Yes No N/A

If no, Sample Control added preservative to the following:

Sample Number	Reagent	Analyte
_____	_____	_____
_____	_____	_____
_____	_____	_____

Were VOA vials checked for absence of air bubbles? Yes No N/A
Bubbles present in sample #: _____

Temperature of cooler upon receipt: 1.3°/1.8°/1.2° Cold Cool Ambient N/A
1.8°

Explain any discrepancies: 52-Ap wrong time #10

SW-43# 43 times many times vary. #35 has 2 samples, diff times logged as A & B

Was client contacted? _____ Who was called? _____ By whom? _____ Date: _____

Outcome of call: _____



October 24, 2023

Mr. Kyle Haslam
Arcadis U.S., Inc.
1420 - 5th Ave , Unit 2400
Seattle, WA 98101

Dear Mr. Haslam,

On October 17th, 2 samples were received by our laboratory and assigned our laboratory project number EV23100095. The project was identified as your 30159457. The sample identification and requested analyses are outlined on the attached chain of custody record.

No abnormalities or nonconformances were observed during the analyses of the project samples.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Rob Greer
Laboratory Director



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/24/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23100095
CLIENT PROJECT:	30159457	ALS SAMPLE#:	EV23100095-01
CLIENT SAMPLE ID	GW-1_101723	DATE RECEIVED:	10/17/2023
		COLLECTION DATE:	10/17/2023 12:40:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	150	100	1	UG/L	10/23/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	110	100	1	UG/L	10/23/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	100	10/23/2023	DHM

Chromatogram indicates that it is likely that sample contains an unidentified diesel range product and an unidentified oil range product.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/24/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23100095
CLIENT PROJECT:	30159457	ALS SAMPLE#:	EV23100095-02
CLIENT SAMPLE ID	DUP-1	DATE RECEIVED:	10/17/2023
		COLLECTION DATE:	10/17/2023
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	140	100	1	UG/L	10/23/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	130	100	1	UG/L	10/23/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	101	10/23/2023	DHM

Chromatogram indicates that it is likely that sample contains an unidentified diesel range product and an unidentified oil range product.



CERTIFICATE OF ANALYSIS

CLIENT: Arcadis U.S., Inc. DATE: 10/24/2023
1420 - 5th Ave , Unit 2400 ALS SDG#: EV23100095
Seattle, WA 98101 WDOE ACCREDITATION: C601
CLIENT CONTACT: Kyle Haslam
CLIENT PROJECT: 30159457

LABORATORY BLANK RESULTS

MB-102023W - Batch 202366 - Water by NWTPH-DX

Table with 7 columns: ANALYTE, METHOD, RESULTS, UNITS, REPORTING LIMITS, ANALYSIS DATE, ANALYSIS BY. Rows include TPH-Diesel Range and TPH-Oil Range.

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/24/2023
		ALS SDG#:	EV23100095
CLIENT CONTACT:	Kyle Haslam	WDOE ACCREDITATION:	C601
CLIENT PROJECT:	30159457		

LABORATORY CONTROL SAMPLE RESULTS

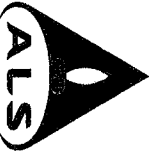
ALS Test Batch ID: 202366 - Water by NWTPH-DX

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
TPH-Diesel Range - BS	NWTPH-DX	82.2			67	125	10/23/2023	DHM
TPH-Diesel Range - BSD	NWTPH-DX	84.0	2		67	125	10/23/2023	DHM

APPROVED BY



Rob Greer
Laboratory Director



ALS Environmental
 8620 Holly Drive, Suite 100
 Everett, WA 98208
 Phone (425) 356-2600
 Fax (425) 356-2626
 http://www.alsglobal.com

Chain Of Custody/ Laboratory Analysis Request

6x4

ALS Job# (Laboratory Use Only)

ANALYSIS REQUESTED

OTHER (Specify)

Date 10-17 Page 1 of 1

EW23100095

PROJECT ID: 30159457
 REPORT TO COMPANY: Acadris
 PROJECT MANAGER: Kyle Kluslan
 ADDRESS: 1420 5th Ave. 98101 Ste. 2400
 PHONE: 206-719-6941 P.O. #
 E-MAIL: Kyle.kluslan@acadris.com
 INVOICE TO COMPANY:
 ATTENTION:
 ADDRESS:

SAMPLE I.D.	DATE	TIME	TYPE	LAB#	NWTPH-HCID	NWTPH-DX	NWTPH-GX	BTEX by EPA 8021	BTEX by EPA 8260	MTBE by EPA 8021	MTBE by EPA 8260	Halogenated Volatiles by EPA 8260	Volatile Organic Compounds by EPA 8260	EDB / EDC by EPA 8260 SIM (water)	EDB / EDC by EPA 8260 (soil)	Semivolatile Organic Compounds by EPA 8270	Polycyclic Aromatic Hydrocarbons (PAH) by EPA 8270 SIM	PCB by EPA 8082	Pesticides by EPA 8081	Metals-MTCA-5	RCRA-8	Pri Pol	TAL	Metals Other (Specify)	TCLP-Metals	VOA	Semi-Vol	Pest	Herbs	NUMBER OF CONTAINERS	RECEIVED IN GOOD CONDITION?	
1. <u>6w-1-101723</u>	<u>10-17</u>	<u>1240</u>	<u>W</u>	<u>1</u>		<u>X</u>																										
2. <u>DVP-1</u>	<u>10-17</u>	<u>—</u>	<u>W</u>	<u>2</u>		<u>X</u>																										
3.																																
4.																																
5.																																
6.																																
7.																																
8.																																
9.																																
10.																																

48C

SPECIAL INSTRUCTIONS

SIGNATURES (Name, Company, Date, Time):

1. Relinquished By: Kyle Johnson, Acadris, 10-17, 1512

Received By: Shawn Robran ALS 10/17/23 1512

2. Relinquished By: _____

Received By: _____

TURNAROUND REQUESTED in Business Days*

OTHER: _____

Specify: Standard

Organic, Metals & Inorganic Analysis **5** **3** **2** **1** **SAVE DAY**

Fuels & Hydrocarbon Analysis **5** **3** **2** **1** **SAVE DAY**

*Turnaround request less than standard may incur Rush Charges

ALS ENVIRONMENTAL

Sample Receiving Checklist

Client: Arcadis

ALS Job #: EV236009S

Project: 30159457

Received Date: 10/17/03 Received Time: 1812 By: Shun

Type of shipping container: Cooler Box Other

Shipped via: FedEx Ground UPS Mail Courier Hand Delivered
FedEx Express

	<u>Yes</u>	<u>No</u>	<u>N/A</u>
Were custody seals on outside of shipping container?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
If yes, how many? _____			
Where? _____			
Custody seal date: _____			
Seal name: _____			

Was Chain of Custody properly filled out (ink, signed, dated, etc.)?

Did all bottles have labels?

Did all bottle labels and tags agree with Chain of Custody?

Were samples received within hold time?

Did all bottles arrive in good condition (unbroken, etc.)?

Was sufficient amount of sample sent for the tests indicated?

Was correct preservation added to samples?

If no, Sample Control added preservative to the following:

<u>Sample Number</u>	<u>Reagent</u>	<u>Analyte</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____

Were VOA vials checked for absence of air bubbles?
Bubbles present in sample #: _____

Temperature of cooler upon receipt: 5.82 in ice Cold Cool Ambient N/A

Explain any discrepancies: _____

Was client contacted? _____ Who was called? _____ By whom? _____ Date: _____

Outcome of call: _____



December 21, 2023

Ms. Michelle Nguyen
Arcadis U.S., Inc.
1420 - 5th Ave , Unit 2400
Seattle, WA 98101

Dear Ms. Nguyen,

On December 8th, 35 samples were received by our laboratory and assigned our laboratory project number EV23120075. The project was identified as your BNSF Skykomish 4Q23 GWM. The sample identification and requested analyses are outlined on the attached chain of custody record.

No abnormalities or nonconformances were observed during the analyses of the project samples.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Rob Greer
Laboratory Director



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	12/21/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23120075
CLIENT PROJECT:	BNSF Skykomish 4Q23 GWM	ALS SAMPLE#:	EV23120075-01
CLIENT SAMPLE ID	GW-1_120523	DATE RECEIVED:	12/08/2023
		COLLECTION DATE:	12/5/2023 3:05:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	12/12/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	120	100	1	UG/L	12/12/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	100	12/12/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains an unidentified oil range product.



CERTIFICATE OF ANALYSIS

CLIENT: Arcadis U.S., Inc. DATE: 12/21/2023
1420 - 5th Ave , Unit 2400 ALS JOB#: EV23120075
Seattle, WA 98101 ALS SAMPLE#: EV23120075-02
CLIENT CONTACT: Michelle Nguyen DATE RECEIVED: 12/08/2023
CLIENT PROJECT: BNSF Skykomish 4Q23 GWM COLLECTION DATE: 12/5/2023 3:48:00 PM
CLIENT SAMPLE ID GW-2_120523 WDOE ACCREDITATION: C601

SAMPLE DATA RESULTS

Table with 8 columns: ANALYTE, METHOD, RESULTS, REPORTING LIMITS, DILUTION FACTOR, UNITS, ANALYSIS DATE, ANALYSIS BY. Rows include TPH-Diesel Range and TPH-Oil Range.

Table with 5 columns: SURROGATE, METHOD, %REC, ANALYSIS DATE, ANALYSIS BY. Row includes C25.

Chromatogram indicates that it is likely that sample contains an unidentified diesel range product and an unidentified oil range product.



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	12/21/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23120075
CLIENT PROJECT:	BNSF Skykomish 4Q23 GWM	ALS SAMPLE#:	EV23120075-03
CLIENT SAMPLE ID	GW-3_120623	DATE RECEIVED:	12/08/2023
		COLLECTION DATE:	12/6/2023 11:56:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	81	50	1	UG/L	12/13/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	12/13/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	107	12/13/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains an unidentified diesel range product.



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	12/21/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23120075
CLIENT PROJECT:	BNSF Skykomish 4Q23 GWM	ALS SAMPLE#:	EV23120075-03
CLIENT SAMPLE ID	GW-3_120623_SG	DATE RECEIVED:	12/08/2023
		COLLECTION DATE:	12/6/2023 11:56:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX w/SGA	U	50	1	UG/L	12/18/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX w/SGA	U	100	1	UG/L	12/18/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX w/SGA	116	12/18/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit..



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	12/21/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23120075
CLIENT PROJECT:	BNSF Skykomish 4Q23 GWM	ALS SAMPLE#:	EV23120075-04
CLIENT SAMPLE ID	EW-1_120623	DATE RECEIVED:	12/08/2023
		COLLECTION DATE:	12/6/2023 9:06:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	100	100	1	UG/L	12/13/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	12/13/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	107	12/13/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains an unidentified diesel range product.



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	12/21/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23120075
CLIENT PROJECT:	BNSF Skykomish 4Q23 GWM	ALS SAMPLE#:	EV23120075-05
CLIENT SAMPLE ID	EW-2A_120623	DATE RECEIVED:	12/08/2023
		COLLECTION DATE:	12/6/2023 10:45:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	12/13/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	12/13/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	106	12/13/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	12/21/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23120075
CLIENT PROJECT:	BNSF Skykomish 4Q23 GWM	ALS SAMPLE#:	EV23120075-06
CLIENT SAMPLE ID	S1-AD_120623	DATE RECEIVED:	12/08/2023
		COLLECTION DATE:	12/6/2023 2:48:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	12/13/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	12/13/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	99.6	12/13/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	12/21/2023
		ALS JOB#:	EV23120075
CLIENT CONTACT:	Michelle Nguyen	ALS SAMPLE#:	EV23120075-07
CLIENT PROJECT:	BNSF Skykomish 4Q23 GWM	DATE RECEIVED:	12/08/2023
CLIENT SAMPLE ID	S1-AU_120623	COLLECTION DATE:	12/6/2023 2:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	12/13/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	12/13/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	99.6	12/13/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	12/21/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23120075
CLIENT PROJECT:	BNSF Skykomish 4Q23 GWM	ALS SAMPLE#:	EV23120075-08
CLIENT SAMPLE ID	S1-BD_120623	DATE RECEIVED:	12/08/2023
		COLLECTION DATE:	12/6/2023 3:21:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	12/12/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	12/12/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	87.4	12/12/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	12/21/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23120075
CLIENT PROJECT:	BNSF Skykomish 4Q23 GWM	ALS SAMPLE#:	EV23120075-09
CLIENT SAMPLE ID	S1-BU_120623	DATE RECEIVED:	12/08/2023
		COLLECTION DATE:	12/6/2023 3:17:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	12/12/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	390	100	1	UG/L	12/12/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	96.3	12/12/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains an unidentified oil range product.



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	12/21/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23120075
CLIENT PROJECT:	BNSF Skykomish 4Q23 GWM	ALS SAMPLE#:	EV23120075-10
CLIENT SAMPLE ID	S2-AD_120623	DATE RECEIVED:	12/08/2023
		COLLECTION DATE:	12/6/2023 3:56:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	12/12/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	12/12/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	96.9	12/12/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	12/21/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23120075
CLIENT PROJECT:	BNSF Skykomish 4Q23 GWM	ALS SAMPLE#:	EV23120075-11
CLIENT SAMPLE ID	S2-AU_120623	DATE RECEIVED:	12/08/2023
		COLLECTION DATE:	12/6/2023 3:57:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	500	100	1	UG/L	12/12/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	140	100	1	UG/L	12/12/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	89.3	12/12/2023	DHM

Chromatogram indicates that it is likely that sample contains an unidentified diesel range product and an unidentified oil range product.



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	12/21/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23120075
CLIENT PROJECT:	BNSF Skykomish 4Q23 GWM	ALS SAMPLE#:	EV23120075-12
CLIENT SAMPLE ID	S2-BD_120723	DATE RECEIVED:	12/08/2023
		COLLECTION DATE:	12/7/2023 8:55:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	12/13/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	12/13/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	83.7	12/13/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	12/21/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23120075
CLIENT PROJECT:	BNSF Skykomish 4Q23 GWM	ALS SAMPLE#:	EV23120075-13
CLIENT SAMPLE ID	S2-BU_120723	DATE RECEIVED:	12/08/2023
		COLLECTION DATE:	12/7/2023 8:52:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	1300	100	1	UG/L	12/13/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	340	100	1	UG/L	12/13/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	93.8	12/13/2023	DHM

Chromatogram indicates that it is likely that sample contains an unidentified diesel range product and an unidentified oil range product.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	12/21/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23120075
CLIENT PROJECT:	BNSF Skykomish 4Q23 GWM	ALS SAMPLE#:	EV23120075-14
CLIENT SAMPLE ID	S3-AD_120723	DATE RECEIVED:	12/08/2023
		COLLECTION DATE:	12/7/2023 9:42:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	12/13/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	270	100	1	UG/L	12/13/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	109	12/13/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains an unidentified oil range product.



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	12/21/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23120075
CLIENT PROJECT:	BNSF Skykomish 4Q23 GWM	ALS SAMPLE#:	EV23120075-15
CLIENT SAMPLE ID	S3-AU_120723	DATE RECEIVED:	12/08/2023
		COLLECTION DATE:	12/7/2023 9:41:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	12/13/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	12/13/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	91.0	12/13/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	12/21/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23120075
CLIENT PROJECT:	BNSF Skykomish 4Q23 GWM	ALS SAMPLE#:	EV23120075-16
CLIENT SAMPLE ID	S3-BD_120723	DATE RECEIVED:	12/08/2023
		COLLECTION DATE:	12/7/2023 10:17:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	12/13/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	12/13/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	93.8	12/13/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	12/21/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23120075
CLIENT PROJECT:	BNSF Skykomish 4Q23 GWM	ALS SAMPLE#:	EV23120075-17
CLIENT SAMPLE ID	S3-BU_120723	DATE RECEIVED:	12/08/2023
		COLLECTION DATE:	12/7/2023 10:14:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	110	100	1	UG/L	12/13/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	12/13/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	89.7	12/13/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains an unidentified diesel range product.



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	12/21/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23120075
CLIENT PROJECT:	BNSF Skykomish 4Q23 GWM	ALS SAMPLE#:	EV23120075-18
CLIENT SAMPLE ID	S3-CD_120723	DATE RECEIVED:	12/08/2023
		COLLECTION DATE:	12/7/2023 10:52:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	12/13/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	300	100	1	UG/L	12/13/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	102	12/13/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains an unidentified oil range product.



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	12/21/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23120075
CLIENT PROJECT:	BNSF Skykomish 4Q23 GWM	ALS SAMPLE#:	EV23120075-19
CLIENT SAMPLE ID	S3-CU_120723	DATE RECEIVED:	12/08/2023
		COLLECTION DATE:	12/7/2023 10:48:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	12/13/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	12/13/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	103	12/13/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	12/21/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23120075
CLIENT PROJECT:	BNSF Skykomish 4Q23 GWM	ALS SAMPLE#:	EV23120075-20
CLIENT SAMPLE ID	S4-AD_120723	DATE RECEIVED:	12/08/2023
		COLLECTION DATE:	12/7/2023 12:05:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	12/13/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	12/13/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	104	12/13/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	12/21/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23120075
CLIENT PROJECT:	BNSF Skykomish 4Q23 GWM	ALS SAMPLE#:	EV23120075-21
CLIENT SAMPLE ID	S4-AU_120723	DATE RECEIVED:	12/08/2023
		COLLECTION DATE:	12/7/2023 11:52:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	260	100	1	UG/L	12/13/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	12/13/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	110	12/13/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains an unidentified diesel range product.



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	12/21/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23120075
CLIENT PROJECT:	BNSF Skykomish 4Q23 GWM	ALS SAMPLE#:	EV23120075-22
CLIENT SAMPLE ID	S4-BD_120723	DATE RECEIVED:	12/08/2023
		COLLECTION DATE:	12/7/2023 12:40:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	12/13/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	12/13/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	95.2	12/13/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	12/21/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23120075
CLIENT PROJECT:	BNSF Skykomish 4Q23 GWM	ALS SAMPLE#:	EV23120075-23
CLIENT SAMPLE ID	S4-BU_120723	DATE RECEIVED:	12/08/2023
		COLLECTION DATE:	12/7/2023 12:23:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	12/13/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	12/13/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	66.4	12/13/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	12/21/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23120075
CLIENT PROJECT:	BNSF Skykomish 4Q23 GWM	ALS SAMPLE#:	EV23120075-24
CLIENT SAMPLE ID	S4-CD_120723	DATE RECEIVED:	12/08/2023
		COLLECTION DATE:	12/7/2023 1:15:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	150	100	1	UG/L	12/13/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	150	100	1	UG/L	12/13/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	98.9	12/13/2023	DHM

Chromatogram indicates that it is likely that sample contains an unidentified diesel range product and an unidentified oil range product.



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	12/21/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23120075
CLIENT PROJECT:	BNSF Skykomish 4Q23 GWM	ALS SAMPLE#:	EV23120075-25
CLIENT SAMPLE ID	S4-CU_120723	DATE RECEIVED:	12/08/2023
		COLLECTION DATE:	12/7/2023 1:01:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	330	100	1	UG/L	12/13/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	180	100	1	UG/L	12/13/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	90.5	12/13/2023	DHM

Chromatogram indicates that it is likely that sample contains an unidentified diesel range product and an unidentified oil range product.



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	12/21/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23120075
CLIENT PROJECT:	BNSF Skykomish 4Q23 GWM	ALS SAMPLE#:	EV23120075-26
CLIENT SAMPLE ID	2A-W-40_120623	DATE RECEIVED:	12/08/2023
		COLLECTION DATE:	12/6/2023 8:57:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	12/13/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	12/13/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	95.1	12/13/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	12/21/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23120075
CLIENT PROJECT:	BNSF Skykomish 4Q23 GWM	ALS SAMPLE#:	EV23120075-27
CLIENT SAMPLE ID	2A-W-41_120623	DATE RECEIVED:	12/08/2023
		COLLECTION DATE:	12/6/2023 2:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	230	50	1	UG/L	12/13/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	270	100	1	UG/L	12/13/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	90.0	12/13/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains an unidentified diesel range product and an unidentified oil range product.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	12/21/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23120075
CLIENT PROJECT:	BNSF Skykomish 4Q23 GWM	ALS SAMPLE#:	EV23120075-27
CLIENT SAMPLE ID	2A-W-41_120623_SG	DATE RECEIVED:	12/08/2023
		COLLECTION DATE:	12/6/2023 2:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX w/SGA	55	50	1	UG/L	12/18/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX w/SGA	U	100	1	UG/L	12/18/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX w/SGA	116	12/18/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains an unidentified diesel range product.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	12/21/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23120075
CLIENT PROJECT:	BNSF Skykomish 4Q23 GWM	ALS SAMPLE#:	EV23120075-28
CLIENT SAMPLE ID	2A-W-42_120623	DATE RECEIVED:	12/08/2023
		COLLECTION DATE:	12/6/2023 10:33:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	170	100	1	UG/L	12/13/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	130	100	1	UG/L	12/13/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	73.4	12/13/2023	DHM

Chromatogram indicates that it is likely that sample contains an unidentified diesel range product and an unidentified oil range product.



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	12/21/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23120075
CLIENT PROJECT:	BNSF Skykomish 4Q23 GWM	ALS SAMPLE#:	EV23120075-29
CLIENT SAMPLE ID	1B-W-23_120623	DATE RECEIVED:	12/08/2023
		COLLECTION DATE:	12/6/2023 12:02:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	12/13/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	12/13/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	97.9	12/13/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	12/21/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23120075
CLIENT PROJECT:	BNSF Skykomish 4Q23 GWM	ALS SAMPLE#:	EV23120075-30
CLIENT SAMPLE ID	5-W-43_120523	DATE RECEIVED:	12/08/2023
		COLLECTION DATE:	12/5/2023 3:29:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	12/13/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	12/13/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	96.8	12/13/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	12/21/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23120075
CLIENT PROJECT:	BNSF Skykomish 4Q23 GWM	ALS SAMPLE#:	EV23120075-31
CLIENT SAMPLE ID	FD-1_120623	DATE RECEIVED:	12/08/2023
		COLLECTION DATE:	12/6/2023
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	12/13/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	12/13/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	85.8	12/13/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	12/21/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23120075
CLIENT PROJECT:	BNSF Skykomish 4Q23 GWM	ALS SAMPLE#:	EV23120075-32
CLIENT SAMPLE ID	FD-2_120623	DATE RECEIVED:	12/08/2023
		COLLECTION DATE:	12/6/2023
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	12/13/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	12/13/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	108	12/13/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	12/21/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23120075
CLIENT PROJECT:	BNSF Skykomish 4Q23 GWM	ALS SAMPLE#:	EV23120075-33
CLIENT SAMPLE ID	FD-3_120723	DATE RECEIVED:	12/08/2023
		COLLECTION DATE:	12/7/2023
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	12/13/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	12/13/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	105	12/13/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains an unidentified diesel range product.



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	12/21/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23120075
CLIENT PROJECT:	BNSF Skykomish 4Q23 GWM	ALS SAMPLE#:	EV23120075-34
CLIENT SAMPLE ID	FD-4_120723	DATE RECEIVED:	12/08/2023
		COLLECTION DATE:	12/7/2023
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	12/13/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	12/13/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	102	12/13/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	12/21/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23120075
CLIENT PROJECT:	BNSF Skykomish 4Q23 GWM	ALS SAMPLE#:	EV23120075-35
CLIENT SAMPLE ID	EB-1_120823	DATE RECEIVED:	12/08/2023
		COLLECTION DATE:	12/8/2023 8:00:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	12/13/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	12/13/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	102	12/13/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT: Arcadis U.S., Inc. DATE: 12/21/2023
1420 - 5th Ave , Unit 2400 ALS SDG#: EV23120075
Seattle, WA 98101 WDOE ACCREDITATION: C601
CLIENT CONTACT: Michelle Nguyen
CLIENT PROJECT: BNSF Skykomish 4Q23 GWM

LABORATORY BLANK RESULTS

MB2-121123W - Batch 204702 - Water by NWTPH-DX

Table with 7 columns: ANALYTE, METHOD, RESULTS, UNITS, REPORTING LIMITS, ANALYSIS DATE, ANALYSIS BY. Rows include TPH-Diesel Range and TPH-Oil Range with results 'U'.

U - Analyte analyzed for but not detected at level above reporting limit.

MB3-121123W - Batch 204704 - Water by NWTPH-DX

Table with 7 columns: ANALYTE, METHOD, RESULTS, UNITS, REPORTING LIMITS, ANALYSIS DATE, ANALYSIS BY. Rows include TPH-Diesel Range and TPH-Oil Range with results 'U'.

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	12/21/2023
CLIENT CONTACT:	Michelle Nguyen	ALS SDG#:	EV23120075
CLIENT PROJECT:	BNSF Skykomish 4Q23 GWM	WDOE ACCREDITATION:	C601

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: 204702 - Water by NWTPH-DX

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
TPH-Diesel Range - BS	NWTPH-DX	93.9			67	125	12/12/2023	DHM
TPH-Diesel Range - BSD	NWTPH-DX	100	6		67	125	12/12/2023	DHM

ALS Test Batch ID: 204704 - Water by NWTPH-DX

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
TPH-Diesel Range - BS	NWTPH-DX	105			67	125	12/13/2023	DHM
TPH-Diesel Range - BSD	NWTPH-DX	98.2	7		67	125	12/13/2023	DHM

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	12/21/2023
CLIENT CONTACT:	Michelle Nguyen	ALS SDG#:	EV23120075
CLIENT PROJECT:	BNSF Skykomish 4Q23 GWM	WDOE ACCREDITATION:	C601

MATRIX SPIKE RESULTS

ALS Test Batch ID: 204702 - Water
Parent Sample: S1-AU_120623

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	SPIKE ADDED	PARENT SAMPLE RESULT	CALC RESULT*	LIMITS			ANALYSIS DATE	ANALYSIS BY
								MIN	MAX	RPD		
TPH-Diesel Range - MS	NWTPH-DX	99.1			500	34.0	500	67	125		12/13/2023	DHM
TPH-Diesel Range - MSD	NWTPH-DX	97.5	2		500	34.0	490	67	125	15.2	12/13/2023	DHM

Parent Sample: S3-CD_120723

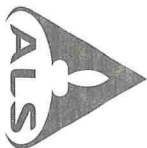
SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	SPIKE ADDED	PARENT SAMPLE RESULT	CALC RESULT*	LIMITS			ANALYSIS DATE	ANALYSIS BY
								MIN	MAX	RPD		
TPH-Diesel Range - MS	NWTPH-DX	85.1			500	48.0	420	67	125		12/13/2023	DHM
TPH-Diesel Range - MSD	NWTPH-DX	103	17	SR1	500	48.0	510 SR1	67	125	15.2	12/13/2023	DHM

SR1 - RPD outside of control limits.
*Calc Result = (Sample Result - Parent Sample Result)

APPROVED BY



Rob Greer
Laboratory Director



Cincinnati, OH
+1 513 733 5336
Everett, WA
+1 425 356 2600

Fort Collins, CO
+1 970 490 1511
Holland, MI
+1 616 399 6070

Chain of Custody Form

Houston, TX
+1 281 530 5656
Middletown, PA
+1 717 944 5541

Spring City, PA
+1 610 948 4903
Salt Lake City, UT
+1 801 266 7700

South Charleston, WV
+1 304 356 3168
York, PA
+1 717 505 5280

Page 1 of 4

COC ID: **289088**

EN231200715

Customer Information

Purchase Order		Project Name	BNSF Skykomish 4Q23 GWM
Work Order		Project Number	Skykomish
Company Name	Arcadis U.S., Inc.	Bill To Company	Arcadis U.S., Inc.
Send Report To	Michelle Nguyen + EMILY TIKM(VND)	Invoice Attn	Accounts Payable
Address	1420 - 5th Ave Unit 2400	Address	630 Plaza Drive Suite 600
City/State/Zip	Seattle, WA 98101	City/State/Zip	Highlands Ranch CO 80129
Phone	(206) 325-5254	Phone	(303) 471-3699
Fax	(206) 325-8218	Fax	
e-Mail Address	Michelle.Nguyen@arcadis.com EMILY.TIKM@arcadis.com	e-Mail Address	invoices_us@arcadis.com

Project Information

ALS Project Manager:	
Parameter/Method Request for Analysis	

ALS Work Order #:

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	GW-1 -120523	12-05-23	1505	Water	1	1	X										
2	GW-2 -120523	12-05-23	1548	Water	1	1	X										
3	GW-3 -120623	12-06-23	1156	Water	+	2	X			X							
4	GW-4			Water	1		X										
5	EW-1 -120623	12-06-23	0906	Water	1	1	X										
6	EW-2A -120623	12-06-23	1045	Water	+	1	X										
7	S1-AD -120623	12-06-23	1448	Water	+	1	X										
8	S1-AU -120623	12-06-23	1400	Water	+	3	X										
9	S1-BD -120623	12-06-23	1521	Water	+	1	X										
10	S1-BU -120623	12-06-23	1517	Water	+	1	X										

Sampler(s) Please Print & Sign

Shipment Method

Required Turnaround Time: (Check Box)

Results Due Date:

Relinquished by: *Michelle Nguyen* Date: 12/6/23 Time: 12:30

Received by: *Michelle Nguyen* Date: 12/6/23 Time: 12:30

QC Package: (Check One Box Below)

Relinquished by: *Michelle Nguyen* Date: 12/6/23 Time: 12:30

Received by: *Michelle Nguyen* Date: 12/6/23 Time: 12:30

Level II Std QC Level III Std QC/Raw Date Level IV SW846/CLP Other

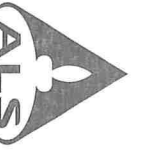
Logged by (Laboratory):

Checked by (Laboratory):

TRRP Checklist TRRP Level IV

Preservative Key: 1-HCl 2-HNO₃ 3-H₂SO₄ 4-NaOH 5-Na₂S₂O₃ 6-NaHSO₄ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.



Cincinnati, OH
+1 513 733 5336
Everett, WA
+1 425 356 2600

Fort Collins, CO
+1 970 490 1511
Holland, MI
+1 616 399 6070

Chain of Custody Form

Houston, TX
+1 281 530 5656
Middletown, PA
+1 717 944 5541

Spring City, PA
+1 610 948 4903
Salt Lake City, UT
+1 801 266 7700

South Charleston, WV
+1 304 356 3168
York, PA
+1 717 505 5280

Page 2 of 4

COC ID: **289087**

FV23120075

Customer Information

Purchase Order		Project Name	BNSF Skykomish 4Q23 GMMI	ALS Project Manager:		Parameter/Method Request for Analysis	
Work Order		Project Number	Skykomish				
Company Name	Arcadis U.S., Inc.	Bill To Company	Arcadis U.S., Inc.				
Send Report To	Michelle Nguyen	Invoice Attn	Accounts Payable				
Address	1420 - 5th Ave Unit 2400	Address	630 Plaza Drive Suite 600				
City/State/Zip	Seattle, WA 98101	City/State/Zip	Highlands Ranch CO 80129				
Phone	(206) 325-5254	Phone	(303) 471-3699				
Fax	(206) 325-8218	Fax					
e-Mail Address	Michelle.Nguyen@arcadis.com	e-Mail Address	invoices_us@arcadis.com				

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
10	S2-AD -120623	12-06-23	1556	Water	+	1	X										
11	S2-AU -120623	12-06-23	1557	Water	+	1	X										
12	S2-BD -120723	12-07-23	0855	Water	+	1	X										
13	S2-BU -120723	12-07-23	0852	Water	+	1	X										
14	S3-AD -120723	12-07-23	0942	Water	+	1	X										
15	S3-AU -120723	12-07-23	0941	Water	+	1	X										
16	S3-BD -120723	12-07-23	1017	Water	+	1	X										
17	S3-BU -120723	12-07-23	1014	Water	+	1	X										
18	S3-CD -120723	12-07-23	1052	Water	+	3	X										
19	S3-CU -120723	12-07-23	1048	Water	+	1	X										

Sampler(s) Please Print & Sign

Shipment Method

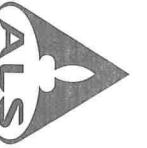
Required Turnaround Time: (Check Box)
 STD 10 Wk Days
 5 Wk Days
 Other _____
 24 Hour

Results Due Date: _____

Relinquished by:	Date:	Time:	Received by:	Date:	Time:	QC Package: (Check One Box Below)
MW	12/19/23	12:30	MSF	12/19/23	12:30	<input checked="" type="checkbox"/> Level II Std QC <input type="checkbox"/> Level III Std QC/Raw Date <input type="checkbox"/> Level IV SW848CLP <input type="checkbox"/> TRRP Checklist <input type="checkbox"/> TRRP Level IV <input type="checkbox"/> Other _____
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):			

Preservative Key:	1-HCl	2-HNO ₃	3-H ₂ SO ₄	4-NaOH	5-Na ₂ S ₂ O ₃	6-NaHSO ₄	7-Other	8-4°C	9-5035
-------------------	-------	--------------------	----------------------------------	--------	---	----------------------	---------	-------	--------

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
 2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
 3. The Chain of Custody is a legal document. All information must be completed accurately.



Cincinnati, OH
+1 513 733 5336
Everett, WA
+1 425 356 2600

Fort Collins, CO
+1 970 490 1511
Holland, MI
+1 616 399 6070

Houston, TX
+1 281 530 5656
Middletown, PA
+1 717 944 5541

Spring City, PA
+1 610 948 4903
Salt Lake City, UT
+1 801 266 7700

South Charleston, WV
+1 304 356 3168
York, PA
+1 717 505 5280

Chain of Custody Form

Page 3 of 4

COC ID: **289086**

EV23120075

ALS Project Manager:

ALS Work Order #:

Customer Information				Project Information				Parameter/Method Request for Analysis											
Purchase Order		Project Name	BNSF Skykomish 4Q23 GWM	Project Number	Skykomish	A	210_DX_W												
Work Order		Bill To Company	Arcadis U.S., Inc.	Invoice Attn	Accounts Payable	B													
Company Name	Arcadis U.S., Inc.	Address	630 Plaza Drive Suite 600	City/State/Zip	Highlands Ranch CO 80129	C	210_DXSGA_W												
Send Report To	Michelle Nguyen	Address	1420 - 5th Ave Unit 2400	City/State/Zip	Seattle, WA 98101	D													
Address		Phone	(206) 325-5254	Phone	(303) 471-3699	E													
City/State/Zip		Fax	(206) 325-8218	Fax		F													
e-Mail Address	Michelle.Nguyen@arcadis.com	e-Mail Address	invoices_us@arcadis.com			G													
No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold		
20	S4AD -120723	12-07-23	12:05	Water	+	1	X												
21	S4AU -120723	12-07-23	11:52	Water	+	1	X												
22	S4BD -120723	12-07-23	12:40	Water	+	1	X												
23	S4BU -120723	12-07-23	12:23	Water	+	1	X												
24	S4CD -120723	12-07-23	13:15	Water	+	1	X												
25	S4CU -120723	12-07-23	13:01	Water	+	1	X												
26	2A-W40 -120623	12-06-23	08:57	Water	+	1	X												
27	2A-W41 -120623	12-06-23	14:30	Water	+	2	X			X									
28	2A-W42 -120623	12-06-23	10:33	Water	+	1	X												
29	1B-W23 -120623	12-06-23	12:02	Water	+	1	X												

Reinquished by: Mary Myron Date: 12/1/23 Time: 12:30 Received by: Michelle ASE Date: 12/18/23 Time: 12:30

Reinquished by: _____ Date: _____ Time: _____ Received by: _____ Date: _____ Time: _____

Logged by (Laboratory): _____ Date: _____ Time: _____ Checked by (Laboratory): _____

Preservative Key: 1-HCl 2-HNO₃ 3-H₂SO₄ 4-NAOH 5-Na₂S₂O₃ 6-NAHSO₄ 7-Other 8-4°C 9-5035

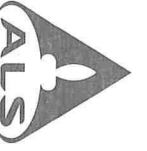
Shipment Method: STD 10 Wk. Days 5 Wk. Days 2 Wk. Days 24 Hour

Required Turnaround Time: (Check Box) Other _____

QC Package: (Check One Box Below) Level II Std QC Level III Std QC/Raw Date Level IV SW648/CLP Other _____

Results Due Date: _____

TRRP Checklist TRRP Level IV



Cincinnati, OH
+1 513 733 5336
Everett, WA
+1 425 356 2600

Fort Collins, CO
+1 970 490 1511
Holland, MI
+1 616 399 6070

Chain of Custody Form

Houston, TX
+1 281 530 5656
Middletown, PA
+1 717 944 5541

Spring City, PA
+1 610 948 4903
Salt Lake City, UT
+1 801 266 7700

South Charleston, WV
+1 304 356 3168
York, PA
+1 717 505 5280

Page 4 of 4

COC ID: **289085**

EV23120075

Customer Information		Project Information		Parameter/Method Request for Analysis													
Purchase Order		Project Name	BNSF Skykomish 4Q23 GWM	A 210_DX_W													
Work Order		Project Number	Skykomish	B													
Company Name	Arcadis U.S., Inc.	Bill To Company	Arcadis U.S., Inc.	C 210_DXSGA_W													
Send Report To	Mitchelle Nguyen	Invoice Attn	Accounts Payable	D													
Address	1420 - 5th Ave	Address	630 Plaza Drive	E													
	Unit 2400		Suite 600	F													
City/State/Zip	Seattle, WA 98101	City/State/Zip	Highlands Ranch CO 80129	G													
Phone	(206) 325-5254	Phone	(303) 471-3699	H													
Fax	(206) 325-8218	Fax		I													
e-Mail Address	Mitchelle.Nguyen@arcadis.com	e-Mail Address	invoices_us@arcadis.com	J													
No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
*30	5-W-43 - 120523	12-05-23	15:29	Water	1	1	X										
31	FD-1 - 120623	12-06-23		Water	1	1	X										
32	FD-2 - 120623	12-06-23		Water	1	1	X										
33	FD-3 - 120723	12-07-23		Water	1	1	X										
34	FD-4 - 120723	12-07-23		Water	1	1	X										
35	EB-1 - 120823	12-08-23	0800	Water	1	1	X										

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
 2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
 3. The Chain of Custody is a legal document. All information must be completed accurately.

ALS ENVIRONMENT

Sample Receiving Checklist

EV23120075

Client: Arcadis ALS Job#: _____

Project: BNSF Skykanish 4Q23 GWM

Login Date: 12/8/23 Login Time: 1230 Login By: CE

Type of Shipping Container: Cooler Box _____ Other _____

Shipped via: FedEx Ground _____ UPS _____ Courier _____ Hand Delivered ALS Courier _____
FedEx Express _____

	Yes	No	N/A
Were custody seals on outside of shipping container? If yes, how many? _____ Where? _____ Custody seal date: _____ Seal name: _____	_____	_____	<input checked="" type="checkbox"/>
Was Chain of Custody properly filled out (ink, signed, dated, etc.)?	<input checked="" type="checkbox"/>	_____	_____
Did all bottles have labels?	<input checked="" type="checkbox"/>	_____	_____
Did all bottle labels and tags agree with Chain of Custody?	_____	<input checked="" type="checkbox"/>	_____
Were samples received within hold time?	<input checked="" type="checkbox"/>	_____	_____
Did all bottles arrive in good condition (unbroken, etc.)?	<input checked="" type="checkbox"/>	_____	_____
Was sufficient amount of sample sent for the tests indicated?	<input checked="" type="checkbox"/>	_____	_____
Was correct preservation added to samples?	<input checked="" type="checkbox"/>	_____	_____
Subcontract test containers added to Subcontract Bin?	_____	_____	<input checked="" type="checkbox"/>
Wetchem test containers marked with required Tests?	<input checked="" type="checkbox"/>	_____	_____
Short hold time test containers delivered to analysts?	_____	_____	<input checked="" type="checkbox"/>
Were VOA vials checked for absence of air bubbles? Bubbles present in sample #: _____	_____	_____	<input checked="" type="checkbox"/>

5035A kits received?
Low Kits: _____ # High Kits: _____

5035A kits returned?
Low Kits: _____ # High Kits: _____

Temperature of cooler upon receipt: 1.1°C / 5.1°C / 3.2°C On ice?

Explain any discrepancies: 4.4°C
Received two FD1, one on 120623 and 120723. Labelled the 120723 as the missing FD3 sample.

Was client contacted? _____ Who was called? _____ By whom? _____ Date: _____

Outcome of call:

Appendix B

Data Validation Reports

BNSF Skykomish

DATA REVIEW

Skykomish, Washington

Total Petroleum Hydrocarbon (TPH) Analyses

SDG #: EV23040003

Analyses Performed By:
ALS Environmental
Everett, Washington

Report #: 49616R
Project: 30159458.02

1 Summary

This data quality assessment summarizes the review of Sample Delivery Group (SDG) # EV23040003 for samples collected in association with the BNSF Skykomish, Washington. The review was conducted as a Tier II evaluation and included review of data package completeness. Only analytical data as reported by the laboratory 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 records. Analyses were performed on the following samples:

Sample ID	Lab ID	Matrix	Sample Collection Date	Parent Sample	Analysis
					TPH
1C-W-8	EV23040003-01	Water	03/28/2023		X
5-W-17	EV23040003-02	Water	03/28/2023		X
5-W-16	EV23040003-03	Water	03/28/2023		X
5-W-55	EV23040003-04	Water	03/28/2023		X
1C-W-4	EV23040003-05	Water	03/28/2023		X
5-W-56	EV23040003-06	Water	03/28/2023		X
5-W-14	EV23040003-07	Water	03/28/2023		X
5-W-19	EV23040003-08	Water	03/28/2023		X
5-W-18	EV23040003-09	Water	03/28/2023		X
DUP-1	EV23040003-10	Water	03/28/2023	5-W-14	X
EW-2A	EV23040003-11	Water	03/29/2023		X
MW-4	EV23040003-12	Water	03/29/2023		X
EW-1	EV23040003-13	Water	03/29/2023		X
5-W-43	EV23040003-14	Water	03/29/2023		X
2-A-W-40	EV23040003-15	Water	03/29/2023		X
GW-1	EV23040003-16	Water	03/29/2023		X
GW-3	EV23040003-17	Water	03/29/2023		X
GW-2	EV23040003-18	Water	03/29/2023		X
5W-51	EV23040003-19	Water	03/29/2023		X
1B-W-23	EV23040003-20	Water	03/29/2023		X
2A-W-9	EV23040003-21	Water	03/29/2023		X
1C-W-7	EV23040003-22	Water	03/29/2023		X
2A-W-41	EV23040003-23	Water	03/29/2023		X
GW-4	EV23040003-24	Water	03/30/2023		X
S3-CD	EV23040003-25	Water	03/30/2023		X
S4-CD	EV23040003-26	Water	03/30/2023		X
S4-AD	EV23040003-27	Water	03/30/2023		X
S4-BD	EV23040003-28	Water	03/30/2023		X

Sample ID	Lab ID	Matrix	Sample Collection Date	Parent Sample	Analysis
					TPH
S3-AD	EV23040003-29	Water	03/30/2023		X
S1-BU	EV23040003-30	Water	03/30/2023		X
S4-AU	EV23040003-31	Water	03/30/2023		X
S1-AU	EV23040003-32	Water	03/30/2023		X
S3-BD	EV23040003-33	Water	03/30/2023		X
S4-CU	EV23040003-34	Water	03/30/2023		X
S3-CU	EV23040003-35	Water	03/30/2023		X
S4-BU	EV23040003-36	Water	03/30/2023		X
DUP-2	EV23040003-37	Water	03/29/2023	2-A-W-40	X
DUP-3	EV23040003-38	Water	03/29/2023	EW-2A	X
S1-BD	EV23040003-39	Water	03/30/2023		X
S2-BU	EV23040003-40	Water	03/30/2023		X
S2-BD	EV23040003-41	Water	03/30/2023		X
S3-AU	EV23040003-42	Water	03/30/2023		X
S1-AD	EV23040003-43	Water	03/30/2023		X
S3-BU	EV23040003-44	Water	03/30/2023		X
S2-AD	EV23040003-45	Water	03/30/2023		X
2A-W-42	EV23040003-46	Water	03/30/2023		X
S2-AU	EV23040003-47	Water	03/30/2023		X
DUP-4	EV23040003-48	Water	03/30/2023	S3 AU	X
EQUIPMENT BLANK	EV23040003-49	Water	03/30/2023		X

2 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 Quality Assurance (QA) or sample problems provided		X		X	
12. Data Package Completeness and Compliance		X		X	

3 Organic Analysis Introduction

Analyses were performed according to United States Environmental Protection Agency (USEPA) Method NWTPH-DX. Data were reviewed in accordance with USEPA CLP National Functional Guidelines for Organic Superfund Methods Data Review, document number 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 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:

- J The compound was positively identified; however, the associated numerical value is an estimated concentration only.
- J+ The result is an estimated quantity, but the result may be biased high.
- J- The result is an estimated quantity, but the result may be biased low.
- 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.
- NJ 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.
- U The compound was analyzed for but not detected. The associated value is the compound quantitation limit.
- R The sample results are rejected as unusable. The compound may or may not be present in the sample.

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.

4 Total Petroleum Hydrocarbons (TPH) Analyses

4.1 Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
NWTPH-DX	Water	14 days from collection to extraction and 40 days from extraction to analysis (preserved) 7 days from collection to extraction and 40 days from extraction to analysis (Unpreserved)	Cool to <6 °C

The analyses that exceeded the holding are presented in the following table.

Sample IDs	Holding Time	Criteria
1C-W-8	6.4°C	Cool to <6 °C
5-W-17		
5-W-16		
5-W-55		
1C-W-4		
5-W-56		
5-W-14		
5-W-19		
5-W-18		
DUP-1		
EW-2A		
MW-4		
EW-1		
5-W-43		
2-A-W-40		
GW-1		
GW-3		
GW-2		
5W-51		
1B-W-23		
2A-W-9		
1C-W-7		
2A-W-41		
GW-4		
S3-CD		
S4-CD		

Sample IDs	Holding Time	Criteria
S4-AD		
S4-BD		
S3-AD		
S1-BU		
S4-AU		
S1-AU		
S3-BD		
S4-CU		
S3-CU		
S4-BU		
DUP-2		
DUP-3		
S1-BD		
S2-BU		
S2-BD		
S3-AU		
S1-AD		
S3-BU		
S2-AD		
2A-W-42		
S2-AU		
DUP-4		
EQUIPMENT BLANK		

Sample results associated with sample locations analyzed by analytical method NWTPH-DX were qualified, as specified in the table below. All other holding times were met.

Criteria	Qualification	
	Detected Analytes	Non-detect Analytes
Analysis completed past holding time	J	UJ

4.2 Blank Contamination

Quality assurance (QA) blanks (i.e. laboratory method blanks and equipment 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 also measure contamination of samples during field operations.

Target compounds were not detected above the RL in the associated blanks; therefore, detected sample results are not associated with blank contamination.

4.3 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 samples exhibited surrogate recoveries within the control limits with the exceptions noted below.

Sample IDs	Surrogate	Recovery
EW-2A GW-1	C25	> UL

Note:

UL Upper control 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
	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.

4.4 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 samples 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 a sample S4-AU. MS/MSD analysis exhibited recoveries and RPDs within the control limits.

4.5 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. The RPD between the LCS and LCSD results must be within the laboratory-established acceptance limits.

All compounds associated with the LCS/LCSD analyses exhibited recoveries and RPDs within the control limits.

4.6 Field Duplicate Sample Analysis

The field duplicate sample analysis is used to assess the precision of the field sampling procedures and analytical method. The control limit of 30% for water matrices and 50% for soil matrices is applied to the RPD between the parent sample and the field duplicate sample results. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the reporting limit (RL), a control limit of two times the RL for water matrices or three times the RL for soil matrices is applied to the difference between the results.

Results for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compound	Sample Result (UG/L)	Duplicate Result (UG/L)	RPD
5-W-14 / DUP-1	All compounds	U	U	AC
2-A-W-40 / DUP-2	TPH-Oil Range	280	330	AC
EW-2A / DUP-3	All compounds	U	U	AC
S3-AU / DUP-4	TPH-Diesel Range	160	170	AC

Note:

AC Acceptable

The calculated RPDs between the parent sample and field duplicate were acceptable.

4.7 Compound Identification

The retention times of all quantitated peaks must fall within the calculated retention time windows.

All identified compounds met the specified criteria.

4.8 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.

4.9 Data Validation Checklist for Total Petroleum Hydrocarbon (TPH)

TPH: NWTPH-DX	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Gas Chromatography/Flame- and Photo- Ionization Detectors (GC/FID/PID)					
Tier II Validation					
Holding Times/Preservation		X	X		
Reporting Limits (Units)		X		X	
Blanks					
A. Method Blanks		X		X	
B. Trip Blanks	X				X
C. Equipment Blanks		X		X	
Surrogates Accuracy (%R)		X	X		
Matrix Spike (MS) %R		X		X	
Matrix Spike Duplicate (MSD) %R		X		X	
MS/MSD Precision (RPD)		X		X	
Laboratory Control Sample (LCS) %R		X		X	
Laboratory Control Sample Duplicate (LCSD) %R		X		X	
LCS/LCSD RPD		X		X	
Laboratory Duplicate Sample RPD	X				X
Field Duplicate Sample RPD		X		X	
Dilution Factor		X		X	
Moisture Content	X				X

Notes:

%R - percent recovery

RPD - relative percent difference

Validation Performed By: Hareesha Naik

Signature: *Hareesha Naik*

Date: May 09, 2023

Peer Review: Jennifer Singer

Date: May 9, 2023

EV23040003

Company Name/Address: Arcadis -Chevron- WA		Billing Information: Attn: Accounts Payable 630 Plaza Dr., Ste. 600 Highlands Ranch, CO 80129		Pres Chk
1100 Olive Way Suite 800 Seattle, WA 98101		Report to: James O'Connell/Sydney Clark		Email To: Sydney.Clark@arcadis.com;Amanda.bowring@a
Project Description: 200410	City/State Collected:	Please Circle: PT MT CT ET		

Chain of Custody Page 2 of 6

Pace
PEOPLE ADVANCING SCIENCE

MT JULIET, TN

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>

Phone: 206-325-5254	Client Project # 30063829.25.21	Lab Project # CHEVARCWA-200410					
Collected by (print):	Site/Facility ID # 15510 AURORA AVEN	P.O. #					
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 #					
Immediately Packed on Ice N ___ Y ___	Date Results Needed	No. of Cntrs					
Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	Analysis / Container / Preservative	

SDG # **Ev23040003**

Table #

Acctnum: **CHEVARCWA**

Template: **T220745**

Prelogin: **P967072**

PM: **110 - Brian Ford**


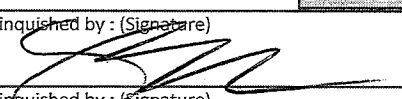
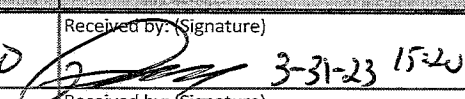
PB:

Shipped Via:

Remarks | Sample # (lab only)

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	Analysis / Container / Preservative		
EW-2A	G	SS GW		3-29-23	1702	1	BTEXM, EDB, EDC, 8260D 40mlAMB/MeOH10ml/Syr	11
MW-4		SS			1015	1	NWTPHDX no silica 8ozClr-NoPres	12
EW-1		SS			1220	1	NWTPHGX 40mlAMB/MeOH10ml/Syr	13
E-W-43		SS			1250	1	Total Lead 6010 8ozClr-NoPres	14
2-A-W-40		SS			1445	1	NWTPHDX W/SGC	15
GW-1		SS			1210	1		16
GW-3		SS			1700	2		17
GW-2		SS			1345	1		18
5W-51		SS			1300	1		19
1B-W-23	X	SS*		X	1555	1		20

* Matrix: SS - Soil AIR - Air F - Filter GW - Groundwater B - Bioassay WW - Wastewater DW - Drinking Water OT - Other	Remarks: STD IM	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 type="checkbox"/> Y <input type="checkbox"/> N Bottles arrive intact: <input type="checkbox"/> Y <input type="checkbox"/> N Correct bottles used: <input type="checkbox"/> Y <input type="checkbox"/> N Sufficient volume sent: <input type="checkbox"/> Y <input type="checkbox"/> N If Applicable: VOA Zero Headspace: <input type="checkbox"/> Y <input type="checkbox"/> N Preservation Correct/Checked: <input type="checkbox"/> Y <input type="checkbox"/> N RAD Screen <0.5 mR/hr: <input type="checkbox"/> Y <input type="checkbox"/> N
Relinquished by: (Signature)	Date: 3-31-23	Time: 1520	Received by: (Signature)
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)

Company Name/Address: Arcadis - Chevron - WA			Billing Information: Attn: Accounts Payable 630 Plaza Dr., Ste. 600 Highlands Ranch, CO 80129			Analysis / Container / Preservative			Chain of Custody Page 3 of 6					
1100 Olive Way Suite 800 Seattle, WA 98101			Email To: Sydney.Clark@arcadis.com, Amanda.Bowring@a			Pres Chk			 PEOPLE ADVANCING SCIENCE MT JULIET, TN 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: James O'Connell/Sydney Clark			Project Description: 200410			City/State Collected:						Please Circle: PT MT CT ET		
Phone: 206-325-5254			Client Project # 30063829-25.21 <i>BUSE SKYCOMB</i>			Lab Project # CHEVARCWA-200410			BTEXM, EDB, EDC 8260D 40mlamb/MeOH10ml/Syr NWTPHDX no silica 8ozClr-NoPres NWTPHGX 40mlamb/MeOH10ml/Syr Total Lead 6010 8ozClr-NoPres NWTPHDX W 56C					
Collected by (print):			Site/Facility ID # 15510 AURORA AVE N			P.O. #						SDG #		
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 #						Table #		
Immediately Packed on Ice N ___ Y ___			Date Results Needed			No. of Cntrs						Acctnum: CHEVARCWA Template: T220745 Prelogin: P967072 PM: 110 - Brian Ford PB:		
Sample ID			Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Shipped Via:					
2A-W-9			G	GW ^{SS}		3-29-23	1155	1	Remarks					
1C-W-7				SS			1410	1	Sample # (lab only)					
2A-W-41				SS		X	1600	2	21					
GW-4				SS		3-30-23	1750	1	22					
S3-CD				SS			1449	1	23					
S4-CD				SS			1655	1	24					
S4-AD				SS			1549	1	25					
S4-BD				SS			1624	1	26					
S3-AD				SS			1316	1	27					
S1-BU			X	SS		X	1205	1	28					
* Matrix: SS - Soil AIR - Air F - Filter GW - Groundwater B - Bioassay WW - WasteWater DW - Drinking Water OT - Other			Remarks: STD TAT			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)		Date:	Time:	Received By: (Signature)		Date:	Time:	Trip Blank Received: Yes / No HCL / MeOH TBR		Temp: °C Bottles Received: If preservation required by Login: Date/Time				
		3-31-23	1520			3-31-23	1520							
Relinquished by: (Signature)		Date:	Time:	Received by: (Signature)		Date:	Time:	Hold:		Condition: NCF / OK				
Relinquished by: (Signature)		Date:	Time:	Received for lab by: (Signature)		Date:	Time:							

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: **James O'Connell/Sydney Clark**

Project Description: **200410**

City/State Collected: _____ Please Circle: PT MT CT ET

Email To: **Sydney.Clark@arcadis.com; Amanda.Bowring@arcadis.com**

Client Project # **30063829.25.21**
BUST SKYKOMBI

Lab Project # **CHEVARCWA-200410**

Site/Facility ID # **15510 AURORA AVEN**

Quote # _____

Rush? (Lab MUST Be Notified)
 ___ 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	Cntrs	Analysis / Container / Preservative	Chain of Custody
S4-AU	G	SS		3-30-23	1550	3	BTEXM,EDB,EDC 8260D 40mlAmb/MeOH10ml/Syr	Pace PEOPLE ADVANCING SCIENCE MT JULIET, TN 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 # _____ Table # _____ Acctnum: CHEVARCWA Template: T220745 Prelogin: P967072 PM: 110 - Brian Ford PB: _____ Shipped Via: _____ Remarks _____ Sample # (lab only) _____
MS		SS			1550	1	NWTPHDX no silica 8ozClr-NoPres	
MSD		SS			1550	1	NWTPHGX 40mlAmb/MeOH10ml/Syr	
S1-AU		SS			1235	1	Total Lead 6010 8ozClr-NoPres	
S3-BD		SS			1355	1		
S4-CU		SS			1700	1		
S3-CU		SS			1448	1		
S4-BU		SS			1630	1		
DUP-2		SS		3-29-23		1		
DUP-3	X	XSS		3-29-23		1		

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	Cntrs	Analysis / Container / Preservative	Chain of Custody
S4-AU	G	SS		3-30-23	1550	3	BTEXM,EDB,EDC 8260D 40mlAmb/MeOH10ml/Syr	31 MS/MSD
MS		SS			1550	1	NWTPHDX no silica 8ozClr-NoPres	32
MSD		SS			1550	1	NWTPHGX 40mlAmb/MeOH10ml/Syr	33
S1-AU		SS			1235	1	Total Lead 6010 8ozClr-NoPres	34 32
S3-BD		SS			1355	1		35 33
S4-CU		SS			1700	1		36 34
S3-CU		SS			1448	1		37 35
S4-BU		SS			1630	1		38 36
DUP-2		SS		3-29-23		1		39 37
DUP-3	X	XSS		3-29-23		1		40 38

* Matrix: SS - Soil AIR - Air F - Filter
 GW - Groundwater B - Bioassay
 WW - WasteWater
 DW - Drinking Water
 OT - Other _____

Remarks: **STO TAG**

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) _____ Date: **3-31-23** Time: **1520**

Received by: (Signature) _____ Date: **3-31-23** Time: **1520**

Trip Blank Received: Yes / No
 HCL / MeOH
 IBR


Temp: _____ °C Bottles Received: _____

If preservation required by Login: Date/Time _____

Relinquished by: (Signature) _____ Date: _____ Time: _____

Received for lab by: (Signature) _____ 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		Pres Chk	Analysis / Container / Preservative					Chain of Custody Page 2 of 6
Report to: James O'Connell/Sydney Clark		Email To: Sydney.Clark@arcadis.com;Amanda.Bowring@a		BTEXM,EDB,EDC 8260D 40mlAmb/MeOH10ml/Syr NWTPHDX no silica 8ozClr-NoPres NWTPHGX 40mlAmb/MeOH10ml/Syr Total Lead 6010 8ozClr-NoPres					 PEOPLE ADVANCING SCIENCE MT JULIET, TN 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: 200410		City/State Collected:								Please Circle: PT MT CT ET
Phone: 206-325-5254		Client Project # 30063829.25.21 BNSF SKYKOWSKI		Lab Project # CHEVARCWA-200410		SDG # Table # Acctnum: CHEVARCWA Template: T220745 Prelogin: P967072 PM: 110 - Brian Ford PB: Shipped Via:				
Collected by (print):		Site/Facility ID # 15510 AURORA AVE N		P.O. #						
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 #		Date Results Needed No. of Cntrs				
Immediately Packed on Ice N ___ Y ___										
Sample ID	Comp/Grab	Matrix *	Depth	Date	Time				Remarks	Sample # (lab only)

S1-BU	6	SS		3-30-23	1205	1	X					41	NOT RECEIVED
S1-BD		SS			1120	1	X					42	39
S2-BU		SS			0955	1	X					43	40
S2-BD		SS			0907	1	X					44	41
S3-AU		SS			1356	1	X					45	42
S1-AD		SS			1126	1	X					46	43
S3-BU		SS			1321	1	X					47	44
S2-AD		SS			0905	1	X					48	45
2A-W-42		SS			1818	1	X					49	46
S2-AU	↓	SS		✓	0945	1	X					50	47

* Matrix: SS - Soil AIR - Air F - Filter GW - Groundwater B - Bioassay WW - WasteWater DW - Drinking Water OT - Other		Remarks: STD TAT		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 type="checkbox"/> Y <input type="checkbox"/> N Bottles arrive intact: <input type="checkbox"/> Y <input type="checkbox"/> N Correct bottles used: <input type="checkbox"/> Y <input type="checkbox"/> N Sufficient volume sent: <input type="checkbox"/> Y <input type="checkbox"/> N If Applicable VOA Zero Headspace: <input type="checkbox"/> Y <input type="checkbox"/> N Preservation Correct/Checked: <input type="checkbox"/> Y <input type="checkbox"/> N RAD Screen <0.5 mR/hr: <input type="checkbox"/> Y <input type="checkbox"/> N				
Samples returned via: UPS FedEx Courier		Tracking #								
Relinquished by: (Signature)	Date: 3-31-23	Time: 1520	Received by: (Signature)	3-31-23 1520		Trip Blank Received: Yes / No HCL / MeOH TBR		If preservation required by Login: Date/Time		
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)			Temp: °C Bottles Received:				
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)			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: **James O'Connell/Sydney Clark**

Email To: **Sydney.Clark@arcadis.com; Amanda.Bowring@arcadis.com**

Project Description: **200410**

City/State Collected: Please Circle: **PT MT CT ET**

Phone: **206-325-5254**

Client Project # **30063829-25-21**

Lab Project # **CHEVARCWA-200410**

Collected by (print):

Site/Facility ID # **15510 AURORA AVE N**

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 #

Immediately Packed on Ice N ___ Y ___

Date Results Needed No. of Cntrs

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	BTEXM, EDB, EDC 8260D 40mlAmb/MeOH10ml/Syr	NWTPHDX no silica 8ozClr-NoPres	NWTPHGX 40mlAmb/MeOH10ml/Syr	Total Lead 6010 8ozClr-NoPres									
DUP-4	G	GWSS		3-30-23		1		X											
EQUIPMENT BLANK		GWSS		3-30-23	1200	1		X											
		SS																	
		SS																	
		SS																	
		SS																	
		SS																	
		SS																	
		SS																	

Pace
 PEOPLE ADVANCING SCIENCE

MT JULIET, TN

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 #

Table #

Acctnum: **CHEVARCWA**

Template: **T220745**

Prelogin: **P967072**

PM: **110 - Brian Ford**

PB:

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: **STD TAX**

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

Samples returned via: UPS FedEx Courier Tracking #

Relinquished by: (Signature)	Date: 3-31-23	Time: 1520	Received by: (Signature)	Trip Blank Received: Yes / No
				<input type="checkbox"/> HCL / MeOH <input type="checkbox"/> TBR
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time: Hold: Condition: NCF / OK



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-01
CLIENT SAMPLE ID:	1C-W-8	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/28/2023 9:45:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U ↓ UJ	100	1	UG/L	04/07/2023	DHM
TPH-Oil Range	NWTPH-DX	U ↓	100	1	UG/L	04/07/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	103	04/07/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-02
CLIENT SAMPLE ID	5-W-17	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/28/2023 9:50:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U ↓ U	100	1	UG/L	04/07/2023	DHM
TPH-Oil Range	NWTPH-DX	U ↓ U	100	1	UG/L	04/07/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	116	04/07/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-03
CLIENT SAMPLE ID	5-W-16	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/28/2023 11:15:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U ↓ UJ	100	1	UG/L	04/07/2023	DHM
TPH-Oil Range	NWTPH-DX	U ↓ UJ	100	1	UG/L	04/07/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	100	04/07/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-04
CLIENT SAMPLE ID	5-W-55	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/28/2023 4:10:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U ↓ UJ	100	1	UG/L	04/07/2023	DHM
TPH-Oil Range	NWTPH-DX	U ↓ UJ	100	1	UG/L	04/07/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	108	04/07/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit..

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-05
CLIENT SAMPLE ID	1C-W-4	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/28/2023 11:00:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	100 J	100	1	UG/L	04/07/2023	DHM
TPH-Oil Range	NWTPH-DX	UJ	100	1	UG/L	04/07/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	104	04/07/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains an unidentified diesel range product.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-06
CLIENT SAMPLE ID	5-W-56	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/28/2023 4:05:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	2800 ↓ J	500	5	UG/L	04/09/2023	DHM
TPH-Oil Range	NWTPH-DX	1800 ↓	500	5	UG/L	04/09/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 5X Dilution	NWTPH-DX	87.6	04/09/2023	DHM

Chromatogram indicates that it is likely that sample contains an unidentified diesel range product and an unidentified oil range product.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-07
CLIENT SAMPLE ID	5-W-14	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/28/2023 12:40:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U ↓ U	100	1	UG/L	04/08/2023	DHM
TPH-Oil Range	NWTPH-DX	U ↓ U	100	1	UG/L	04/08/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	99.6	04/08/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-08
CLIENT SAMPLE ID	5-W-19	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/28/2023 2:08:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U ↓ UJ	100	1	UG/L	04/08/2023	DHM
TPH-Oil Range	NWTPH-DX	U ↓ UJ	100	1	UG/L	04/08/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	109	04/08/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-09
CLIENT SAMPLE ID	5-W-18	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/28/2023 3:10:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U ↓ UJ	100	1	UG/L	04/08/2023	DHM
TPH-Oil Range	NWTPH-DX	U ↓ UJ	100	1	UG/L	04/08/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	106	04/08/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-10
CLIENT SAMPLE ID	DUP-1	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/28/2023
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U ↓ UJ	100	1	UG/L	04/08/2023	DHM
TPH-Oil Range	NWTPH-DX	U ↓ UJ	100	1	UG/L	04/08/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	107	04/08/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-11
CLIENT SAMPLE ID	EW-2A	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/29/2023 5:02:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U ↓ UJ	100	1	UG/L	04/08/2023	DHM
TPH-Oil Range	NWTPH-DX	U ↓	100	1	UG/L	04/08/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	150 SUR01	04/08/2023	DHM

SUR01 -One or more surrogate recoveries were above the upper control limits. The sample results may be biased high.
 U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-12
CLIENT SAMPLE ID	MW-4	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/29/2023 10:15:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	140 ↓ J	100	1	UG/L	04/08/2023	DHM
TPH-Oil Range	NWTPH-DX	160 ↓	100	1	UG/L	04/08/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	105	04/08/2023	DHM

Chromatogram indicates that it is likely that sample contains an unidentified diesel range product and light oil.
Diesel range product results biased high due to oil range product overlap.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-13
CLIENT SAMPLE ID	EW-1	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/29/2023 12:20:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U ↓ U	100	1	UG/L	04/08/2023	DHM
TPH-Oil Range	NWTPH-DX	U ↓ U	100	1	UG/L	04/08/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	110	04/08/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit..

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-14
CLIENT SAMPLE ID	5-W-43	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/29/2023 12:50:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U ↓ U	100	1	UG/L	04/08/2023	DHM
TPH-Oil Range	NWTPH-DX	U ↓ U	100	1	UG/L	04/08/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	111	04/08/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-15
CLIENT SAMPLE ID	2-A-W-40	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/29/2023 2:45:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U UJ	100	1	UG/L	04/08/2023	DHM
TPH-Oil Range	NWTPH-DX	280 J	100	1	UG/L	04/08/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	106	04/08/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains weathered lube oil.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-16
CLIENT SAMPLE ID:	GW-1	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/29/2023 12:10:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U ↓ UJ	100	1	UG/L	04/08/2023	DHM
TPH-Oil Range	NWTPH-DX	U ↓ UJ	100	1	UG/L	04/08/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	161 SUR01	04/08/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.
 SUR01 -One or more surrogate recoveries were above the upper control limits. The sample results may be biased high.



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-17
CLIENT SAMPLE ID:	GW-3	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/29/2023 5:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	160 J	100	1	UG/L	04/09/2023	DHM
TPH-Oil Range	NWTPH-DX w/ SGA	U UJ	100	1	UG/L	04/09/2023	DHM
TPH-Diesel Range	NWTPH-DX	490 ↓ J	100	1	UG/L	04/08/2023	DHM
TPH-Oil Range	NWTPH-DX	140 ↓ J	100	1	UG/L	04/08/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX w/ SGA	105	04/09/2023	DHM
C25	NWTPH-DX	106	04/08/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.
 Chromatogram indicates that it is likely that sample contains highly weathered diesel and an unidentified oil range product.
 Oil range product results biased high due to diesel range product overlap.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-18
CLIENT SAMPLE ID	GW-2	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/29/2023 1:45:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U ↓ UJ	100	1	UG/L	04/08/2023	DHM
TPH-Oil Range	NWTPH-DX	U ↓ UJ	100	1	UG/L	04/08/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	106	04/08/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-19
CLIENT SAMPLE ID	5W-51	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/29/2023 1:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	270 ↓ J	100	1	UG/L	04/08/2023	DHM
TPH-Oil Range	NWTPH-DX	120 ↓	100	1	UG/L	04/08/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	95.7	04/08/2023	DHM

Chromatogram indicates that it is likely that sample contains highly weathered an unidentified diesel range product and an unidentified oil range product.
 Oil range product results biased high due to diesel range product overlap.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-20
CLIENT SAMPLE ID	1B-W-23	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/29/2023 3:35:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U ↓ ↓ UJ	100	1	UG/L	04/08/2023	DHM
TPH-Oil Range	NWTPH-DX	U ↓ ↓ UJ	100	1	UG/L	04/08/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	95.1	04/08/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-21
CLIENT SAMPLE ID	2A-W-9	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/29/2023 11:55:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	350	100	1	UG/L	04/08/2023	DHM
TPH-Oil Range	NWTPH-DX	220	100	1	UG/L	04/08/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	91.9	04/08/2023	DHM

Chromatogram indicates that it is likely that sample contains highly weathered diesel and lube oil.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-22
CLIENT SAMPLE ID	1C-W-7	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/29/2023 2:10:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	100 J	100	1	UG/L	04/08/2023	DHM
TPH-Oil Range	NWTPH-DX	U UJ	100	1	UG/L	04/08/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	89.9	04/08/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains an unidentified diesel range product.



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-23
CLIENT SAMPLE ID	2A-W-41	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/29/2023 4:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	110 J	100	1	UG/L	04/09/2023	DHM
TPH-Oil Range	NWTPH-DX w/ SGA	U J	100	1	UG/L	04/09/2023	DHM
TPH-Diesel Range	NWTPH-DX	310 J	100	1	UG/L	04/08/2023	DHM
TPH-Oil Range	NWTPH-DX	U J	100	1	UG/L	04/08/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX w/ SGA	91.1	04/09/2023	DHM
C25	NWTPH-DX	92.9	04/08/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains highly weathered diesel.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-24
CLIENT SAMPLE ID	GW-4	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/30/2023 5:50:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U ↓ UJ	100	1	UG/L	04/08/2023	DHM
TPH-Oil Range	NWTPH-DX	U ↓ UJ	100	1	UG/L	04/08/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	92.1	04/08/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-25
CLIENT SAMPLE ID	S3-CD	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/30/2023 2:49:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U ↓ UJ	100	1	UG/L	04/08/2023	DHM
TPH-Oil Range	NWTPH-DX	U ↓ UJ	100	1	UG/L	04/08/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	88.6	04/08/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-26
CLIENT SAMPLE ID	S4-CD	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/30/2023 4:55:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U ↓ UJ	100	1	UG/L	04/08/2023	DHM
TPH-Oil Range	NWTPH-DX	U ↓ UJ	100	1	UG/L	04/08/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	90.9	04/08/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-27
CLIENT SAMPLE ID	S4-AD	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/30/2023 3:49:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U ↓ UJ	100	1	UG/L	04/08/2023	DHM
TPH-Oil Range	NWTPH-DX	U ↓ UJ	100	1	UG/L	04/08/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	94.2	04/08/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-28
CLIENT SAMPLE ID	S4-BD	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/29/2023 4:24:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U ↓ UJ	100	1	UG/L	04/08/2023	DHM
TPH-Oil Range	NWTPH-DX	U ↓	100	1	UG/L	04/08/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	95.2	04/08/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-29
CLIENT SAMPLE ID	S3-AD	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/30/2023 1:16:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U ↓ UJ	100	1	UG/L	04/08/2023	DHM
TPH-Oil Range	NWTPH-DX	U ↓ UJ	100	1	UG/L	04/08/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	91.4	04/08/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-30
CLIENT SAMPLE ID	S1-BU	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/30/2023 12:05:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U ↓ UJ	100	1	UG/L	04/08/2023	DHM
TPH-Oil Range	NWTPH-DX	U ↓ UJ	100	1	UG/L	04/08/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	94.0	04/08/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-31
CLIENT SAMPLE ID	S4-AU	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/30/2023 3:50:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U ↓ UJ	100	1	UG/L	04/08/2023	DHM
TPH-Oil Range	NWTPH-DX	U ↓ UJ	100	1	UG/L	04/08/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	80.4	04/08/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-32
CLIENT SAMPLE ID	S1-AU	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/30/2023 12:35:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U ↓ UJ	100	1	UG/L	04/08/2023	DHM
TPH-Oil Range	NWTPH-DX	U ↓	100	1	UG/L	04/08/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	92.7	04/08/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-33
CLIENT SAMPLE ID	S3-BD	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/30/2023 1:55:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U ↓ ↓ U	100	1	UG/L	04/08/2023	DHM
TPH-Oil Range	NWTPH-DX	U ↓ ↓ U	100	1	UG/L	04/08/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	95.3	04/08/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-34
CLIENT SAMPLE ID	S4-CU	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/30/2023 5:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	130 J	100	1	UG/L	04/08/2023	DHM
TPH-Oil Range	NWTPH-DX	UJ	100	1	UG/L	04/08/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	93.0	04/08/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains an unidentified diesel range product.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-35
CLIENT SAMPLE ID	S3-CU	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/30/2023 2:48:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U ↓ UJ	100	1	UG/L	04/08/2023	DHM
TPH-Oil Range	NWTPH-DX	U ↓ UJ	100	1	UG/L	04/08/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	90.7	04/08/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-36
CLIENT SAMPLE ID	S4-BU	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/30/2023 4:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U ↓ UJ	100	1	UG/L	04/08/2023	DHM
TPH-Oil Range	NWTPH-DX	U ↓ UJ	100	1	UG/L	04/08/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	93.1	04/08/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-37
CLIENT SAMPLE ID	DUP-2	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/29/2023
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	UJ	100	1	UG/L	04/08/2023	DHM
TPH-Oil Range	NWTPH-DX	330 J	100	1	UG/L	04/08/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	101	04/08/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains weathered lube oil.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-38
CLIENT SAMPLE ID	DUP-3	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/29/2023
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U ↓ UJ	100	1	UG/L	04/08/2023	DHM
TPH-Oil Range	NWTPH-DX	U ↓ UJ	100	1	UG/L	04/08/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	96.9	04/08/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-39
CLIENT SAMPLE ID	S1-BD	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/30/2023 11:20:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U ↓ UJ	100	1	UG/L	04/08/2023	DHM
TPH-Oil Range	NWTPH-DX	U ↓ UJ	100	1	UG/L	04/08/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	101	04/08/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-40
CLIENT SAMPLE ID	S2-BU	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/30/2023 9:55:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	360 ↓ J	100	1	UG/L	04/08/2023	DHM
TPH-Oil Range	NWTPH-DX	110 ↓	100	1	UG/L	04/08/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	91.4	04/08/2023	DHM

Chromatogram indicates that it is likely that sample contains highly weathered diesel and an unidentified oil range product.
Oil range product results biased high due to diesel range product overlap.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-41
CLIENT SAMPLE ID	S2-BD	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/30/2023 9:07:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U ↓	100	1	UG/L	04/08/2023	DHM
TPH-Oil Range	NWTPH-DX	U ↓ UJ	100	1	UG/L	04/08/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	94.5	04/08/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-42
CLIENT SAMPLE ID	S3-AU	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/30/2023 1:56:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	160 J	100	1	UG/L	04/08/2023	DHM
TPH-Oil Range	NWTPH-DX	U UJ	100	1	UG/L	04/08/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	98.7	04/08/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains an unidentified diesel range product.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-43
CLIENT SAMPLE ID	S1-AD	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/30/2023 11:26:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U ↓ UJ	100	1	UG/L	04/09/2023	DHM
TPH-Oil Range	NWTPH-DX	U ↓ UJ	100	1	UG/L	04/09/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	100	04/09/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-44
CLIENT SAMPLE ID	S3-BU	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/30/2023 1:21:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U ↓ UJ	100	1	UG/L	04/09/2023	DHM
TPH-Oil Range	NWTPH-DX	U ↓ UJ	100	1	UG/L	04/09/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	93.0	04/09/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-45
CLIENT SAMPLE ID	S2-AD	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/30/2023 9:05:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U ↓ U	100	1	UG/L	04/09/2023	DHM
TPH-Oil Range	NWTPH-DX	U ↓ U	100	1	UG/L	04/09/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	93.8	04/09/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-46
CLIENT SAMPLE ID	2A-W-42	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/30/2023 6:18:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U ↓ UJ	100	1	UG/L	04/09/2023	DHM
TPH-Oil Range	NWTPH-DX	U ↓ UJ	100	1	UG/L	04/09/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	96.9	04/09/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-47
CLIENT SAMPLE ID	S2-AU	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/30/2023 9:45:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U ↓ ↓ U	100	1	UG/L	04/09/2023	DHM
TPH-Oil Range	NWTPH-DX	U ↓ ↓ U	100	1	UG/L	04/09/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	96.1	04/09/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-48
CLIENT SAMPLE ID	DUP-4	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/30/2023
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	170 J	100	1	UG/L	04/09/2023	DHM
TPH-Oil Range	NWTPH-DX	U UJ	100	1	UG/L	04/09/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	96.7	04/09/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.
 Chromatogram indicates that it is likely that sample contains an unidentified diesel range product.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	4/12/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23040003
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23040003-49
CLIENT SAMPLE ID	EQUIPMENT BLANK	DATE RECEIVED:	03/31/2023
		COLLECTION DATE:	3/30/2023 1:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U ↓ UJ	100	1	UG/L	04/09/2023	DHM
TPH-Oil Range	NWTPH-DX	U ↓ UJ	100	1	UG/L	04/09/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	92.9	04/09/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

BNSF Skykomish

DATA REVIEW

Skykomish, Washington

Total Petroleum Hydrocarbon (TPH) Analyses

SDG #: EV23060093

Analyses Performed By:
ALS Environmental
Everett, Washington

Report #: 52031R
Project: 30159458.02

1 Summary

This data quality assessment summarizes the review of Sample Delivery Group (SDG) # EV23060093 for samples collected in association with the BNSF Skykomish, Washington. The review was conducted as a Tier II evaluation and included review of data package completeness. Only analytical data as reported by the laboratory 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 records. Analyses were performed on the following samples:

Sample ID	Lab ID	Matrix	Sample Collection Date	Parent Sample	Analysis
					TPH
GW-1_06152023	EV23060093-01	Water	06/15/2023		X
GW-2_06142023	EV23060093-02	Water	06/14/2023		X
GW-3_06142023	EV23060093-03	Water	06/14/2023		X
GW-4_06142023	EV23060093-04	Water	06/14/2023		X
EW-1_06142023	EV23060093-05	Water	06/14/2023		X
EW-2A_06152023	EV23060093-06	Water	06/15/2023		X
S1-AD_06142023	EV23060093-07	Water	06/14/2023		X
S1-AU_06142023	EV23060093-08	Water	06/14/2023		X
S1-BD_06152023	EV23060093-09	Water	06/15/2023		X
S1-BU_06152023	EV23060093-10	Water	06/15/2023		X
S2-AD_06142023	EV23060093-11	Water	06/14/2023		X
S2-AU_06142023	EV23060093-12	Water	06/14/2023		X
S2-BD_06152023	EV23060093-13	Water	06/15/2023		X
S2-BU_06152023	EV23060093-14	Water	06/15/2023		X
S3-AD_06152023	EV23060093-15	Water	06/15/2023		X
S3-AU_06152023	EV23060093-16	Water	06/15/2023		X
S3-BD_06152023	EV23060093-17	Water	06/15/2023		X
S3-BU_06152023	EV23060093-18	Water	06/15/2023		X
S3-CD_06152023	EV23060093-19	Water	06/15/2023		X
S3-CU_06152023	EV23060093-20	Water	06/15/2023		X
S4-AD_06152023	EV23060093-21	Water	06/15/2023		X
S4-AU_06152023	EV23060093-22	Water	06/15/2023		X
S4-BD_06152023	EV23060093-23	Water	06/15/2023		X
S4-BU_06152023	EV23060093-24	Water	06/15/2023		X
S4-CD_06152023	EV23060093-25	Water	06/15/2023		X
S4-CU_06152023	EV23060093-26	Water	06/15/2023		X
2A-W-40_06142023	EV23060093-27	Water	06/14/2023		X
2A-W-41_06142023	EV23060093-28	Water	06/14/2023		X

Sample ID	Lab ID	Matrix	Sample Collection Date	Parent Sample	Analysis
					TPH
2A-W-42_06142023	EV23060093-29	Water	06/14/2023		X
1B-W-23_06152023	EV23060093-30	Water	06/15/2023		X
5-W-43_06142023	EV23060093-31	Water	06/14/2023		X
EB_06152023	EV23060093-32	Water	06/15/2023		X
FD-1_06142023	EV23060093-33	Water	06/14/2023	2A-W-40_06142023	X
FD-2_06152023	EV23060093-34	Water	06/15/2023	S2-BD_06152023	X
FD-3_06152023	EV23060093-35	Water	06/15/2023	S3-BU_06152023	X

Note:

TPH = Total Petroleum Hydrocarbons

2 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 Quality Assurance (QA) or sample problems provided		X		X	
12. Data Package Completeness and Compliance		X		X	

3 Organic Analysis Introduction

Analyses were performed according to United States Environmental Protection Agency (USEPA) Method NWTPH-DX. Data were reviewed in accordance with USEPA CLP National Functional Guidelines for Organic Superfund Methods Data Review, document number 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 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 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.

4 Total Petroleum Hydrocarbons (TPH) Analyses

4.1 Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
NWTPH-DX	Water	14 days from collection to extraction and 40 days from extraction to analysis (preserved) 7 days from collection to extraction and 40 days from extraction to analysis (Unpreserved)	Cool to <6 °C

All samples were analyzed within the specified holding time criteria.

4.2 Blank Contamination

Quality assurance (QA) blanks (i.e. laboratory method blanks and equipment 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 also 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 RL, with the exception of the compounds listed in the following table. Sample results less than the BAL associated with the following sample locations were qualified as listed in the following table.

Sample Locations	Analytes	Sample Result	Qualification
GW-3_06142023 S1-AU_06142023 S1-BD_06152023 S2-BU_06152023 2A-W-40_06142023 2A-W-41_06142023 FD-1_06142023	TPH-Oil Range (EB)	Detected sample results >RL and <BAL	"UB" at detected sample concentration

Notes:

RL = reporting limit

EB = equipment blank

4.3 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 samples exhibited surrogate recoveries within the control limits.

4.4 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 samples 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 a samples S3-BD_06152023 and 2A-W-42_06142023. MS/MSD analysis exhibited recoveries and RPDs within the control limits.

4.5 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. The RPD between the LCS and LCSD results must be within the laboratory-established acceptance limits.

All compounds associated with the LCS/LCSD analyses exhibited recoveries and RPDs within the control limits.

4.6 Field Duplicate Sample Analysis

The field duplicate sample analysis is used to assess the precision of the field sampling procedures and analytical method. The control limit of 30% for water matrices and 50% for soil matrices is applied to the RPD between the parent sample and the field duplicate sample results. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the reporting limit (RL), a control limit of two times the RL for water matrices or three times the RL for soil matrices is applied to the difference between the results.

Results for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compound	Sample Result (UG/L)	Duplicate Result (UG/L)	RPD
2A-W-40_06142023 / FD-1_06142023	All compounds	U	U	AC
S2-BD_06152023 / FD-2_06152023	All compounds	U	U	AC

Sample ID/Duplicate ID	Compound	Sample Result (UG/L)	Duplicate Result (UG/L)	RPD
S3-BU_06152023 / FD-3_06152023	All compounds	U	U	AC

Notes:

AC = acceptable

U = non-detect

The calculated RPDs between the parent sample and field duplicate were acceptable.

4.7 Compound Identification

The retention times of all quantitated peaks must fall within the calculated retention time windows.

All identified compounds met the specified criteria.

4.8 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.

4.9 Data Validation Checklist for Total Petroleum Hydrocarbon (TPH)

TPH: NWTPH-DX	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Gas Chromatography/Flame- and Photo- Ionization Detectors (GC/FID/PID)					
Tier II Validation					
Holding Times/Preservation		X		X	
Reporting Limits (Units)		X		X	
Blanks					
A. Method Blanks		X		X	
B. Trip Blanks	X				X
C. Equipment Blanks		X	X		
Surrogates Accuracy (%R)		X		X	
Matrix Spike (MS) %R		X		X	
Matrix Spike Duplicate (MSD) %R		X		X	
MS/MSD Precision (RPD)		X		X	
Laboratory Control Sample (LCS) %R		X		X	
Laboratory Control Sample Duplicate (LCSD) %R		X		X	
LCS/LCSD RPD		X		X	
Laboratory Duplicate Sample RPD	X				X
Field Duplicate Sample RPD		X		X	
Dilution Factor		X		X	
Moisture Content	X				X

Notes:

%R - percent recovery

RPD - relative percent difference

Validation Performed By: Hareesha Naik

Signature: *Hareesha Naik*

Date: November 29, 2023

Peer Review: Jennifer Singer

Date: November 29, 2023



Cincinnati, OH
+1 513 733 5336

Fort Collins, CO
+1 970 490 1511

Everett, WA
+1 425 356 2600

Holland, MI
+1 616 399 6070

Chain of Custody Form

Houston, TX
+1 281 530 5656

Spring City, PA
+1 610 948 4903

South Charleston, WV
+1 304 356 3168

Middletown, PA
+1 717 944 5541

Salt Lake City, UT
+1 801 266 7700

York, PA
+1 717 505 5280

Page 1 of 4

COC ID: **289098**

EV23060093

ALS Project Manager:		ALS Work Order #:	
Customer Information		Project Information	
Purchase Order	30159458	Project Name	BNSF Skykomish
Work Order		Project Number	
Company Name	Arcadis U.S., Inc.	Bill To Company	Arcadis U.S., Inc.
Send Report To	Kyle Haslam	Invoice Attn	Accounts Payable
Address	1100 Olive Way	Address	630 Plaza Drive
	Suite 800		Suite 600
City/State/Zip	Seattle, WA 98101	City/State/Zip	Highlands Ranch CO 80129
Phone	(206) 325-5254	Phone	(303) 471-3699
Fax	(206) 325-8218	Fax	
e-Mail Address	kyle.haslam@arcadis.com	e-Mail Address	accountspayable.administration@arcadis-us.com

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	GW-1_06152023	6-15-2023	1006	Water	—	1	X										
2	GW-2_06142023	6-14-2023	1121	Water	—	1	X										
3	GW-3_06142023	6-14-2023	1325	Water	—	2	X	X									
4	GW-4_06142023	6-14-2023	1440	Water	—	1	X										
5	EW-1_06142023	6-14-2023	1001	Water	—	1	X										
6	EW-2A_06152023	6-15-2023	1011	Water	—	1	X										
7	S1-AD_06142023	6-14-23	6-15-2023	1555	Water	1	X										
8	S1-AU_06142023	# 6-14-23	6-15-2023	1600	Water	1	X										
9	S1-BD_06152023	6-15-2023	1630	Water	—	1	X										
10	S1-BU_06152023	6-15-2023	1640	Water	—	1	X										

Sampler(s) Please Print & Sign <i>ELIATHAN ALLEN</i> <i>ROBERTO PIEMONTESE</i>		Shipment Method		Required Turnaround Time: (Check Box) <input type="checkbox"/> Other <input type="checkbox"/>				Results Due Date:			
				<input type="checkbox"/> STD 10 Wk Days <input checked="" type="checkbox"/> 5 Wk Days <input type="checkbox"/> 2 Wk Days <input type="checkbox"/> 24 Hour							
Relinquished by: <i>ROBERTO PIEMONTESE</i>	Date: 6/16/23	Time: 8:00	Received by: <i>Chy...</i>	Received by (Laboratory): 6/16/23 0800 ALS				Notes:			
Relinquished by:	Date:	Time:	Checked by (Laboratory):	Cooler ID				Cooler Temp.			
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):	1				1.3°C			
				2				2.2°C			
				3				3.1°C			
				4				1.6°C			
				5				4.3°C			
Preservative Key: 1-HCl 2-HNO ₃ 3-H ₂ SO ₄ 4-NaOH 5-Na ₂ S ₂ O ₃ 6-NaHSO ₄ 7-Other 8-4°C 9-5035				QC Package: (Check One Box Below)				<input checked="" type="checkbox"/> Level II Std QC <input type="checkbox"/> TRRP Checklist <input type="checkbox"/> Level III Std QC/Raw Date <input type="checkbox"/> TRRP Level IV <input type="checkbox"/> Level IV SW846/CLP <input type="checkbox"/> Other			

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
 2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
 3. The Chain of Custody is a legal document. All information must be completed accurately.

Copyright 2011 by ALS Environmental.



Cincinnati, OH
+1 513 733 5336

Fort Collins, CO
+1 970 490 1511

Chain of Custody Form

Houston, TX
+1 281 530 5656

Spring City, PA
+1 610 948 4903

South Charleston, WV
+1 304 356 3168

Everett, WA
+1 425 356 2600

Holland, MI
+1 616 399 6070

Page 2 of 4

Middletown, PA
+1 717 944 5541

Salt Lake City, UT
+1 801 266 7700

York, PA
+1 717 505 5280

COC ID: **289097**

EV23060093

Customer Information		Project Information					Parameter/Method Request for Analysis										
Purchase Order	30159458	Project Name	BNSF Skykomish			A	NWTPH-DX										
Work Order		Project Number				B	NWTPH-DX w/ SGC										
Company Name	Arcadis U.S., Inc.	Bill To Company	Arcadis U.S., Inc.			C											
Send Report To	Kyle Haslam	Invoice Attn	Accounts Payable			D											
Address	1100 Olive Way Suite 800	Address	630 Plaza Drive Suite 600			E											
						F											
City/State/Zip	Seattle, WA 98101	City/State/Zip	Highlands Ranch CO 80129			G											
Phone	(206) 325-5254	Phone	(303) 471-3699			H											
Fax	(206) 325-8218	Fax				I											
e-Mail Address	kyle.haslam@arcadis.com	e-Mail Address	accountspayable.administration@arcadisus.com														
No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
11	S2-AD - 06142023	6-14-23	1041 1705	Water	-	1041	X										
12	S2-AU - 06142023	6-14-23	1715	Water	-	1	X										
13	S2-BD - 06152023 <i>MS/MSD</i>	6-15-23	0905	Water	-	1	X										
14	S2-BU - 06152023	6-15-23	0905	Water	-	1	X										
15	S3-AD - 06152023	6-15-23	1047	Water	-	1	X										
16	S3-AU - 06152023	6-15-23	1058	Water	-	1	X										
17	S3-BD - 06152023 <i>MS/MSD</i>	6-15-23	1258 1142	Water	-	3	X										
18	S3-BU - 06152023	6-15-23	1137	Water	-	1	X										
19	S3-CD - 06152023	6-15-23	1234	Water	-	1	X										
20	S3-CU - 06152023	6-15-23	1225	Water	-	1	X										
Sampler(s) Please Print & Sign <i>ALFABETH ZURELLA</i> <i>ROBERTO PIEMONTESE</i>		Shipment Method			Required Turnaround Time: (Check Box) <input type="checkbox"/> Other _____				Results Due Date:								
					<input type="checkbox"/> STD 10 Wk Days <input checked="" type="checkbox"/> 5 Wk Days <input type="checkbox"/> 2 Wk Days <input type="checkbox"/> 24 Hour												
Relinquished by: <i>ROBERTO PIEMONTESE</i>	Date: 6/16/23	Time: 8:00	Received by: <i>Will in Park 6/16/23 6:00 HSE</i>		Notes:												
Relinquished by:	Date:	Time:	Received by (Laboratory):		Cooler ID	Cooler Temp.	QC Package: (Check One Box Below)										
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):				<input checked="" type="checkbox"/> Level II Std QC	<input type="checkbox"/> TRRP Checklist									
							<input type="checkbox"/> Level III Std QC/Raw Date	<input type="checkbox"/> TRRP Level IV									
							<input type="checkbox"/> Level IV SW846/CLP										
							<input type="checkbox"/> Other										
Preservative Key: 1-HCl 2-HNO ₃ 3-H ₂ SO ₄ 4-NaOH 5-Na ₂ S ₂ O ₃ 6-NaHSO ₄ 7-Other 8-4°C 9-5035																	

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
 2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
 3. The Chain of Custody is a legal document. All information must be completed accurately.



Cincinnati, OH
+1 513 733 5336

Fort Collins, CO
+1 970 490 1511

Chain of Custody Form

Houston, TX
+1 281 530 5656

Spring City, PA
+1 610 948 4903

South Charleston, WV
+1 304 356 3168

Everett, WA
+1 425 356 2600

Holland, MI
+1 616 399 6070

Page 3 of 4

Middletown, PA
+1 717 944 5541

Salt Lake City, UT
+1 801 266 7700

York, PA
+1 717 505 5280

COC ID: **289096**

EN23060093

Customer Information		Project Information				ALS Project Manager:											ALS Work Order #:	
Purchase Order	30159458	Project Name	BNSF Skykomish		A	NWTPH-DX												
Work Order		Project Number			B	NWTPH-DX w/ SGC												
Company Name	Arcadis U.S., Inc.	Bill To Company	Arcadis U.S., Inc.		C													
Send Report To	Kyle Haslam	Invoice Attn	Accounts Payable		D													
Address	1100 Olive Way	Address	630 Plaza Drive		E													
	Suite 800		Suite 600		F													
City/State/Zip	Seattle, WA 98101	City/State/Zip	Highlands Ranch CO 80129		G													
Phone	(206) 325-5254	Phone	(303) 471-3699		H													
Fax	(206) 325-8218	Fax			I													
e-Mail Address	kyle.haslam@arcadis.com	e-Mail Address	accountspayable.administration@arcadis.us.com															

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
21	S4-AD - 06152023	6-15-23	1326	Water	-	1	X										
22	S4-AU - 06152023	6-15-23	1316	Water	-	1	X										
23	S4-BD - 06152023	6-15-23	1358	Water	-	1	X										
24	S4-BU - 06152023	6-15-23	1355	Water	-	1	X										
25	S4-CD - 06152023	6-15-23	1432	Water	-	1	X										
26	S4-CU - 06152023	*6-15-23 CN 6-14-23	1430	Water	-	1	X										
27	2A-W40 - 06142023	6-14-23	1116	Water	-	1	X										
28	2A-W41 - 06142023	6-14-23	1222	Water	-	2	X	X									
29	2A-W42 - 06142023	M5/MJD 6-14-23	1350	Water	-	3	X										
30	1B-W23 - 06152023	6-15-23	1110	Water	-	1	X										

Sampler(s) Please Print & Sign ELI TABATA		Shipment Method		Required Turnaround Time: (Check Box) <input type="checkbox"/> Other <input type="checkbox"/>				Results Due Date:			
				<input type="checkbox"/> STD 10 Wk Days <input checked="" type="checkbox"/> 5 Wk Days <input type="checkbox"/> 2 Wk Days <input type="checkbox"/> 24 Hour							
Relinquished by:	Date:	Time:	Received by:	Notes:							
ROBERTO PIEMONTESE	6/16/23	8:00	Amber ASE 6/16/23 8:20								
Relinquished by:	Date:	Time:	Received by (Laboratory):	Cooler ID	Cooler Temp.	QC Package: (Check One Box Below)					
						<input checked="" type="checkbox"/> Level II Std QC	<input type="checkbox"/> TRRP Checklist				
						<input type="checkbox"/> Level III Std QC/Raw Date	<input type="checkbox"/> TRRP Level IV				
						<input type="checkbox"/> Level IV SWB48/CLP					
						<input type="checkbox"/> Other					
Preservative Key: 1-HCl 2-HNO ₃ 3-H ₂ SO ₄ 4-NaOH 5-Na ₂ S ₂ O ₃ 6-NaHSO ₄ 7-Other 8-4°C 9-5035											

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental. ***Checked 16 Amber to confirm. CN**
 2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
 3. The Chain of Custody is a legal document. All information must be completed accurately.

Copyright 2011 by ALS Environmental.



Cincinnati, OH
+1 513 733 5336

Fort Collins, CO
+1 970 490 1511

Chain of Custody Form

Houston, TX
+1 281 530 5656

Spring City, PA
+1 610 948 4903

South Charleston, WV
+1 304 356 3168

Everett, WA
+1 425 356 2600

Holland, MI
+1 616 399 6070

Page 4 of 4

Middletown, PA
+1 717 944 5541

Salt Lake City, UT
+1 801 266 7700

York, PA
+1 717 505 5280

COC ID: **289095**

EV23060093

Customer Information		Project Information					Parameter/Method Request for Analysis										
Purchase Order	30159458	Project Name	BNSF Skykomish			A	NWTPH-DX										
Work Order		Project Number				B	NWTPH-DX w/ SGC										
Company Name	Arcadis U.S., Inc.	Bill To Company	Arcadis U.S., Inc.			C											
Send Report To	Kyle Haslam	Invoice Attn	Accounts Payable			D											
Address	1100 Olive Way Suite 800	Address	630 Plaza Drive Suite 600			E											
						F											
City/State/Zip	Seattle, WA 98101	City/State/Zip	Highlands Ranch CO 80129			G											
Phone	(206) 325-5254	Phone	(303) 471-3699			H											
Fax	(206) 325-8218	Fax				I											
e-Mail Address	kyle.haslam@arcadis.com	e-Mail Address	accountspayable.administration@arcadis.us.com														
No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
31	5-W-43 - 06142023	6-14-2023	1000	Water	---	1	X										
32	EB - 06152023	6-15-23	1506	Water	---	1	X										
33	FD-1 - 06142023	6-14-23	---	Water	---	1	X										
34	FD-2 - 06152023	6-15-23	---	Water	---	1	X										
35	FD-3 - 06152023	6-15-23	---	Water	---	1	X										
6																	
7																	
8																	
9																	
10																	
Sampler(s) Please Print & Sign <i>Robert Piemonte</i>		Shipment Method		Required Turnaround Time: (Check Box)				Other				Results Due Date:					
				<input type="checkbox"/> STD 10 Wk Days <input checked="" type="checkbox"/> 5 Wk Days <input type="checkbox"/> 2 Wk Days <input type="checkbox"/> 24 Hour													
Relinquished by:	Date:	Time:	Received by:	Notes:													
<i>ROBERTO PIEMONTE</i>	6/16/23	8:00	<i>Colleen Waise</i>	<i>6/16/23 0900</i>													
Relinquished by:	Date:	Time:	Received by (Laboratory):	Cooler ID	Cooler Temp.	QC Package: (Check One Box Below)											
						<input checked="" type="checkbox"/> Level II Std QC	<input type="checkbox"/> TRRP Checklist										
						<input type="checkbox"/> Level III Std QC/Raw Date	<input type="checkbox"/> TRRP Level IV										
						<input type="checkbox"/> Level IV SW846/CLP											
						<input type="checkbox"/> Other											
Preservative Key: 1-HCl 2-HNO ₃ 3-H ₂ SO ₄ 4-NaOH 5-Na ₂ S ₂ O ₃ 6-NaHSO ₄ 7-Other 8-4°C 9-5035																	

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
 2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
 3. The Chain of Custody is a legal document. All information must be completed accurately.



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	6/23/2023
		ALS JOB#:	EV23060093
		ALS SAMPLE#:	EV23060093-01
CLIENT CONTACT:	Kyle Haslam	DATE RECEIVED:	06/16/2023
CLIENT PROJECT:	BNSF Skykomish	COLLECTION DATE:	6/15/2023 10:06:00 AM
CLIENT SAMPLE ID	GW-1_06152023	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	06/21/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	06/21/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	105	06/21/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.
 Chromatogram indicates that it is likely that sample contains an unidentified oil range product.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	6/23/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23060093
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23060093-02
CLIENT SAMPLE ID	GW-2_06142023	DATE RECEIVED:	06/16/2023
		COLLECTION DATE:	6/14/2023 11:21:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	06/21/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	06/21/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	96.4	06/21/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	6/23/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23060093
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23060093-03
CLIENT SAMPLE ID:	GW-3_06142023	DATE RECEIVED:	06/16/2023
		COLLECTION DATE:	6/14/2023 1:25:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	400	50	1	UG/L	06/21/2023	DHM
TPH-Diesel Range	NWTPH-DX w/SGA	150	50	1	UG/L	06/23/2023	DHM
TPH-Oil Range	NWTPH-DX	110 UB	100	1	UG/L	06/21/2023	DHM
TPH-Oil Range	NWTPH-DX w/SGA	U	100	1	UG/L	06/23/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	111	06/21/2023	DHM
C25	NWTPH-DX w/SGA	108	06/23/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.
 Chromatogram indicates that it is likely that sample contains an unidentified diesel range product and an unidentified oil range product.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	6/23/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23060093
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23060093-04
CLIENT SAMPLE ID	GW-4_06142023	DATE RECEIVED:	06/16/2023
		COLLECTION DATE:	6/14/2023 2:40:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	06/21/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	06/21/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	88.3	06/21/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	6/23/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23060093
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23060093-05
CLIENT SAMPLE ID	EW-1_06142023	DATE RECEIVED:	06/16/2023
		COLLECTION DATE:	6/14/2023 10:01:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	06/21/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	06/21/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	83.8	06/21/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	6/23/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23060093
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23060093-06
CLIENT SAMPLE ID	EW-2A_06152023	DATE RECEIVED:	06/16/2023
		COLLECTION DATE:	6/15/2023 10:11:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	06/21/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	06/21/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	76.3	06/21/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	6/23/2023
		ALS JOB#:	EV23060093
CLIENT CONTACT:	Kyle Haslam	ALS SAMPLE#:	EV23060093-07
CLIENT PROJECT:	BNSF Skykomish	DATE RECEIVED:	06/16/2023
CLIENT SAMPLE ID	S1-AD_06142023	COLLECTION DATE:	6/14/2023 3:55:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	06/21/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	06/21/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	86.6	06/21/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	6/23/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23060093
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23060093-08
CLIENT SAMPLE ID	S1-AU_06142023	DATE RECEIVED:	06/16/2023
		COLLECTION DATE:	6/14/2023 4:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	06/21/2023	DHM
TPH-Oil Range	NWTPH-DX	140 UB	100	1	UG/L	06/21/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	87.0	06/21/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.
 Chromatogram indicates that it is likely that sample contains an unidentified oil range product.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	6/23/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23060093
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23060093-09
CLIENT SAMPLE ID	S1-BD_06152023	DATE RECEIVED:	06/16/2023
		COLLECTION DATE:	6/15/2023 4:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	06/21/2023	DHM
TPH-Oil Range	NWTPH-DX	100 UB	100	1	UG/L	06/21/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	79.8	06/21/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.
 Chromatogram indicates that it is likely that sample contains an unidentified oil range product.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	6/23/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23060093
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23060093-10
CLIENT SAMPLE ID	S1-BU_06152023	DATE RECEIVED:	06/16/2023
		COLLECTION DATE:	6/15/2023 4:40:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	06/21/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	06/21/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	69.0	06/21/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	6/23/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23060093
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23060093-11
CLIENT SAMPLE ID	S2-AD_06142023	DATE RECEIVED:	06/16/2023
		COLLECTION DATE:	6/14/2023 5:05:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	06/21/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	06/21/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	77.5	06/21/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	6/23/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23060093
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23060093-12
CLIENT SAMPLE ID	S2-AU_06142023	DATE RECEIVED:	06/16/2023
		COLLECTION DATE:	6/14/2023 5:15:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	06/21/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	06/21/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	77.4	06/21/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	6/23/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23060093
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23060093-13
CLIENT SAMPLE ID	S2-BD_06152023	DATE RECEIVED:	06/16/2023
		COLLECTION DATE:	6/15/2023 9:05:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	06/21/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	06/21/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	73.0	06/21/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	6/23/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23060093
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23060093-14
CLIENT SAMPLE ID	S2-BU_06152023	DATE RECEIVED:	06/16/2023
		COLLECTION DATE:	6/15/2023 9:05:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	330	100	1	UG/L	06/21/2023	DHM
TPH-Oil Range	NWTPH-DX	130 UB	100	1	UG/L	06/21/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	85.4	06/21/2023	DHM

Chromatogram indicates that it is likely that sample contains an unidentified diesel range product and an unidentified oil range product.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	6/23/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23060093
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23060093-15
CLIENT SAMPLE ID	S3-AD_06152023	DATE RECEIVED:	06/16/2023
		COLLECTION DATE:	6/15/2023 10:47:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	06/21/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	06/21/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	84.0	06/21/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	6/23/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23060093
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23060093-16
CLIENT SAMPLE ID	S3-AU_06152023	DATE RECEIVED:	06/16/2023
		COLLECTION DATE:	6/15/2023 10:58:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	210	100	1	UG/L	06/21/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	06/21/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	70.4	06/21/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains an unidentified diesel range product.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	6/23/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23060093
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23060093-17
CLIENT SAMPLE ID	S3-BD_06152023	DATE RECEIVED:	06/16/2023
		COLLECTION DATE:	6/15/2023 11:42:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	06/21/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	06/21/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	78.5	06/21/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	6/23/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23060093
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23060093-18
CLIENT SAMPLE ID	S3-BU_06152023	DATE RECEIVED:	06/16/2023
		COLLECTION DATE:	6/15/2023 11:37:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	06/22/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	06/22/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	82.7	06/22/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	6/23/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23060093
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23060093-19
CLIENT SAMPLE ID	S3-CD_06152023	DATE RECEIVED:	06/16/2023
		COLLECTION DATE:	6/15/2023 12:34:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	06/22/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	06/22/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	77.5	06/22/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	6/23/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23060093
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23060093-20
CLIENT SAMPLE ID	S3-CU_06152023	DATE RECEIVED:	06/16/2023
		COLLECTION DATE:	6/15/2023 12:25:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	06/22/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	06/22/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	73.0	06/22/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	6/23/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23060093
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23060093-21
CLIENT SAMPLE ID	S4-AD_06152023	DATE RECEIVED:	06/16/2023
		COLLECTION DATE:	6/15/2023 1:26:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	06/22/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	06/22/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	66.4	06/22/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	6/23/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23060093
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23060093-22
CLIENT SAMPLE ID	S4-AU_06152023	DATE RECEIVED:	06/16/2023
		COLLECTION DATE:	6/15/2023 1:16:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	06/22/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	06/22/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	78.4	06/22/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	6/23/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23060093
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23060093-23
CLIENT SAMPLE ID	S4-BD_06152023	DATE RECEIVED:	06/16/2023
		COLLECTION DATE:	6/15/2023 1:58:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	06/21/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	06/21/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	113	06/21/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	6/23/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23060093
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23060093-24
CLIENT SAMPLE ID	S4-BU_06152023	DATE RECEIVED:	06/16/2023
		COLLECTION DATE:	6/15/2023 1:55:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	06/21/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	06/21/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	110	06/21/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	6/23/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23060093
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23060093-25
CLIENT SAMPLE ID	S4-CD_06152023	DATE RECEIVED:	06/16/2023
		COLLECTION DATE:	6/15/2023 2:32:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	06/22/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	06/22/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	113	06/22/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	6/23/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23060093
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23060093-26
CLIENT SAMPLE ID	S4-CU_06152023	DATE RECEIVED:	06/16/2023
		COLLECTION DATE:	6/15/2023 2:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	06/22/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	06/22/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	105	06/22/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	6/23/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23060093
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23060093-27
CLIENT SAMPLE ID	2A-W-40_06142023	DATE RECEIVED:	06/16/2023
		COLLECTION DATE:	6/14/2023 11:16:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	06/22/2023	DHM
TPH-Oil Range	NWTPH-DX	120 UB	100	1	UG/L	06/22/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	109	06/22/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains an unidentified oil range product.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	6/23/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23060093
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23060093-28
CLIENT SAMPLE ID	2A-W-41_06142023	DATE RECEIVED:	06/16/2023
		COLLECTION DATE:	6/14/2023 12:22:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	250	50	1	UG/L	06/22/2023	DHM
TPH-Diesel Range	NWTPH-DX w/SGA	95	50	1	UG/L	06/23/2023	DHM
TPH-Oil Range	NWTPH-DX	120 UB	100	1	UG/L	06/22/2023	DHM
TPH-Oil Range	NWTPH-DX w/SGA	U	100	1	UG/L	06/23/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	112	06/22/2023	DHM
C25	NWTPH-DX w/SGA	99.2	06/23/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.
 Chromatogram indicates that it is likely that sample contains an unidentified diesel range product and an unidentified oil range product.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	6/23/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23060093
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23060093-29
CLIENT SAMPLE ID	2A-W-42_06142023	DATE RECEIVED:	06/16/2023
		COLLECTION DATE:	6/14/2023 1:50:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	110	100	1	UG/L	06/22/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	06/22/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	117	06/22/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains an unidentified diesel range product.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	6/23/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23060093
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23060093-30
CLIENT SAMPLE ID	1B-W-23_06152023	DATE RECEIVED:	06/16/2023
		COLLECTION DATE:	6/15/2023 11:10:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	06/22/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	06/22/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	116	06/22/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	6/23/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23060093
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23060093-31
CLIENT SAMPLE ID	5-W-43_06142023	DATE RECEIVED:	06/16/2023
		COLLECTION DATE:	6/14/2023 10:00:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	06/22/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	06/22/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	95.2	06/22/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	6/23/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23060093
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23060093-32
CLIENT SAMPLE ID	EB_06152023	DATE RECEIVED:	06/16/2023
		COLLECTION DATE:	6/15/2023 3:06:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	06/22/2023	DHM
TPH-Oil Range	NWTPH-DX	110	100	1	UG/L	06/22/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	98.4	06/22/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains an unidentified oil range product.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	6/23/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23060093
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23060093-33
CLIENT SAMPLE ID	FD-1_06142023	DATE RECEIVED:	06/16/2023
		COLLECTION DATE:	6/14/2023
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	06/22/2023	DHM
TPH-Oil Range	NWTPH-DX	150 UB	100	1	UG/L	06/22/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	101	06/22/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.
 Chromatogram indicates that it is likely that sample contains an unidentified oil range product.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	6/23/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23060093
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23060093-34
CLIENT SAMPLE ID	FD-2_06152023	DATE RECEIVED:	06/16/2023
		COLLECTION DATE:	6/15/2023
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	06/22/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	06/22/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	115	06/22/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, WA 98101	DATE:	6/23/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23060093
CLIENT PROJECT:	BNSF Skykomish	ALS SAMPLE#:	EV23060093-35
CLIENT SAMPLE ID	FD-3_06152023	DATE RECEIVED:	06/16/2023
		COLLECTION DATE:	6/15/2023
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	100	1	UG/L	06/22/2023	DHM
TPH-Oil Range	NWTPH-DX	U	100	1	UG/L	06/22/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	111	06/22/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

BNSF Skykomish

DATA REVIEW

Skykomish, Washington

Total Petroleum Hydrocarbon (TPH) Analyses

SDG #: EV23100004

Analyses Performed By:
ALS Environmental
Everett, Washington

Report #: 52032R
Project: 30159458.02

1 Summary

This data quality assessment summarizes the review of Sample Delivery Group (SDG) # EV23100004 for samples collected in association with the BNSF Skykomish, Washington. The review was conducted as a Tier II evaluation and included review of data package completeness. Only analytical data as reported by the laboratory 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 records. Analyses were performed on the following samples:

Sample ID	Lab ID	Matrix	Sample Collection Date	Parent Sample	Analysis
					TPH
GW-2_092823	EV23100004-01	Water	09/28/2023		X
GW-3_092723	EV23100004-02	Water	09/27/2023		X
GW-4_092723	EV23100004-03	Water	09/27/2023		X
EW-1_092823	EV23100004-04	Water	09/28/2023		X
EW-2A_092723	EV23100004-05	Water	09/27/2023		X
S1-AD_092823	EV23100004-06	Water	09/28/2023		X
S1-AU_092823	EV23100004-07	Water	09/28/2023		X
S1-BD_092823	EV23100004-08	Water	09/28/2023		X
S1-BU_092823	EV23100004-09	Water	09/28/2023		X
S2-AD_092923	EV23100004-10	Water	09/29/2023		X
S2-AU_092923	EV23100004-11	Water	09/29/2023		X
S2-BD_092923	EV23100004-12	Water	09/29/2023		X
S2-BU_092923 MS/MSD	EV23100004-13	Water	09/29/2023		X
S3-AD_092723	EV23100004-14	Water	09/27/2023		X
S3-AU_092723	EV23100004-15	Water	09/27/2023		X
S3-BD_092823	EV23100004-16	Water	09/28/2023		X
S3-BU_092823	EV23100004-17	Water	09/28/2023		X
S3-CD_092723	EV23100004-18	Water	09/27/2023		X
S3-CU_092723 MS/MD	EV23100004-19	Water	09/27/2023		X
S4-AD_092723	EV23100004-20	Water	09/27/2023		X
S4-AU_092723	EV23100004-21	Water	09/27/2023		X
S4-BD_092723	EV23100004-22	Water	09/27/2023		X
S4-BU_092723	EV23100004-23	Water	09/27/2023		X
S4-CD_092723	EV23100004-24	Water	09/27/2023		X
S4-CU_092723	EV23100004-25	Water	09/27/2023		X
5-W-14_092623	EV23100004-26	Water	09/26/2023		X
5-W-16_092623	EV23100004-27	Water	09/26/2023		X
5-W-17_092923	EV23100004-28	Water	09/29/2023		X

Sample ID	Lab ID	Matrix	Sample Collection Date	Parent Sample	Analysis
					TPH
5-W-18_092923	EV23100004-29	Water	09/29/2023		X
5-W-19_092923	EV23100004-30	Water	09/29/2023		X
5-W-51_092923	EV23100004-31	Water	09/29/2023		X
5-W-55_092823	EV23100004-32	Water	09/28/2023		X
5-W-56_092823	EV23100004-33	Water	09/28/2023		X
FD-3_092923	EV23100004-34	Water	09/29/2023	5-W-51_092923	X
2A-W-40_092823	EV23100004-35	Water	09/28/2023		X
2A-W-41_092823	EV23100004-36	Water	09/28/2023		X
2A-W-42_092823	EV23100004-37	Water	09/28/2023		X
1B-W-23_092723	EV23100004-38	Water	09/27/2023		X
1C-W-7_092723	EV23100004-39	Water	09/27/2023		X
1C-W-8_092723	EV23100004-40	Water	09/27/2023		X
5-W-43_092923	EV23100004-41	Water	09/29/2023		X
MW-4_092923	EV23100004-42	Water	09/29/2023		X
FD-1_092723	EV23100004-43	Water	09/27/2023	S3-CU_092723 MS/MD	X
EB-1_092723	EV23100004-44	Water	09/27/2023		X
FD-2_092723	EV23100004-45	Water	09/27/2023		X
FD-4_092923	EV23100004-46	Water	09/29/2023	5-W-43_092923	X

Note:

TPH = Total Petroleum Hydrocarbons

Sample FD-2_092723 is a field duplicate sample. The parent sample could not be identified.

2 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 Quality Assurance (QA) or sample problems provided		X		X	
12. Data Package Completeness and Compliance		X		X	

Note:

6. Sample ID mismatch observed between chain of custody and analysis report. Details are presented in the following table. Field sample id was considered as per chain of custody.

Field Sample ID on COC	Field Sample ID on Analysis Report
FD-2_092723	FD-2_092923

10. The Sample Receiving Checklist notes that there was disagreement between the collection times listed on the sample labels and chain of custody. The samples were logged in using the times listed on the chain of custody.

3 Organic Analysis Introduction

Analyses were performed according to United States Environmental Protection Agency (USEPA) Method NWTPH-DX. Data were reviewed in accordance with USEPA CLP National Functional Guidelines for Organic Superfund Methods Data Review, document number 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 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 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.

4 Total Petroleum Hydrocarbons (TPH) Analyses

4.1 Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
NWTPH-DX	Water	14 days from collection to extraction and 40 days from extraction to analysis (preserved) 7 days from collection to extraction and 40 days from extraction to analysis (Unpreserved)	Cool to <6 °C

All samples were analyzed within the specified holding time criteria.

4.2 Blank Contamination

Quality assurance (QA) blanks (i.e. laboratory method blanks and equipment 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 also 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.

4.3 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 samples exhibited surrogate recoveries within the control limits with the exceptions noted below.

Sample ID	Surrogate	Recovery
2A-W-41_092823	C25 (NWTPH-DX w/ SGA)	> UL

Note:

UL = upper control 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
	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.

4.4 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 samples 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 samples S2-BU_092923 and S3-CU_092723. MS/MSD analysis exhibited recoveries and RPDs within the control limits with the exceptions noted below.

Sample ID	Compound	MS Recovery	MSD Recovery
S2-BU_092923	TPH-Diesel Range	>UL	>UL

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

Control Limit	Sample Result	Qualification
Parent sample concentration > four times the MS/MSD spiking solution concentration.	Detect	No Action
	Non-detect	

4.5 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. The RPD between the LCS and LCSD results must be within the laboratory-established acceptance limits.

All compounds associated with the LCS/LCSD analyses exhibited recoveries and RPDs within the control limits.

4.6 Field Duplicate Sample Analysis

The field duplicate sample analysis is used to assess the precision of the field sampling procedures and analytical method. The control limit of 30% for water matrices and 50% for soil matrices is applied to the RPD between the parent sample and the field duplicate sample results. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the reporting limit (RL), a control limit of two times the RL for water matrices or three times the RL for soil matrices is applied to the difference between the results.

Results for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compound	Sample Result (UG/L)	Duplicate Result (UG/L)	RPD
S3-CU_092723 MS/MD / FD-1_092723	TPH-Diesel Range	100 U	100	AC
	TPH-Oil Range	100 U	220	AC
5-W-51_092923 / FD-3_092923	TPH-Diesel Range	530	590	10.7%
	TPH-Oil Range	220	290	AC
5-W-43_092923 / FD-4_092923	All compounds	U	U	AC

Notes:

AC = acceptable

U = non-detect

The calculated RPDs between the parent sample and field duplicate were acceptable.

4.7 Compound Identification

The retention times of all quantitated peaks must fall within the calculated retention time windows.

All identified compounds met the specified criteria.

4.8 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.

4.9 Data Validation Checklist for Total Petroleum Hydrocarbon (TPH)

TPH: NWTPH-DX	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Gas Chromatography/Flame- and Photo- Ionization Detectors (GC/FID/PID)					
Tier II Validation					
Holding Times/Preservation		X		X	
Reporting Limits (Units)		X		X	
Blanks					
A. Method Blanks		X		X	
B. Trip Blanks	X				X
C. Equipment Blanks		X		X	
Surrogates Accuracy (%R)		X	X		
Matrix Spike (MS) %R		X	X		
Matrix Spike Duplicate (MSD) %R		X	X		
MS/MSD Precision (RPD)		X		X	
Laboratory Control Sample (LCS) %R		X		X	
Laboratory Control Sample Duplicate (LCSD) %R		X		X	
LCS/LCSD RPD		X		X	
Laboratory Duplicate Sample RPD	X				X
Field Duplicate Sample RPD		X		X	
Dilution Factor		X		X	
Moisture Content	X				X

Notes:

%R - percent recovery

RPD - relative percent difference

Validation Performed By: Hareesha Naik

Signature: *Hareesha Naik*

Date: November 28, 2023

Peer Review: Jennifer Singer

Date: November 29, 2023



Cincinnati, OH
+1 513 733 5336

Fort Collins, CO
+1 970 490 1511

Chain of Custody Form

Houston, TX
+1 281 530 5656

Spring City, PA
+1 610 948 4903

South Charleston, WV
+1 304 356 3168

Everett, WA
+1 425 356 2600

Holland, MI
+1 616 399 6070

Page 1 of 5

Middletown, PA
+1 717 944 5541

Salt Lake City, UT
+1 801 266 7700

York, PA
+1 717 505 5280

COC ID: **289093**

EV2310004

Customer Information				Project Information				ALS Project Manager:										ALS Work Order #:	
Customer Information				Project Information				Parameter/Method Request for Analysis											
Purchase Order		Project Name	BNSF Skykomish PN 30159457.01	A	210_DX_W														
Work Order		Project Number		B															
Company Name	Arcadis U.S., Inc.	Bill To Company	Arcadis U.S., Inc.	C	210_DXSGA_W														
Send Report To	Michelle Nguyen	Invoice Attn	Accounts Payable	D															
Address	1420 - 5th Ave Unit 2400	Address	630 Plaza Drive Suite 600	E															
				F															
City/State/Zip	Seattle, WA 98101	City/State/Zip	Highlands Ranch CO 80129	G															
Phone	(206) 325-5254	Phone	(303) 471-3699	H															
Fax	(206) .32-5.82	Fax		I															
e-Mail Address	Michelle.Nguyen@arcadis.com	e-Mail Address	invoices_us@arcadis.com	J															
No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold		
1	GW1 NOT SAMPLED			Water	1	1	X												
2	GW2_092823	9/28/23	14:05	Water	1	1	X								-	1			
3	GW3_092723	17:55	9/27/23	Water	1	2	X		X						-	2			
4	GW4_092723	9/27/23	12:30	Water	1	1	X								-	3			
5	EW1_092823	9/28/23	16:42	Water	1	1	X								-	4			
6	EW2A_092723	9/27/23	13:50	Water	1	1	X								-	5			
7	S1-AD_092823	9/28/23	17:25	Water	1	1	X								-	6			
8	S1-AU_092823	9/28/23	17:25	Water	1	1	X								-	7			
9	S1-BD_092823	9/28/23	17:50	Water	1	1	X								-	8			
10	S1-BU_092823	9/28/23	17:55	Water	1	1	X								-	9			
Sampler(s) Please Print & Sign		Shipment Method		Required Turnaround Time: (Check Box)				Other				Results Due Date:							
Kyle Johnson <i>Kyle Johnson</i>		Drop off		<input checked="" type="checkbox"/> STD 10 Wk Days				<input type="checkbox"/> 5 Wk Days				<input type="checkbox"/> 2 Wk Days <input type="checkbox"/> 24 Hour							
Relinquished by:	Date:	Time:	Received by:	Notes:															
Kyle Johnson	10/2/23	1220	<i>AKJ</i>	10/2/23 12:20															
Relinquished by:	Date:	Time:	Received by (Laboratory):	Cooler ID	Cooler Temp.	QC Package: (Check One Box Below)													
			<i>AKJ</i>			<input checked="" type="checkbox"/> Level II Std QC	<input type="checkbox"/> TRRP Checklist												
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):			<input type="checkbox"/> Level III Std QC/Raw Date	<input type="checkbox"/> TRRP Level IV												
						<input type="checkbox"/> Level IV SWB48/CLP													
Preservative Key: 1-HCl 2-HNO ₃ 3-H ₂ SO ₄ 4-NaOH 5-Na ₂ S ₂ O ₃ 6-NaHSO ₄ 7-Other 8-4°C 9-5035						<input type="checkbox"/> Other													

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
 2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
 3. The Chain of Custody is a legal document. All information must be completed accurately.



Cincinnati, OH
+1 513 733 5336

Everett, WA
+1 425 356 2600

Fort Collins, CO
+1 970 490 1511

Holland, MI
+1 616 399 6070

Chain of Custody Form

Houston, TX
+1 281 530 5656

Middletown, PA
+1 717 944 5541

Spring City, PA
+1 610 948 4903

Salt Lake City, UT
+1 801 266 7700

South Charleston, WV
+1 304 356 3168

York, PA
+1 717 505 5280

Page 2 of 5

COC ID: **289092**

EN2300004

Customer Information		ALS Project Manager:				ALS Work Order #:	
Project Information		Parameter/Method Request for Analysis					
Purchase Order	Project Name	BNSF Skykomish PN 30159457.01	A	210_DX_W			
Work Order	Project Number		B				
Company Name	Bill To Company	Arcadis U.S., Inc.	C	210_DXSGA_W			
Send Report To	Invoice Attn	Accounts Payable	D				
Address	Address	630 Plaza Drive	E				
		Suite 600	F				
City/State/Zip	City/State/Zip	Highlands Ranch CO 80129	G				
Phone	Phone	(303) 471-3699	H				
Fax	Fax		I				
e-Mail Address	e-Mail Address	invoices_us@arcadis.com	J				

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	S2-AD - 092923	9/29/23	1542	Water	1	1	X										
2	S2-AU - 092923	9/29/23	1518	Water	1	1	X										
3	S2-BD - 092923	9/29/23	1242	Water	1	1	X										
4	S2-BU - 092823 ^{KJ} 092923 ^{MS/MSD}	9/29/23	1203	Water	1	1	X										
5	S3-AD - 092723	9/27/23	16:51	Water	1	1	X										
6	S3-AU - 092723	9/27/23	16:26	Water	1	1	X										
7	S3-BD - 092823	9/28/23	09:30	Water	1	1	X										
8	S3-BU - 092823	9/28/23	1045	Water	1	1	X										
9	S3-CD - 092723	9/27/23	1555	Water	1	1	X										
10	S3-CU - 092723 MS/MSD	9/27/23	16:25	Water	1	3	X										

Sampler(s) Please Print & Sign <i>Kyle Johnson</i>		Shipment Method <i>dropped off</i>		Required Turnaround Time: (Check Box)			Results Due Date:	
				<input checked="" type="checkbox"/> STD 10 Wk Days	<input type="checkbox"/> 5 Wk Days	<input type="checkbox"/> 2 Wk Days	<input type="checkbox"/> 24 Hour	
Relinquished by:	Date:	Time:	Received by:	Notes:				
<i>Kyle Johnson</i>	<i>10/2/23</i>	<i>1220</i>	<i>[Signature]</i>	<i>ok lbs 12:30</i>				
Relinquished by:	Date:	Time:	Received by (Laboratory):	Cooler ID	Cooler Temp.	QC Package: (Check One Box Below)		
			<i>ALS Everett</i>			<input checked="" type="checkbox"/> Level II Std QC	<input type="checkbox"/> TRRP Checklist	
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):			<input type="checkbox"/> Level III Std QC/Raw Date	<input type="checkbox"/> TRRP Level IV	
						<input type="checkbox"/> Level IV SWB4/CLP		
Preservative Key: 1-HCl 2-HNO ₃ 3-H ₂ SO ₄ 4-NaOH 5-Na ₂ S ₂ O ₃ 6-NaHSO ₄ 7-Other 8-4°C 9-5035								

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
 2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
 3. The Chain of Custody is a legal document. All information must be completed accurately.



Cincinnati, OH
+1 513 733 5336

Fort Collins, CO
+1 970 490 1511

Chain of Custody Form

Houston, TX
+1 281 530 5656

Spring City, PA
+1 610 948 4903

South Charleston, WV
+1 304 356 3168

Everett, WA
+1 425 356 2600

Holland, MI
+1 616 399 6070

Page 3 of 5

Middletown, PA
+1 717 944 5541

Salt Lake City, UT
+1 801 266 7700

York, PA
+1 717 505 5280

COC ID: **289091**

EV23100004

Customer Information		Project Information		ALS Project Manager:		ALS Work Order #:	
Purchase Order		Project Name	BNSF Skykomish P'N 30159457.01	A	210_DX_W		
Work Order		Project Number		B			
Company Name	Arcadis U.S., Inc.	Bill To Company	Arcadis U.S., Inc.	C	210_DXSGA_W		
Send Report To	Michelle Nguyen	Invoice Attn	Accounts Payable	D			
Address	1420 - 5th Ave Unit 2400	Address	630 Plaza Drive Suite 600	E			
				F			
City/State/Zip	Seattle, WA 98101	City/State/Zip	Highlands Ranch CO 80129	G			
Phone	(206) 325-5254	Phone	(303) 471-3699	H			
Fax	(206) .32-5.82	Fax		I			
e-Mail Address	Michelle.Nguyen@arcadis.com	e-Mail Address	invoices_us@arcadis.com	J			

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold	
20	1 S4-AD -092723	9/27/23	09:28	Water	1	1	X											
21	2 S4-AU -092723	9/27/23	10:24	Water	1	1	X											-20
22	3 S4-BD -092723	9/27/23	11:37	Water	1	1	X											-21
23	4 S4-BU -092723	9/27/23	13:10	Water	1	1	X											-22
24	5 S4-CD -092723	9/27/23	9:35	Water	1	1	X											-23
25	6 S4-CU -092723	9/27/23	10:30	Water	1	1	X											-24
26	7 5-W-14 -092623	9/26/23	15:08	Water	1	1	X											-25
27	8 5-W-16 -092623	9/26/23	17:00	Water	1	1	X											-26
28	9 5-W-17 -092923	9/29/23	11:10	Water	1	1	X											-27
29	10 5-W-18 -092923	9/29/23	11:55	Water	1	1	X											-28

Sampler(s) Please Print & Sign <i>Kyle Johnson</i>		Shipment Method <i>drop off</i>		Required Turnaround Time: (Check Box) <input checked="" type="checkbox"/> STD 10 Wk Days <input type="checkbox"/> 5 Wk Days <input type="checkbox"/> 2Wk: Days <input type="checkbox"/> 24 Hour				Results Due Date:			
Relinquished by: <i>Kyle Johnson</i>	Date: <i>10/2/23</i>	Time: <i>12:20</i>	Received by: <i>[Signature]</i>	Notes:							
Relinquished by:	Date:	Time:	Received by (Laboratory): <i>ALS Everett</i>	Cooler ID	Cooler Temp.	QC Package: (Check One Box Below)					
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):			<input checked="" type="checkbox"/> Level II Std QC	<input type="checkbox"/> TRRP Checklist				
Preservative Key: 1-HCl 2-HNO ₃ 3-H ₂ SO ₄ 4-NaOH 5-Na ₂ S ₂ O ₃ 6-NaHSO ₄ 7-Other 8-4°C 9-5035						<input type="checkbox"/> Level III Std QC/Raw Date	<input type="checkbox"/> TRRP Level IV				
						<input type="checkbox"/> Level IV SWB4/CLP					
						<input type="checkbox"/> Other					

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
 2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
 3. The Chain of Custody is a legal document. All information must be completed accurately.



Cincinnati, OH
+1 513 733 5336

Everett, WA
+1 425 356 2600

Fort Collins, CO
+1 970 490 1511

Holland, MI
+1 616 399 6070

Chain of Custody Form

Houston, TX
+1 281 530 5656

Middletown, PA
+1 717 944 5541

Spring City, PA
+1 610 948 4903

Salt Lake City, UT
+1 801 266 7700

South Charleston, WV
+1 304 356 3168

York, PA
+1 717 505 5280

Page 4 of 5

COC ID: **289090**

EV23100004

ALS Project Manager:		ALS Work Order #:	
Customer Information		Project Information	
Purchase Order		Project Name	BNSF Skykomish PN 30159457.01
Work Order		Project Number	
Company Name	Arcadis U.S., Inc.	Bill To Company	Arcadis U.S., Inc.
Send Report To	Michelle Nguyen	Invoice Attn	Accounts Payable
Address	1420 - 5th Ave Unit 2400	Address	630 Plaza Drive Suite 600
Phone	(206) 325-5254	Phone	(303) 471-3699
Fax	(206) .32-5.82	Fax	
e-Mail Address	Michelle.Nguyen@arcadis.com	e-Mail Address	invoices_us@arcadis.com

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
30	5-W-19 - 092923	9/29/23	12:40	Water	1	1	X										
31	5-W-51 - 092923	9/29/23	10:30	Water	1	1	X										
32	5-W-55 - 092823	9/28/23	15:50	Water	1	1	X										
33	5-W-56 - 092823	9/28/23	15:30	Water	1	1	X										
34	2A-W-9 ^{KJ} _{9/29} FD-3-092923	9/29/23		Water	1	1	X										
35	2A-W-40 - 092823	9/28/23	13:02	Water	1	1	X										
36	2A-W-41 - 092823	9/28/23	11:05	Water	1	1	X		X								
37	2A-W-42 - 092823	9/28/23	10:01	Water	1	1	X										
38	1B-W-23 - 092723	9/27/23	17:30	Water	1	1	X										
39	4C-W-4 NOT SAMPLED			Water	1	1	X										

Sampler(s) Please Print & Sign <i>Kyle Johnson</i>		Shipment Method <i>drop off</i>		Required Turnaround Time: (Check Box)		Results Due Date:	
				<input checked="" type="checkbox"/> STD 10 Wk Days		<input type="checkbox"/> 5 Wk Days	
				<input type="checkbox"/> 2 Wk Days		<input type="checkbox"/> 24 Hour	
Relinquished by: <i>Kyle Johnson</i>	Date: <i>10/2/23</i>	Time: <i>12:20</i>	Received by: <i>[Signature]</i>	Notes: <i>pkls 12:30</i>			
Relinquished by:	Date:	Time:	Received by (Laboratory): <i>ALS Evans</i>	Cooler ID	Cooler Temp.	QC Package: (Check One Box Below)	
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):			<input checked="" type="checkbox"/> Level II Std QC	<input type="checkbox"/> TRRP Checklist
						<input type="checkbox"/> Level III Std QC/Raw Date	<input type="checkbox"/> TRRP Level IV
						<input type="checkbox"/> Level IV SWB46/CLP	
						<input type="checkbox"/> Other	



Cincinnati, OH
+1 513 733 5336

Fort Collins, CO
+1 970 490 1511

Chain of Custody Form

Houston, TX
+1 281 530 5656

Spring City, PA
+1 610 948 4903

South Charleston, WV
+1 304 356 3168

Everett, WA
+1 425 356 2600

Holland, MI
+1 616 399 6070

Page 5 of 5

Middletown, PA
+1 717 944 5541

Salt Lake City, UT
+1 801 266 7700

York, PA
+1 717 505 5280

COC ID: **289089**

EV23100004

Customer Information		Project Information		ALS Project Manager:		ALS Work Order #:	
Purchase Order		Project Name	BNSF Skykomish PN 30159457.01	A	210_DX_W		
Work Order		Project Number		B			
Company Name	Arcadis U.S., Inc.	Bill To Company	Arcadis U.S., Inc.	C	210_DXSGA_W		
Send Report To	Michelle Nguyen	Invoice Attn	Accounts Payable	D			
Address	1420 - 5th Ave Unit 2400	Address	630 Plaza Drive Suite 600	E	Total Metals 200.8 KJ 9/29		
				F			
City/State/Zip	Seattle, WA 98101	City/State/Zip	Highlands Ranch CO 80129	G			
Phone	(206) 325-5254	Phone	(303) 471-3699	H			
Fax	(206) .32-5.82	Fax		I			
e-Mail Address	Michelle.Nguyen@arcadis.com	e-Mail Address	invoices_us@arcadis.com	J			

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	1C-W7 - 092723	9/27/23	13:00	Water	1	1	X										-39
2	1C-W8 - 092723	9/27/23	14:45	Water	1	1	X										-40
3	5-W43 - 092923	9/29/23	11:30	Water	1	1	X										-41
4	MW4 - 092923	9/29/23	16:03	Water	1	1	X										-42
5	FD-1 - 092723	9/27/23		Water	1	1	X										-43
6	EB-1 - 092723	9/27/23	17:10	Water	1	1	X										-44
7	T-05 - 09262023	9/26/23	15:00	Water	1,2	3	X				X						KJ 9/29
8	T-03 - 09262023	9/26/23	14:40	Water	1,2	3	X				X						KJ 9/29
9	FD-2 - 092723	9/27/23		water	1	1	X										-45
10	FD-4 - 092923	9/29/23		water	1	1	X										-46

Sampler(s) Please Print & Sign <i>Kyle Johnson</i>		Shipment Method <i>drop off</i>		Required Turnaround Time: (Check Box) <input checked="" type="checkbox"/> STD 10 Wk Days <input type="checkbox"/> 5 Wk Days <input type="checkbox"/> 2Wk Days <input type="checkbox"/> 24 Hour			Results Due Date:		
Relinquished by: <i>Kyle Johnson</i>	Date: <i>10/2/23</i>	Time: <i>1228</i>	Received by: <i>[Signature]</i>	Notes: <i>10/2/23 12:28pm</i>					
Relinquished by:	Date:	Time:	Received by (Laboratory): <i>ALS Everett</i>	Cooler ID	Cooler Temp.	QC Package: (Check One Box Below)			
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):			<input checked="" type="checkbox"/> Level II Std QC	<input type="checkbox"/> TRRP Checklist		
Preservative Key: 1-HCl 2-HNO ₃ 3-H ₂ SO ₄ 4-NaOH 5-Na ₂ S ₂ O ₃ 6-NaHSO ₄ 7-Other 8-4°C 9-5035						<input type="checkbox"/> Level III Std QC/Raw Date	<input type="checkbox"/> TRRP Level IV		
						<input type="checkbox"/> Level IV SW846/CLP			
						<input type="checkbox"/> Other			

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
 2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
 3. The Chain of Custody is a legal document. All information must be completed accurately.



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-01
CLIENT SAMPLE ID	GW-2_092823	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/28/2023 2:05:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	10/09/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	10/09/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	93.8	10/09/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-02
CLIENT SAMPLE ID	GW-3_092723	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/27/2023 5:55:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	250	100	1	UG/L	10/09/2023	DHM
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX w/ SGA	110	100	1	UG/L	10/16/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	10/09/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX w/ SGA	U	100	1	UG/L	10/16/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	90.4	10/09/2023	DHM
C25 CAS: 629-99-2	NWTPH-DX w/ SGA	101	10/16/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains highly weathered diesel.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-03
CLIENT SAMPLE ID	GW-4_092723	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/27/2023 12:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	130	100	1	UG/L	10/09/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	690	100	1	UG/L	10/09/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	93.8	10/09/2023	DHM

Chromatogram indicates that it is likely that sample contains an unidentified diesel range product and an unidentified oil range product.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-04
CLIENT SAMPLE ID	EW-1_092823	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/28/2023 4:42:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	10/09/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	10/09/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	95.0	10/09/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-05
CLIENT SAMPLE ID	EW-2A_092723	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/27/2023 1:50:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	10/09/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	250	100	1	UG/L	10/09/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	115	10/09/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains an unidentified oil range product.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-06
CLIENT SAMPLE ID	S1-AD_092823	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/28/2023 5:25:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	10/09/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	10/09/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	93.0	10/09/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-07
CLIENT SAMPLE ID	S1-AU_092823	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/28/2023 5:25:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	10/09/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	10/09/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	82.6	10/09/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-08
CLIENT SAMPLE ID	S1-BD_092823	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/28/2023 5:50:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	10/09/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	10/09/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	93.3	10/09/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-09
CLIENT SAMPLE ID	S1-BU_092823	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/28/2023 5:55:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	10/09/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	10/09/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	86.3	10/09/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
		ALS JOB#:	EV23100004
CLIENT CONTACT:	Michelle Nguyen	ALS SAMPLE#:	EV23100004-10
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	DATE RECEIVED:	10/02/2023
CLIENT SAMPLE ID	S2-AD_092923	COLLECTION DATE:	9/29/2023 3:42:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	10/09/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	10/09/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	96.9	10/09/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-11
CLIENT SAMPLE ID	S2-AU_092923	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/29/2023 3:18:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	10/09/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	10/09/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	94.5	10/09/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-12
CLIENT SAMPLE ID	S2-BD_092923	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/29/2023 12:42:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	10/09/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	140	100	1	UG/L	10/09/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	93.7	10/09/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains an unidentified oil range product.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-13
CLIENT SAMPLE ID	S2-BU_092923 MS/MSD	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/29/2023 12:03:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	1000 J	100	1	UG/L	10/09/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	200	100	1	UG/L	10/09/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	97.6	10/09/2023	DHM

Chromatogram indicates that it is likely that sample contains weathered diesel and an unidentified oil range product.
Oil range product results biased high due to diesel range product overlap.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-14
CLIENT SAMPLE ID	S3-AD_092723	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/27/2023 4:51:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	10/09/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	10/09/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	92.8	10/09/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-15
CLIENT SAMPLE ID	S3-AU_092723	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/27/2023 4:26:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	10/09/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	10/09/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	95.0	10/09/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-16
CLIENT SAMPLE ID	S3-BD_092823	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/28/2023 9:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	10/09/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	10/09/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	91.7	10/09/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-17
CLIENT SAMPLE ID	S3-BU_092823	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/28/2023 10:45:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	10/09/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	10/09/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	97.7	10/09/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-18
CLIENT SAMPLE ID	S3-CD_092723	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/27/2023 3:55:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	10/09/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	10/09/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	100	10/09/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-19
CLIENT SAMPLE ID	S3-CU_092723 MS/MD	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/27/2023 4:25:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	10/09/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	10/09/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	95.1	10/09/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-20
CLIENT SAMPLE ID	S4-AD_092723	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/27/2023 9:28:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	10/09/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	10/09/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	100	10/09/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-21
CLIENT SAMPLE ID	S4-AU_092723	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/27/2023 10:24:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	10/09/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	10/09/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	95.9	10/09/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-22
CLIENT SAMPLE ID	S4-BD_092723	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/27/2023 11:37:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	10/09/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	10/09/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	101	10/09/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-23
CLIENT SAMPLE ID	S4-BU_092723	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/27/2023 1:10:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	10/09/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	10/09/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	97.2	10/09/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-24
CLIENT SAMPLE ID	S4-CD_092723	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/27/2023 9:35:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	10/09/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	10/09/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	105	10/09/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-25
CLIENT SAMPLE ID	S4-CU_092723	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/27/2023 10:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	10/09/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	10/09/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	95.1	10/09/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-26
CLIENT SAMPLE ID	5-W-14_092623	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/26/2023 3:08:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	10/10/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	10/10/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	98.4	10/10/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-27
CLIENT SAMPLE ID	5-W-16_092623	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/26/2023 5:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	10/10/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	10/10/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	100	10/10/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-28
CLIENT SAMPLE ID	5-W-17_092923	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/29/2023 11:10:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	10/10/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	10/10/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	98.0	10/10/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-29
CLIENT SAMPLE ID	5-W-18_092923	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/29/2023 11:55:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	10/10/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	10/10/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	103	10/10/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-30
CLIENT SAMPLE ID	5-W-19_092923	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/29/2023 12:40:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	10/10/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	10/10/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	97.0	10/10/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-31
CLIENT SAMPLE ID	5-W-51_092923	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/29/2023 10:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	530	100	1	UG/L	10/10/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	220	100	1	UG/L	10/10/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	98.6	10/10/2023	DHM

Chromatogram indicates that it is likely that sample contains highly weathered diesel and an unidentified oil range product. Oil range product results biased high due to diesel range product overlap.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-32
CLIENT SAMPLE ID	5-W-55_092823	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/28/2023 3:50:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	10/10/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	10/10/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	97.1	10/10/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-33
CLIENT SAMPLE ID	5-W-56_092823	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/28/2023 3:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	1400	100	1	UG/L	10/10/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	710	100	1	UG/L	10/10/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	81.2	10/10/2023	DHM

Chromatogram indicates that it is likely that sample contains an unidentified diesel range product and an unidentified oil range product.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-34
CLIENT SAMPLE ID	FD-3_092923	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/29/2023
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	590	100	1	UG/L	10/10/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	290	100	1	UG/L	10/10/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	100	10/10/2023	DHM

Chromatogram indicates that it is likely that sample contains highly weathered diesel and an unidentified oil range product. Oil range product results biased high due to diesel range product overlap.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-35
CLIENT SAMPLE ID	2A-W-40_092823	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/28/2023 1:02:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	10/10/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	10/10/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	106	10/10/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-36
CLIENT SAMPLE ID	2A-W-41_092823	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/28/2023 11:05:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	400	100	1	UG/L	10/10/2023	DHM
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX w/ SGA	240 J	50	1	UG/L	10/16/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	120	100	1	UG/L	10/10/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX w/ SGA	U	100	1	UG/L	10/16/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	104	10/10/2023	DHM
C25 CAS: 629-99-2	NWTPH-DX w/ SGA	132 SUR11	10/16/2023	DHM

SUR11 - Surrogate outside of control limits due to sporadic marginal failure. No corrective action taken.
 U - Analyte analyzed for but not detected at level above reporting limit.
 Chromatogram indicates that it is likely that sample contains highly weathered diesel and an unidentified oil range product.
 Oil range product results biased high due to diesel range product overlap.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-37
CLIENT SAMPLE ID	2A-W-42_092823	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/28/2023 10:01:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	120	100	1	UG/L	10/10/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	10/10/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	103	10/10/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains an unidentified diesel range product.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-38
CLIENT SAMPLE ID	1B-W-23_092723	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/27/2023 5:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	10/10/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	10/10/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	86.5	10/10/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-39
CLIENT SAMPLE ID	1C-W-7_092723	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/27/2023 1:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	120	100	1	UG/L	10/10/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	10/10/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	97.0	10/10/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains an unidentified diesel range product.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-40
CLIENT SAMPLE ID	1C-W-8_092723	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/27/2023 2:45:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	10/10/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	10/10/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	96.7	10/10/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-41
CLIENT SAMPLE ID	5-W-43_092923	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/29/2023 11:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	10/10/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	10/10/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	93.3	10/10/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-42
CLIENT SAMPLE ID	MW-4_092923	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/29/2023 4:03:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	290	100	1	UG/L	10/10/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	100	100	1	UG/L	10/10/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	95.2	10/10/2023	DHM

Chromatogram indicates that it is likely that sample contains an unidentified diesel range product.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-43
CLIENT SAMPLE ID	FD-1_092723	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/27/2023
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	100	100	1	UG/L	10/10/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	220	100	1	UG/L	10/10/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	115	10/10/2023	DHM

Chromatogram indicates that it is likely that sample contains an unidentified diesel range product and an unidentified oil range product.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-44
CLIENT SAMPLE ID	EB-1_092723	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/27/2023 5:10:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	10/10/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	10/10/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	88.2	10/10/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-45
CLIENT SAMPLE ID	FD-2_092923 FD-2_092723	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/27/2023
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	10/10/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	10/10/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	89.2	10/10/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/16/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23100004
CLIENT PROJECT:	BNSF Skykomish PN 30159457.01	ALS SAMPLE#:	EV23100004-46
CLIENT SAMPLE ID	FD-4_092923	DATE RECEIVED:	10/02/2023
		COLLECTION DATE:	9/29/2023
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	10/10/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	10/10/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	93.2	10/10/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

BNSF Skykomish

DATA REVIEW

Skykomish, Washington

Total Petroleum Hydrocarbon (TPH) Analyses

SDG #: EV23100095

Analyses Performed By:
ALS Environmental
Everett, Washington

Report #: 52033R
Project: 30159458.02

1 Summary

This data quality assessment summarizes the review of Sample Delivery Group (SDG) # EV23100095 for samples collected in association with the BNSF Skykomish, Washington. The review was conducted as a Tier II evaluation and included review of data package completeness. Only analytical data as reported by the laboratory 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 records. Analyses were performed on the following samples:

Sample ID	Lab ID	Matrix	Sample Collection Date	Parent Sample	Analysis
					TPH
GW-1_101723	EV23100095-01	Water	10/17/2023		X
DUP-1	EV23100095-02	Water	10/17/2023	GW-1_101723	X

Note:

TPH = Total Petroleum Hydrocarbons

2 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 Quality Assurance (QA) or sample problems provided		X		X	
12. Data Package Completeness and Compliance		X		X	

3 Organic Analysis Introduction

Analyses were performed according to United States Environmental Protection Agency (USEPA) Method NWTPH-DX. Data were reviewed in accordance with USEPA CLP National Functional Guidelines for Organic Superfund Methods Data Review, document number 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 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 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.

4 Total Petroleum Hydrocarbons (TPH) Analyses

4.1 Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
NWTPH-DX	Water	14 days from collection to extraction and 40 days from extraction to analysis (preserved) 7 days from collection to extraction and 40 days from extraction to analysis (Unpreserved)	Cool to <6 °C

All samples were analyzed within the specified holding time criteria.

4.2 Blank Contamination

Quality assurance (QA) blanks (i.e. laboratory method blanks and equipment 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 also 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.

4.3 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 samples exhibited surrogate recoveries within the control limits.

4.4 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 samples 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 samples from this SDG.

4.5 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 analyses exhibited recoveries within the control limits.

4.6 Field Duplicate Sample Analysis

The field duplicate sample analysis is used to assess the precision of the field sampling procedures and analytical method. The control limit of 30% for water matrices and 50% for soil matrices is applied to the RPD between the parent sample and the field duplicate sample results. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the reporting limit (RL), a control limit of two times the RL for water matrices or three times the RL for soil matrices is applied to the difference between the results.

Results for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compounds	Sample Result (UG/L)	Duplicate Result (UG/L)	RPD
GW-1_101723 / DUP-1	TPH-Diesel Range	150	140	AC
	TPH-Oil Range	110	130	AC

Note:

AC = acceptable

The calculated RPDs between the parent sample and field duplicate were acceptable.

4.7 Compound Identification

The retention times of all quantitated peaks must fall within the calculated retention time windows.

All identified compounds met the specified criteria.

4.8 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.

4.9 Data Validation Checklist for Total Petroleum Hydrocarbon (TPH)

TPH: NWTPH-DX	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Gas Chromatography/Flame- and Photo- Ionization Detectors (GC/FID/PID)					
Tier II Validation					
Holding Times/Preservation		X		X	
Reporting Limits (Units)		X		X	
Blanks					
A. Method Blanks		X		X	
B. Trip Blanks	X				X
C. Equipment Blanks	X				X
Surrogates Accuracy (%R)		X		X	
Matrix Spike (MS) %R	X				X
Matrix Spike Duplicate (MSD) %R	X				X
MS/MSD Precision (RPD)	X				X
Laboratory Control Sample (LCS) %R		X		X	
Laboratory Control Sample Duplicate (LCSD) %R	X				X
LCS/LCSD RPD	X				X
Laboratory Duplicate Sample RPD	X				X
Field Duplicate Sample RPD		X		X	
Dilution Factor		X		X	
Moisture Content	X				X

Notes:

%R = percent recovery

RPD = relative percent difference

Validation Performed By: Hareesha Naik

Signature: *Hareesha Naik*

Date: November 28, 2023

Peer Review: Jennifer Singer

Date: November 29, 2023



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/24/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23100095
CLIENT PROJECT:	30159457	ALS SAMPLE#:	EV23100095-01
CLIENT SAMPLE ID	GW-1_101723	DATE RECEIVED:	10/17/2023
		COLLECTION DATE:	10/17/2023 12:40:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	150	100	1	UG/L	10/23/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	110	100	1	UG/L	10/23/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	100	10/23/2023	DHM

Chromatogram indicates that it is likely that sample contains an unidentified diesel range product and an unidentified oil range product.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	10/24/2023
CLIENT CONTACT:	Kyle Haslam	ALS JOB#:	EV23100095
CLIENT PROJECT:	30159457	ALS SAMPLE#:	EV23100095-02
CLIENT SAMPLE ID	DUP-1	DATE RECEIVED:	10/17/2023
		COLLECTION DATE:	10/17/2023
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	140	100	1	UG/L	10/23/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	130	100	1	UG/L	10/23/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	101	10/23/2023	DHM

Chromatogram indicates that it is likely that sample contains an unidentified diesel range product and an unidentified oil range product.

BNSF Skykomish

DATA REVIEW

Skykomish, Washington

Total Petroleum Hydrocarbon (TPH) Analyses

SDG #: EV23120075

Analyses Performed By:
ALS Environmental
Everett, Washington

Report #: 52456R
Project: 30159458.02

1 Summary

This data quality assessment summarizes the review of Sample Delivery Group (SDG) # EV23120075 for samples collected in association with the BNSF Skykomish, Washington. The review was conducted as a Tier II evaluation and included review of data package completeness. Only analytical data as reported by the laboratory 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 records. Analyses were performed on the following samples:

Sample ID	Lab ID	Matrix	Sample Collection Date	Parent Sample	Analysis
					TPH
GW-1_120523	EV23120075-01	Water	12/05/2023		X
GW-2_120523	EV23120075-02	Water	12/05/2023		X
GW-3_120623	EV23120075-03	Water	12/06/2023		X
EW-1_120623	EV23120075-04	Water	12/06/2023		X
EW-2A_120623	EV23120075-05	Water	12/06/2023		X
S1-AD_120623	EV23120075-06	Water	12/06/2023		X
S1-AU_120623	EV23120075-07	Water	12/06/2023		X
S1-BD_120623	EV23120075-08	Water	12/06/2023		X
S1-BU_120623	EV23120075-09	Water	12/06/2023		X
S2-AD_120623	EV23120075-10	Water	12/06/2023		X
S2-AU_120623	EV23120075-11	Water	12/06/2023		X
S2-BD_120723	EV23120075-12	Water	12/07/2023		X
S2-BU_120723	EV23120075-13	Water	12/07/2023		X
S3-AD_120723	EV23120075-14	Water	12/07/2023		X
S3-AU_120723	EV23120075-15	Water	12/07/2023		X
S3-BD_120723	EV23120075-16	Water	12/07/2023		X
S3-BU_120723	EV23120075-17	Water	12/07/2023		X
S3-CD_120723	EV23120075-18	Water	12/07/2023		X
S3-CU_120723	EV23120075-19	Water	12/07/2023		X
S4-AD_120723	EV23120075-20	Water	12/07/2023		X
S4-AU_120723	EV23120075-21	Water	12/07/2023		X
S4-BD_120723	EV23120075-22	Water	12/07/2023		X
S4-BU_120723	EV23120075-23	Water	12/07/2023		X
S4-CD_120723	EV23120075-24	Water	12/07/2023		X
S4-CU_120723	EV23120075-25	Water	12/07/2023		X
2A-W-40_120623	EV23120075-26	Water	12/06/2023		X
2A-W-41_120623	EV23120075-27	Water	12/06/2023		X
2A-W-42_120623	EV23120075-28	Water	12/06/2023		X

Sample ID	Lab ID	Matrix	Sample Collection Date	Parent Sample	Analysis
					TPH
1B-W-23_120623	EV23120075-29	Water	12/06/2023		X
5-W-43_120523	EV23120075-30	Water	12/05/2023		X
FD-1_120623	EV23120075-31	Water	12/06/2023	2A-W-40_120623	X
FD-2_120623	EV23120075-32	Water	12/06/2023	S2-AD_120623	X
FD-3_120723	EV23120075-33	Water	12/07/2023	S3-BU_120723	X
FD-4_120723	EV23120075-34	Water	12/07/2023	S4-BU_120723	X
EB-1_120823	EV23120075-35	Water	12/08/2023		X

Note:

TPH = Total Petroleum Hydrocarbons

2 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 Quality Assurance (QA) or sample problems provided		X		X	
12. Data Package Completeness and Compliance		X		X	

Note:

10. Sample receiving checklist noted that received two FD1 sample, one on 120623 and other one on 120723. Laboratory labelled the 120723 as the missing FD3 sample.

3 Organic Analysis Introduction

Analyses were performed according to United States Environmental Protection Agency (USEPA) Method NWTPH-DX. Data were reviewed in accordance with USEPA CLP National Functional Guidelines for Organic Superfund Methods Data Review, document number 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 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 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.

4 Total Petroleum Hydrocarbons (TPH) Analyses

4.1 Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
NWTPH-DX	Water	14 days from collection to extraction and 40 days from extraction to analysis (preserved) 7 days from collection to extraction and 40 days from extraction to analysis (Unpreserved)	Cool to <6 °C

All samples were analyzed within the specified holding time criteria.

4.2 Blank Contamination

Quality assurance (QA) blanks (i.e. laboratory method blanks and equipment 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 also 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.

4.3 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 samples exhibited surrogate recoveries within the control limits.

4.4 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 samples 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 samples S1-AU_120623 and S3-CD_120723. MS/MSD analysis exhibited recoveries within the control limits.

Sample locations associated with MS/MSD recoveries exhibiting an RPD greater than the control limit is presented in the following table.

Sample ID	Compound
S3-CD_120723	TPH-Diesel Range

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

4.5 Laboratory Control Sample/ Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS 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 and RPDs within the laboratory-established acceptance limits.

All compounds associated with the LCS/LCSD analyses exhibited recoveries and RPDs within the control limits.

4.6 Field Duplicate Sample Analysis

The field duplicate sample analysis is used to assess the precision of the field sampling procedures and analytical method. The control limit of 30% for water matrices and 50% for soil matrices is applied to the RPD between the parent sample and the field duplicate sample results. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the reporting limit (RL), a control limit of two times the RL for water matrices or three times the RL for soil matrices is applied to the difference between the results.

Results for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compounds	Sample Result (UG/L)	Duplicate Result (UG/L)	RPD
2A-W-40_120623 / FD-1_120623	All compounds	U	U	AC
S2-AD_120623 / FD-2_120623	All compounds	U	U	AC
S3-BU_120723 / FD-3_120723	TPH-Diesel Range	110	100 U	AC
S4-BU_120723 / FD-4_120723	All compounds	U	U	AC

Note:

AC = acceptable

The calculated RPDs between the parent sample and field duplicate were acceptable.

4.7 Compound Identification

The retention times of all quantitated peaks must fall within the calculated retention time windows.

All identified compounds met the specified criteria.

4.8 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.

4.9 Data Validation Checklist for Total Petroleum Hydrocarbon (TPH)

TPH: NWTPH-DX	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Gas Chromatography/Flame- and Photo- Ionization Detectors (GC/FID/PID)					
Tier II Validation					
Holding Times/Preservation		X		X	
Reporting Limits (Units)		X		X	
Blanks					
A. Method Blanks		X		X	
B. Trip Blanks	X				X
C. Equipment Blanks		X		X	
Surrogates Accuracy (%R)		X		X	
Matrix Spike (MS) %R		X		X	
Matrix Spike Duplicate (MSD) %R		X		X	
MS/MSD Precision (RPD)		X	X		
Laboratory Control Sample (LCS) %R		X		X	
Laboratory Control Sample Duplicate (LCSD) %R		X		X	
LCS/LCSD RPD		X		X	
Laboratory Duplicate Sample RPD	X				X
Field Duplicate Sample RPD		X		X	
Dilution Factor		X		X	
Moisture Content	X				X

Notes:

%R = percent recovery

RPD = relative percent difference

Validation Performed By: Hareesha Naik

Signature: Habil

Date: January 2, 2024

Peer Review: Jennifer Singer

Date: January 3, 2024



Cincinnati, OH
+1 513 733 5336

Fort Collins, CO
+1 970 490 1511

Everett, WA
+1 425 356 2600

Holland, MI
+1 616 399 6070

Chain of Custody Form

Houston, TX
+1 281 530 5656

Spring City, PA
+1 610 948 4903

South Charleston, WV
+1 304 356 3168

Middletown, PA
+1 717 944 5541

Salt Lake City, UT
+1 801 266 7700

York, PA
+1 717 505 5280

Page 1 of 4

COC ID: **289088**

EV23120075

ALS Project Manager:

ALS Work Order #:

Customer Information		Project Information		Parameter/Method Request for Analysis											
Purchase Order		Project Name	BNSF Skykomish 4Q23 GWM	A	210_DX_W										
Work Order		Project Number	Skykomish	B											
Company Name	Arcadis U.S., Inc.	Bill To Company	Arcadis U.S., Inc.	C	210_DXSGA_W										
Send Report To	Michelle Nguyen + EMILY ZIKMUND	Invoice Attn	Accounts Payable	D											
Address	1420 - 5th Ave Unit 2400	Address	630 Plaza Drive Suite 600	E											
				F											
City/State/Zip	Seattle, WA 98101	City/State/Zip	Highlands Ranch CO 80129	G											
Phone	(206) 325-5254	Phone	(303) 471-3699	H											
Fax	(206) 325-8218	Fax		I											
e-Mail Address	Michelle.Nguyen@arcadis.com	e-Mail Address	invoices_us@arcadis.com	J											

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	GW-1 - 120523	12-05-23	1505	Water	1	1	X										
2	GW-2 - 120523	12-05-23	1548	Water	1	1	X										
3	GW-3 - 120623	12-06-23	1156	Water	+	2	X		X								
4	GW-4			Water	1		X										
4	EW-1 - 120623	12-06-23	0906	Water	1	1	X										
5	EW-2A - 120623	12-06-23	1045	Water	+	1	X										
6	S1-AD - 120623	MS/MSD	12-06-23	Water	+	1	X										
7	S1-AU - 120623	MS/MSD	12-06-23	Water	+	3	X										
8	S1-BD - 120623	12-06-23	1521	Water	+	1	X										
9	S1-BU - 120623	12-06-23	1517	Water	+	1	X										

Sampler(s) Please Print & Sign _____ Shipment Method _____ Required Turnaround Time: (Check Box) STD 10 Wk Days 5 Wk Days 2 Wk Days 24 Hour Results Due Date: _____

Relinquished by: [Signature] Date: 12/8/23 Time: 12:30 Received by: [Signature] Date: 12/8/23 Time: 12:30 Notes: _____

Relinquished by: _____ Date: _____ Time: _____ Received by (Laboratory): _____

Logged by (Laboratory): _____ Date: _____ Time: _____ Checked by (Laboratory): _____

Preservative Key: 1-HCl 2-HNO₃ 3-H₂SO₄ 4-NaOH 5-Na₂S₂O₃ 6-NaHSO₄ 7-Other 8-4°C 9-5035

Cooler ID _____ Cooler Temp. _____ QC Package: (Check One Box Below)

Level II Std QC TRRP Checklist
 Level III Std QC/Raw Data TRRP Level IV
 Level IV SWB46/CLP
 Other _____

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
 2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
 3. The Chain of Custody is a legal document. All information must be completed accurately.



Cincinnati, OH
+1 513 733 5336

Fort Collins, CO
+1 970 490 1511

Everett, WA
+1 425 356 2600

Holland, MI
+1 616 399 6070

Chain of Custody Form

Houston, TX
+1 281 530 5656

Spring City, PA
+1 610 948 4903

South Charleston, WV
+1 304 356 3168

Middletown, PA
+1 717 944 5541

Salt Lake City, UT
+1 801 266 7700

York, PA
+1 717 505 5280

Page 2 of 4

COC ID: **289087**

EV23120075

ALS Project Manager:

ALS Work Order #:

Customer Information		Project Information		Parameter/Method Request for Analysis															
Purchase Order		Project Name	BNSF Skykomish 4Q23 GWM	A	210_DX_W														
Work Order		Project Number	Skykomish	B															
Company Name	Arcadis U.S., Inc.	Bill To Company	Arcadis U.S., Inc.	C	210_DXSGA_W														
Send Report To	Michelle Nguyen	Invoice Attn	Accounts Payable	D															
Address	1420 - 5th Ave Unit 2400	Address	630 Plaza Drive Suite 600	E															
				F															
City/State/Zip	Seattle, WA 98101	City/State/Zip	Highlands Ranch CO 80129	G															
Phone	(206) 325-5254	Phone	(303) 471-3699	H															
Fax	(206) 325-8218	Fax		I															
e-Mail Address	Michelle.Nguyen@arcadis.com	e-Mail Address	invoices_us@arcadis.com	J															

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
10	S2-AD - 120623	12-06-23	1556	Water	+	1	X										
11	S2-AU - 120623	12-06-23	1557	Water	1	1	X										
12	S2-BD - 120723	12-07-23	0855	Water	+	1	X										
13	S2-BU - 120723	12-07-23	0852	Water	+	1	X										
14	S3-AD - 120723	12-07-23	0942	Water	1	1	X										
15	S3-AU - 120723	12-07-23	0941	Water	1	1	X										
16	S3-BD - 120723	12-07-23	1017	Water	1	1	X										
17	S3-BU - 120723	12-07-23	1014	Water	1	1	X										
18	S3-CD - 120723 MS/MSD	12-07-23	1052	Water	+	3	X										
19	S3-CU - 120723	12-07-23	1048	Water	+	1	X										

Sampler(s) Please Print & Sign _____ Shipment Method _____ Required Turnaround Time: (Check Box) STD 10 Wk Days 5 Wk Days 2 Wk Days 24 Hour Results Due Date: _____

Relinquished by: <i>[Signature]</i>	Date: 12/9/23	Time: 12:30	Received by: <i>[Signature]</i>	Received by (Laboratory): ALSF 12/9/23	Notes: 12:30
Relinquished by:	Date:	Time:	Received by (Laboratory):	Cooler ID:	Cooler Temp.:
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):	QC Package: (Check One Box Below)	
Preservative Key: 1-HCl 2-HNO ₃ 3-H ₂ SO ₄ 4-NaOH 5-Na ₂ S ₂ O ₃ 6-NaHSO ₄ 7-Other 8-4°C 9-5035				<input checked="" type="checkbox"/> Level II Std QC	<input type="checkbox"/> TRRP Checklist
				<input type="checkbox"/> Level III Std QC/Raw Date	<input type="checkbox"/> TRRP Level IV
				<input type="checkbox"/> Level IV SWB48/CLP	
				<input type="checkbox"/> Other	

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
 2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
 3. The Chain of Custody is a legal document. All information must be completed accurately.



Cincinnati, OH
+1 513 733 5336

Fort Collins, CO
+1 970 490 1511

Everett, WA
+1 425 356 2600

Holland, MI
+1 616 399 6070

Chain of Custody Form

Page 3 of 4

COC ID: **289086**

Houston, TX
+1 281 530 5656

Spring City, PA
+1 610 948 4903

South Charleston, WV
+1 304 356 3168

Middletown, PA
+1 717 944 5541

Salt Lake City, UT
+1 801 266 7700

York, PA
+1 717 505 5280

EV23120075

ALS Project Manager:

ALS Work Order #:

Customer Information		Project Information		Parameter/Method Request for Analysis												
Purchase Order		Project Name	BNSF Skykomish 4Q23 GWM	A	210_DX_W											
Work Order		Project Number	Skykomish	B												
Company Name	Arcadis U.S., Inc.	Bill To Company	Arcadis U.S., Inc.	C	210_DXSGA_W											
Send Report To	Michelle Nguyen	Invoice Attn	Accounts Payable	D												
Address	1420 - 5th Ave Unit 2400	Address	630 Plaza Drive Suite 600	E												
				F												
City/State/Zip	Seattle, WA 98101	City/State/Zip	Highlands Ranch CO 80129	G												
Phone	(206) 325-5254	Phone	(303) 471-3699	H												
Fax	(206) 325-8218	Fax		I												
e-Mail Address	Michelle.Nguyen@arcadis.com	e-Mail Address	invoices_us@arcadis.com	J												

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
20	S4-AD - 120723	12-07-23	1205	Water	↓	1	X										
21	S4-AU - 120723	12-07-23	1152	Water	↓	1	X										
22	S4-BD - 120723	12-07-23	1240	Water	↑	1	X										
23	S4-BU - 120723	12-07-23	1223	Water	↓	1	X										
24	S4-CD - 120723	12-07-23	1315	Water	↓	1	X										
25	S4-CU - 120723	12-07-23	1301	Water	↑	1	X										
26	2A-W-40 - 120623	12-06-23	0857	Water	↑	1	X										
27	2A-W-41 - 120623	12-06-23	1430	Water	↓	2	X		X								
28	2A-W-42 - 120623	12-06-23	1033	Water	↑	1	X										
29	1B-W-23 - 120623	12-06-23	1202	Water	↓	1	X										

Sampler(s) Please Print & Sign		Shipment Method		Required Turnaround Time: (Check Box) <input checked="" type="checkbox"/> STD 10 Wk Days <input type="checkbox"/> 5 Wk Days <input type="checkbox"/> 2 Wk Days <input type="checkbox"/> 24 Hour				Results Due Date:			
Relinquished by: <i>Michelle Nguyen</i>	Date: 12/9/23	Time: 12:30	Received by: <i>Michelle Nguyen</i>	Date: 12/8/23				Notes: 12:30			
Relinquished by:	Date:	Time:	Received by (Laboratory):	Cooler ID	Cooler Temp.	QC Package: (Check One Box Below)					
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):			<input checked="" type="checkbox"/> Level II Std QC	<input type="checkbox"/> TRRP Checklist				
Preservative Key: 1-HCl 2-HNO ₃ 3-H ₂ SO ₄ 4-NaOH 5-Na ₂ S ₂ O ₃ 6-NaHSO ₄ 7-Other 8-4°C 9-5035						<input type="checkbox"/> Level III Std QC/Raw Date	<input type="checkbox"/> TRRP Level IV				
						<input type="checkbox"/> Level IV SW846/CLP					
						<input type="checkbox"/> Other					

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
 2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
 3. The Chain of Custody is a legal document. All information must be completed accurately.



Cincinnati, OH
+1 513 733 5336

Fort Collins, CO
+1 970 490 1511

Everett, WA
+1 425 356 2600

Holland, MI
+1 616 399 6070

Chain of Custody Form

Page 4 of 4

COC ID: **289085**

Houston, TX
+1 281 530 5656

Spring City, PA
+1 610 948 4903

South Charleston, WV
+1 304 356 3168

Middletown, PA
+1 717 944 5541

Salt Lake City, UT
+1 801 266 7700

York, PA
+1 717 505 5280

EV23120075

ALS Project Manager:

ALS Work Order #:

Customer Information		Project Information		Parameter/Method Request for Analysis												
Purchase Order		Project Name	BNSF Skykomish 4Q23 GWM	A	210_DX_W											
Work Order		Project Number	Skykomish	B												
Company Name	Arcadis U.S., Inc.	Bill To Company	Arcadis U.S., Inc.	C	210_DXSGA_W											
Send Report To	Michelle Nguyen	Invoice Attn	Accounts Payable	D												
Address	1420 - 5th Ave Unit 2400	Address	630 Plaza Drive Suite 600	E												
				F												
City/State/Zip	Seattle, WA 98101	City/State/Zip	Highlands Ranch CO 80129	G												
Phone	(206) 325-5254	Phone	(303) 471-3699	H												
Fax	(206) 325-8218	Fax		I												
e-Mail Address	Michelle.Nguyen@arcadis.com	e-Mail Address	invoices_us@arcadis.com	J												

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
*30	5-W-43 - 120523	12-05-23	1529	Water	1	1	X										
31	FD-1 - 120623	12-06-23	—	Water	i	1	X										
32	FD-2 - 120623	12-06-23	—	Water		1	X										
33	FD-3 - 120723	12-07-23	—	Water		1	X										
34	FD-4 - 120723	12-07-23	—	Water		1	X										
35	EB-1 - 120823	12-08-23	0800	Water		1	X										
7																	
8																	
9																	
10																	

Sampler(s) Please Print & Sign		Shipment Method		Required Turnaround Time: (Check Box) <input checked="" type="checkbox"/> STD 10 Wk Days <input type="checkbox"/> 5 Wk Days <input type="checkbox"/> 2 Wk Days <input type="checkbox"/> 24 Hour				Results Due Date:			
Relinquished by: <i>Michelle Nguyen</i>	Date: 12/19/23	Time: 12:30	Received by: <i>ALS</i>	Notes: 12/19/23 12:30							
Relinquished by:	Date:	Time:	Received by (Laboratory):	Cooler ID	Cooler Temp.	QC Package: (Check One Box Below)					
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):			<input checked="" type="checkbox"/> Level II Std QC	<input type="checkbox"/> TRRP Checklist				
Preservative Key: 1-HCl 2-HNO ₃ 3-H ₂ SO ₄ 4-NaOH 5-Na ₂ S ₂ O ₃ 6-NaHSO ₄ 7-Other 8-4°C 9-5035						<input type="checkbox"/> Level III Std QC/Raw Data	<input type="checkbox"/> TRRP Level IV				
						<input type="checkbox"/> Level IV SW846/CLP					
						Other:					

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
 2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
 3. The Chain of Custody is a legal document. All information must be completed accurately.



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	12/21/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23120075
CLIENT PROJECT:	BNSF Skykomish 4Q23 GWM	ALS SAMPLE#:	EV23120075-01
CLIENT SAMPLE ID	GW-1_120523	DATE RECEIVED:	12/08/2023
		COLLECTION DATE:	12/5/2023 3:05:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	12/12/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	120	100	1	UG/L	12/12/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	100	12/12/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains an unidentified oil range product.



CERTIFICATE OF ANALYSIS

CLIENT: Arcadis U.S., Inc. DATE: 12/21/2023
1420 - 5th Ave , Unit 2400 ALS JOB#: EV23120075
Seattle, WA 98101 ALS SAMPLE#: EV23120075-02
CLIENT CONTACT: Michelle Nguyen DATE RECEIVED: 12/08/2023
CLIENT PROJECT: BNSF Skykomish 4Q23 GWM COLLECTION DATE: 12/5/2023 3:48:00 PM
CLIENT SAMPLE ID GW-2_120523 WDOE ACCREDITATION: C601

SAMPLE DATA RESULTS

Table with 8 columns: ANALYTE, METHOD, RESULTS, REPORTING LIMITS, DILUTION FACTOR, UNITS, ANALYSIS DATE, ANALYSIS BY. Rows include TPH-Diesel Range and TPH-Oil Range.

Table with 5 columns: SURROGATE, METHOD, %REC, ANALYSIS DATE, ANALYSIS BY. Row includes C25.

Chromatogram indicates that it is likely that sample contains an unidentified diesel range product and an unidentified oil range product.



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	12/21/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23120075
CLIENT PROJECT:	BNSF Skykomish 4Q23 GWM	ALS SAMPLE#:	EV23120075-03
CLIENT SAMPLE ID	GW-3_120623	DATE RECEIVED:	12/08/2023
		COLLECTION DATE:	12/6/2023 11:56:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	81	50	1	UG/L	12/13/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	12/13/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	107	12/13/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains an unidentified diesel range product.



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	12/21/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23120075
CLIENT PROJECT:	BNSF Skykomish 4Q23 GWM	ALS SAMPLE#:	EV23120075-03
CLIENT SAMPLE ID	GW-3_120623_SG	DATE RECEIVED:	12/08/2023
		COLLECTION DATE:	12/6/2023 11:56:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX w/SGA	U	50	1	UG/L	12/18/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX w/SGA	U	100	1	UG/L	12/18/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX w/SGA	116	12/18/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit..



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	12/21/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23120075
CLIENT PROJECT:	BNSF Skykomish 4Q23 GWM	ALS SAMPLE#:	EV23120075-04
CLIENT SAMPLE ID	EW-1_120623	DATE RECEIVED:	12/08/2023
		COLLECTION DATE:	12/6/2023 9:06:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	100	100	1	UG/L	12/13/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	12/13/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	107	12/13/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains an unidentified diesel range product.



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	12/21/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23120075
CLIENT PROJECT:	BNSF Skykomish 4Q23 GWM	ALS SAMPLE#:	EV23120075-05
CLIENT SAMPLE ID	EW-2A_120623	DATE RECEIVED:	12/08/2023
		COLLECTION DATE:	12/6/2023 10:45:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	12/13/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	12/13/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	106	12/13/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	12/21/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23120075
CLIENT PROJECT:	BNSF Skykomish 4Q23 GWM	ALS SAMPLE#:	EV23120075-06
CLIENT SAMPLE ID	S1-AD_120623	DATE RECEIVED:	12/08/2023
		COLLECTION DATE:	12/6/2023 2:48:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	12/13/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	12/13/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	99.6	12/13/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	12/21/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23120075
CLIENT PROJECT:	BNSF Skykomish 4Q23 GWM	ALS SAMPLE#:	EV23120075-07
CLIENT SAMPLE ID	S1-AU_120623	DATE RECEIVED:	12/08/2023
		COLLECTION DATE:	12/6/2023 2:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	12/13/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	12/13/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	99.6	12/13/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	12/21/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23120075
CLIENT PROJECT:	BNSF Skykomish 4Q23 GWM	ALS SAMPLE#:	EV23120075-08
CLIENT SAMPLE ID	S1-BD_120623	DATE RECEIVED:	12/08/2023
		COLLECTION DATE:	12/6/2023 3:21:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	12/12/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	12/12/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	87.4	12/12/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	12/21/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23120075
CLIENT PROJECT:	BNSF Skykomish 4Q23 GWM	ALS SAMPLE#:	EV23120075-09
CLIENT SAMPLE ID	S1-BU_120623	DATE RECEIVED:	12/08/2023
		COLLECTION DATE:	12/6/2023 3:17:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	12/12/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	390	100	1	UG/L	12/12/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	96.3	12/12/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains an unidentified oil range product.



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	12/21/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23120075
CLIENT PROJECT:	BNSF Skykomish 4Q23 GWM	ALS SAMPLE#:	EV23120075-10
CLIENT SAMPLE ID	S2-AD_120623	DATE RECEIVED:	12/08/2023
		COLLECTION DATE:	12/6/2023 3:56:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	12/12/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	12/12/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	96.9	12/12/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	12/21/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23120075
CLIENT PROJECT:	BNSF Skykomish 4Q23 GWM	ALS SAMPLE#:	EV23120075-11
CLIENT SAMPLE ID	S2-AU_120623	DATE RECEIVED:	12/08/2023
		COLLECTION DATE:	12/6/2023 3:57:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	500	100	1	UG/L	12/12/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	140	100	1	UG/L	12/12/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	89.3	12/12/2023	DHM

Chromatogram indicates that it is likely that sample contains an unidentified diesel range product and an unidentified oil range product.



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	12/21/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23120075
CLIENT PROJECT:	BNSF Skykomish 4Q23 GWM	ALS SAMPLE#:	EV23120075-12
CLIENT SAMPLE ID	S2-BD_120723	DATE RECEIVED:	12/08/2023
		COLLECTION DATE:	12/7/2023 8:55:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	12/13/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	12/13/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	83.7	12/13/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	12/21/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23120075
CLIENT PROJECT:	BNSF Skykomish 4Q23 GWM	ALS SAMPLE#:	EV23120075-13
CLIENT SAMPLE ID	S2-BU_120723	DATE RECEIVED:	12/08/2023
		COLLECTION DATE:	12/7/2023 8:52:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	1300	100	1	UG/L	12/13/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	340	100	1	UG/L	12/13/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	93.8	12/13/2023	DHM

Chromatogram indicates that it is likely that sample contains an unidentified diesel range product and an unidentified oil range product.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	12/21/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23120075
CLIENT PROJECT:	BNSF Skykomish 4Q23 GWM	ALS SAMPLE#:	EV23120075-14
CLIENT SAMPLE ID	S3-AD_120723	DATE RECEIVED:	12/08/2023
		COLLECTION DATE:	12/7/2023 9:42:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	12/13/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	270	100	1	UG/L	12/13/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	109	12/13/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains an unidentified oil range product.



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	12/21/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23120075
CLIENT PROJECT:	BNSF Skykomish 4Q23 GWM	ALS SAMPLE#:	EV23120075-15
CLIENT SAMPLE ID	S3-AU_120723	DATE RECEIVED:	12/08/2023
		COLLECTION DATE:	12/7/2023 9:41:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	12/13/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	12/13/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	91.0	12/13/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	12/21/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23120075
CLIENT PROJECT:	BNSF Skykomish 4Q23 GWM	ALS SAMPLE#:	EV23120075-16
CLIENT SAMPLE ID	S3-BD_120723	DATE RECEIVED:	12/08/2023
		COLLECTION DATE:	12/7/2023 10:17:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	12/13/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	12/13/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	93.8	12/13/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	12/21/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23120075
CLIENT PROJECT:	BNSF Skykomish 4Q23 GWM	ALS SAMPLE#:	EV23120075-17
CLIENT SAMPLE ID	S3-BU_120723	DATE RECEIVED:	12/08/2023
		COLLECTION DATE:	12/7/2023 10:14:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	110	100	1	UG/L	12/13/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	12/13/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	89.7	12/13/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains an unidentified diesel range product.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	12/21/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23120075
CLIENT PROJECT:	BNSF Skykomish 4Q23 GWM	ALS SAMPLE#:	EV23120075-18
CLIENT SAMPLE ID	S3-CD_120723	DATE RECEIVED:	12/08/2023
		COLLECTION DATE:	12/7/2023 10:52:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U UJ	100	1	UG/L	12/13/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	300	100	1	UG/L	12/13/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	102	12/13/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains an unidentified oil range product.



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	12/21/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23120075
CLIENT PROJECT:	BNSF Skykomish 4Q23 GWM	ALS SAMPLE#:	EV23120075-19
CLIENT SAMPLE ID	S3-CU_120723	DATE RECEIVED:	12/08/2023
		COLLECTION DATE:	12/7/2023 10:48:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	12/13/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	12/13/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	103	12/13/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	12/21/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23120075
CLIENT PROJECT:	BNSF Skykomish 4Q23 GWM	ALS SAMPLE#:	EV23120075-20
CLIENT SAMPLE ID	S4-AD_120723	DATE RECEIVED:	12/08/2023
		COLLECTION DATE:	12/7/2023 12:05:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	12/13/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	12/13/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	104	12/13/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	12/21/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23120075
CLIENT PROJECT:	BNSF Skykomish 4Q23 GWM	ALS SAMPLE#:	EV23120075-21
CLIENT SAMPLE ID	S4-AU_120723	DATE RECEIVED:	12/08/2023
		COLLECTION DATE:	12/7/2023 11:52:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	260	100	1	UG/L	12/13/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	12/13/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	110	12/13/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains an unidentified diesel range product.



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	12/21/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23120075
CLIENT PROJECT:	BNSF Skykomish 4Q23 GWM	ALS SAMPLE#:	EV23120075-22
CLIENT SAMPLE ID	S4-BD_120723	DATE RECEIVED:	12/08/2023
		COLLECTION DATE:	12/7/2023 12:40:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	12/13/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	12/13/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	95.2	12/13/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	12/21/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23120075
CLIENT PROJECT:	BNSF Skykomish 4Q23 GWM	ALS SAMPLE#:	EV23120075-23
CLIENT SAMPLE ID	S4-BU_120723	DATE RECEIVED:	12/08/2023
		COLLECTION DATE:	12/7/2023 12:23:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	12/13/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	12/13/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	66.4	12/13/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	12/21/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23120075
CLIENT PROJECT:	BNSF Skykomish 4Q23 GWM	ALS SAMPLE#:	EV23120075-24
CLIENT SAMPLE ID	S4-CD_120723	DATE RECEIVED:	12/08/2023
		COLLECTION DATE:	12/7/2023 1:15:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	150	100	1	UG/L	12/13/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	150	100	1	UG/L	12/13/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	98.9	12/13/2023	DHM

Chromatogram indicates that it is likely that sample contains an unidentified diesel range product and an unidentified oil range product.



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	12/21/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23120075
CLIENT PROJECT:	BNSF Skykomish 4Q23 GWM	ALS SAMPLE#:	EV23120075-25
CLIENT SAMPLE ID	S4-CU_120723	DATE RECEIVED:	12/08/2023
		COLLECTION DATE:	12/7/2023 1:01:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	330	100	1	UG/L	12/13/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	180	100	1	UG/L	12/13/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	90.5	12/13/2023	DHM

Chromatogram indicates that it is likely that sample contains an unidentified diesel range product and an unidentified oil range product.



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	12/21/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23120075
CLIENT PROJECT:	BNSF Skykomish 4Q23 GWM	ALS SAMPLE#:	EV23120075-26
CLIENT SAMPLE ID	2A-W-40_120623	DATE RECEIVED:	12/08/2023
		COLLECTION DATE:	12/6/2023 8:57:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	12/13/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	12/13/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	95.1	12/13/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	12/21/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23120075
CLIENT PROJECT:	BNSF Skykomish 4Q23 GWM	ALS SAMPLE#:	EV23120075-27
CLIENT SAMPLE ID	2A-W-41_120623	DATE RECEIVED:	12/08/2023
		COLLECTION DATE:	12/6/2023 2:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	230	50	1	UG/L	12/13/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	270	100	1	UG/L	12/13/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	90.0	12/13/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains an unidentified diesel range product and an unidentified oil range product.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	12/21/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23120075
CLIENT PROJECT:	BNSF Skykomish 4Q23 GWM	ALS SAMPLE#:	EV23120075-27
CLIENT SAMPLE ID	2A-W-41_120623_SG	DATE RECEIVED:	12/08/2023
		COLLECTION DATE:	12/6/2023 2:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX w/SGA	55	50	1	UG/L	12/18/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX w/SGA	U	100	1	UG/L	12/18/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX w/SGA	116	12/18/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains an unidentified diesel range product.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	12/21/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23120075
CLIENT PROJECT:	BNSF Skykomish 4Q23 GWM	ALS SAMPLE#:	EV23120075-28
CLIENT SAMPLE ID	2A-W-42_120623	DATE RECEIVED:	12/08/2023
		COLLECTION DATE:	12/6/2023 10:33:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	170	100	1	UG/L	12/13/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	130	100	1	UG/L	12/13/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	73.4	12/13/2023	DHM

Chromatogram indicates that it is likely that sample contains an unidentified diesel range product and an unidentified oil range product.



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	12/21/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23120075
CLIENT PROJECT:	BNSF Skykomish 4Q23 GWM	ALS SAMPLE#:	EV23120075-29
CLIENT SAMPLE ID	1B-W-23_120623	DATE RECEIVED:	12/08/2023
		COLLECTION DATE:	12/6/2023 12:02:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	12/13/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	12/13/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	97.9	12/13/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	12/21/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23120075
CLIENT PROJECT:	BNSF Skykomish 4Q23 GWM	ALS SAMPLE#:	EV23120075-30
CLIENT SAMPLE ID	5-W-43_120523	DATE RECEIVED:	12/08/2023
		COLLECTION DATE:	12/5/2023 3:29:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	12/13/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	12/13/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	96.8	12/13/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	12/21/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23120075
CLIENT PROJECT:	BNSF Skykomish 4Q23 GWM	ALS SAMPLE#:	EV23120075-31
CLIENT SAMPLE ID	FD-1_120623	DATE RECEIVED:	12/08/2023
		COLLECTION DATE:	12/6/2023
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	12/13/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	12/13/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	85.8	12/13/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	12/21/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23120075
CLIENT PROJECT:	BNSF Skykomish 4Q23 GWM	ALS SAMPLE#:	EV23120075-32
CLIENT SAMPLE ID	FD-2_120623	DATE RECEIVED:	12/08/2023
		COLLECTION DATE:	12/6/2023
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	12/13/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	12/13/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	108	12/13/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	12/21/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23120075
CLIENT PROJECT:	BNSF Skykomish 4Q23 GWM	ALS SAMPLE#:	EV23120075-33
CLIENT SAMPLE ID	FD-3_120723	DATE RECEIVED:	12/08/2023
		COLLECTION DATE:	12/7/2023
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	12/13/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	12/13/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	105	12/13/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains an unidentified diesel range product.



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	12/21/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23120075
CLIENT PROJECT:	BNSF Skykomish 4Q23 GWM	ALS SAMPLE#:	EV23120075-34
CLIENT SAMPLE ID	FD-4_120723	DATE RECEIVED:	12/08/2023
		COLLECTION DATE:	12/7/2023
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	12/13/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	12/13/2023	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	102	12/13/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Arcadis U.S., Inc. 1420 - 5th Ave , Unit 2400 Seattle, WA 98101	DATE:	12/21/2023
CLIENT CONTACT:	Michelle Nguyen	ALS JOB#:	EV23120075
CLIENT PROJECT:	BNSF Skykomish 4Q23 GWM	ALS SAMPLE#:	EV23120075-35
CLIENT SAMPLE ID	EB-1_120823	DATE RECEIVED:	12/08/2023
		COLLECTION DATE:	12/8/2023 8:00:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range CAS: ARC-DRO	NWTPH-DX	U	100	1	UG/L	12/13/2023	DHM
TPH-Oil Range CAS: ARC-TPH-ORO	NWTPH-DX	U	100	1	UG/L	12/13/2023	DHM

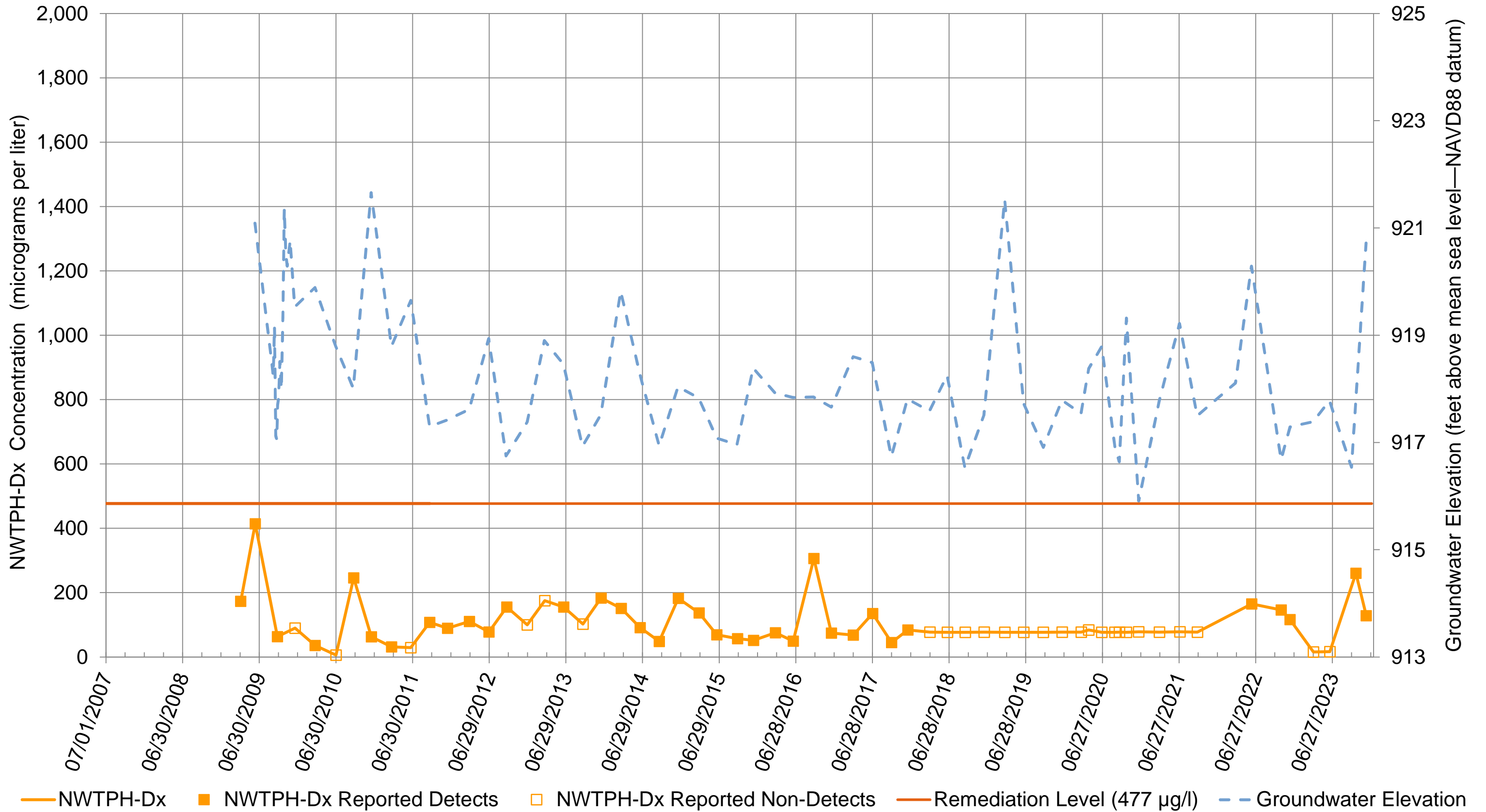
SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 CAS: 629-99-2	NWTPH-DX	102	12/13/2023	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

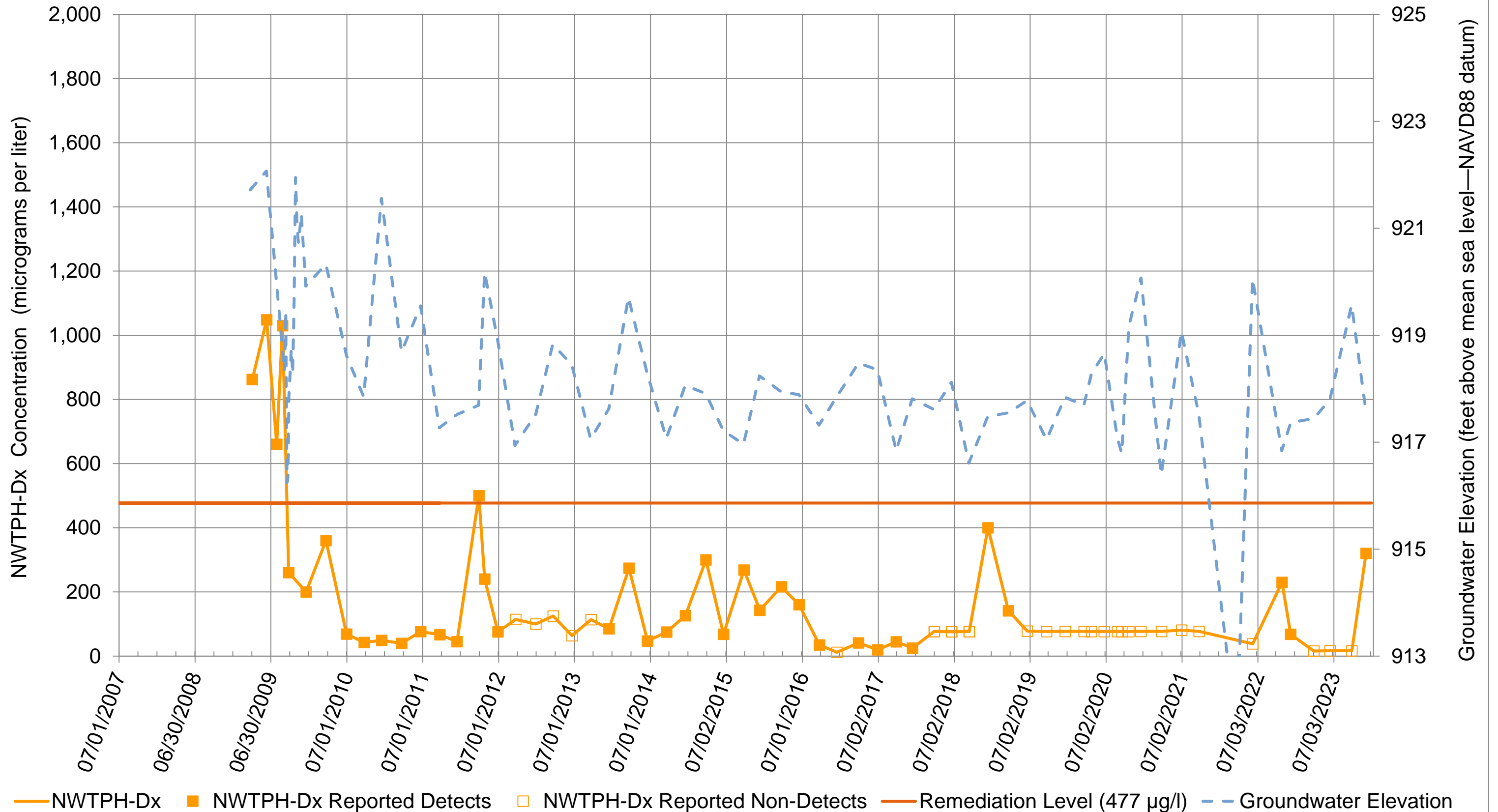
Appendix C

NWTPH-Dx Trend Plots

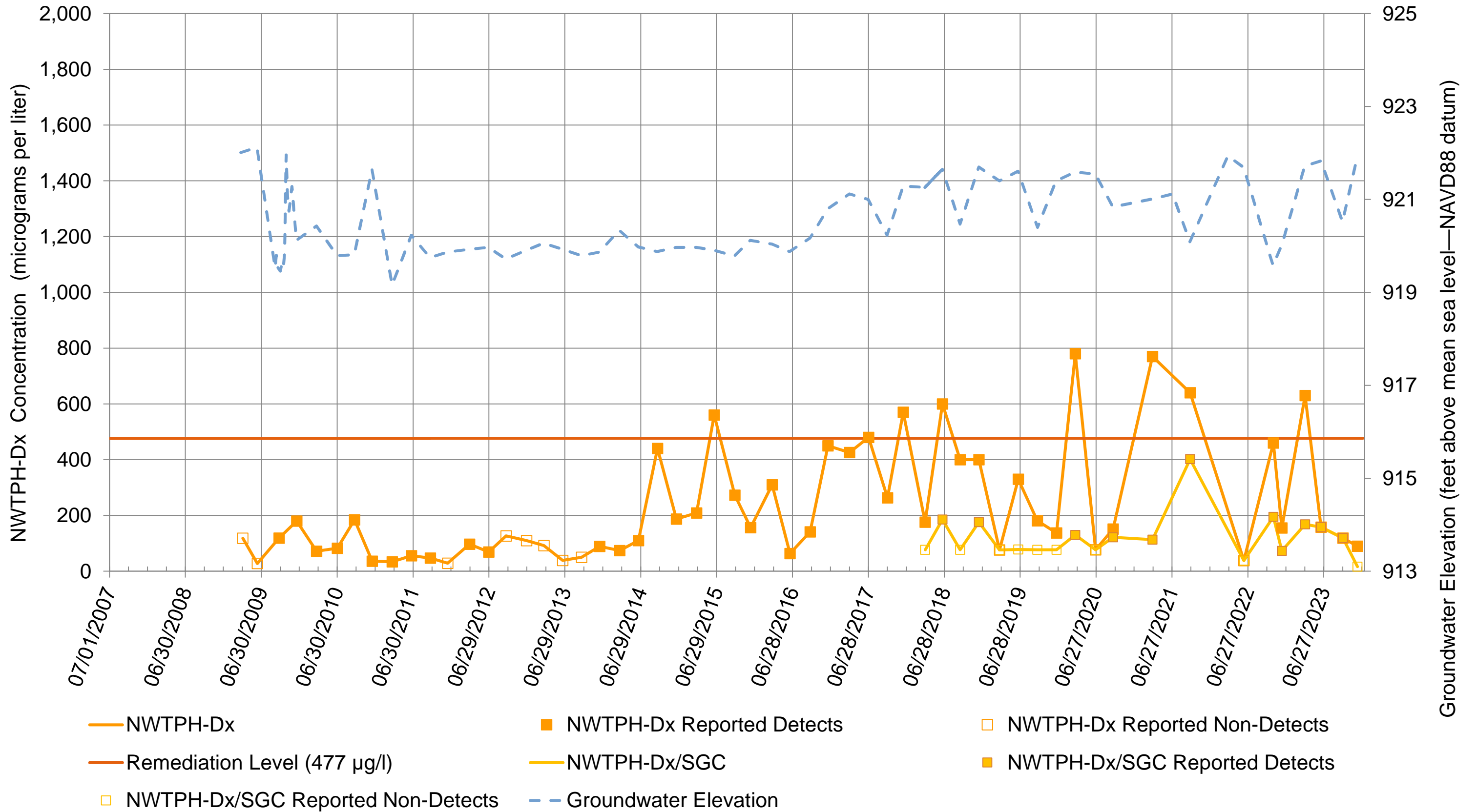
NWTPH-Dx Trend Plot Well GW-1



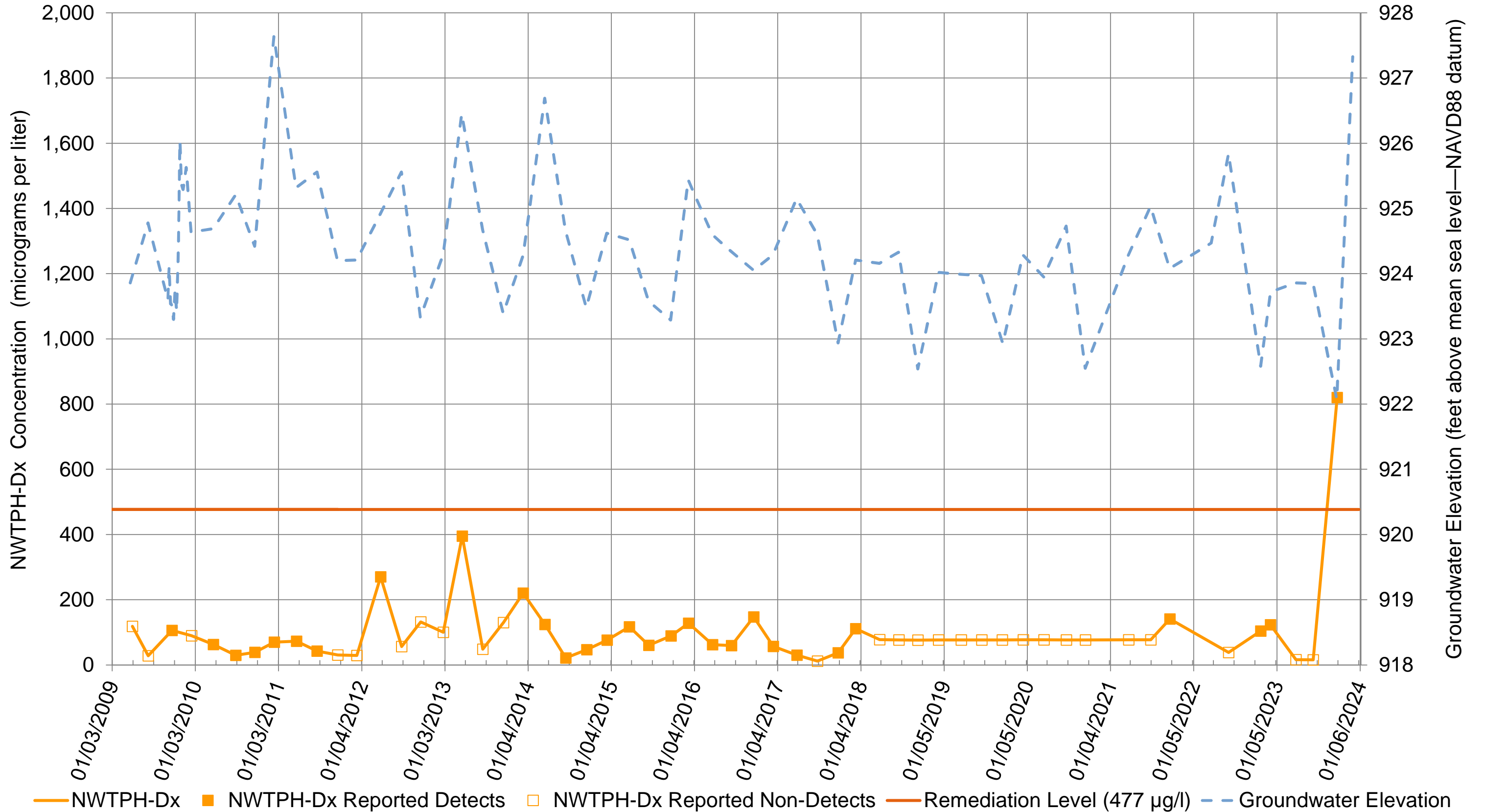
NWTPH-Dx Trend Plot Well GW-2



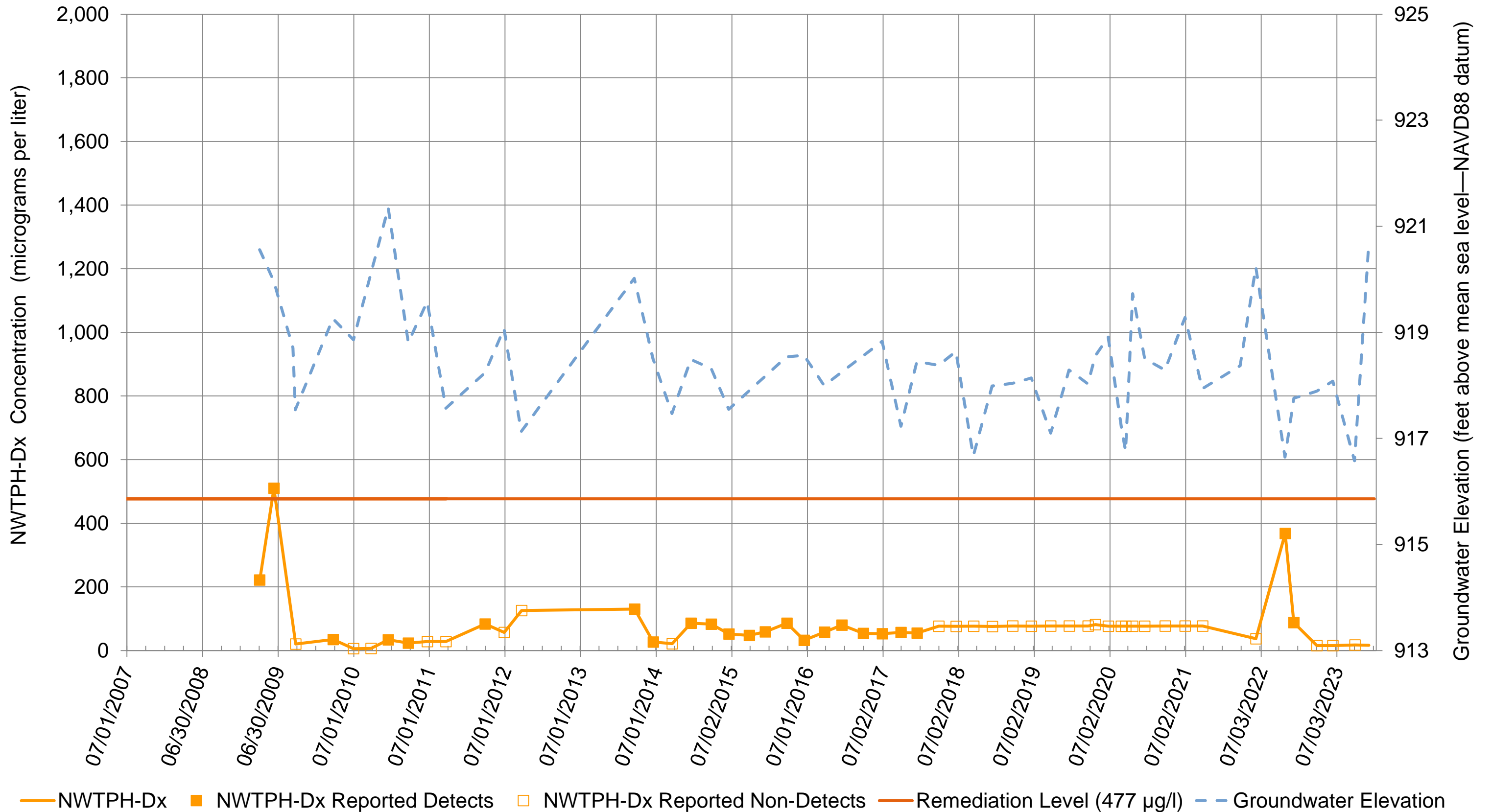
NWTPH-Dx Trend Plot Well GW-3



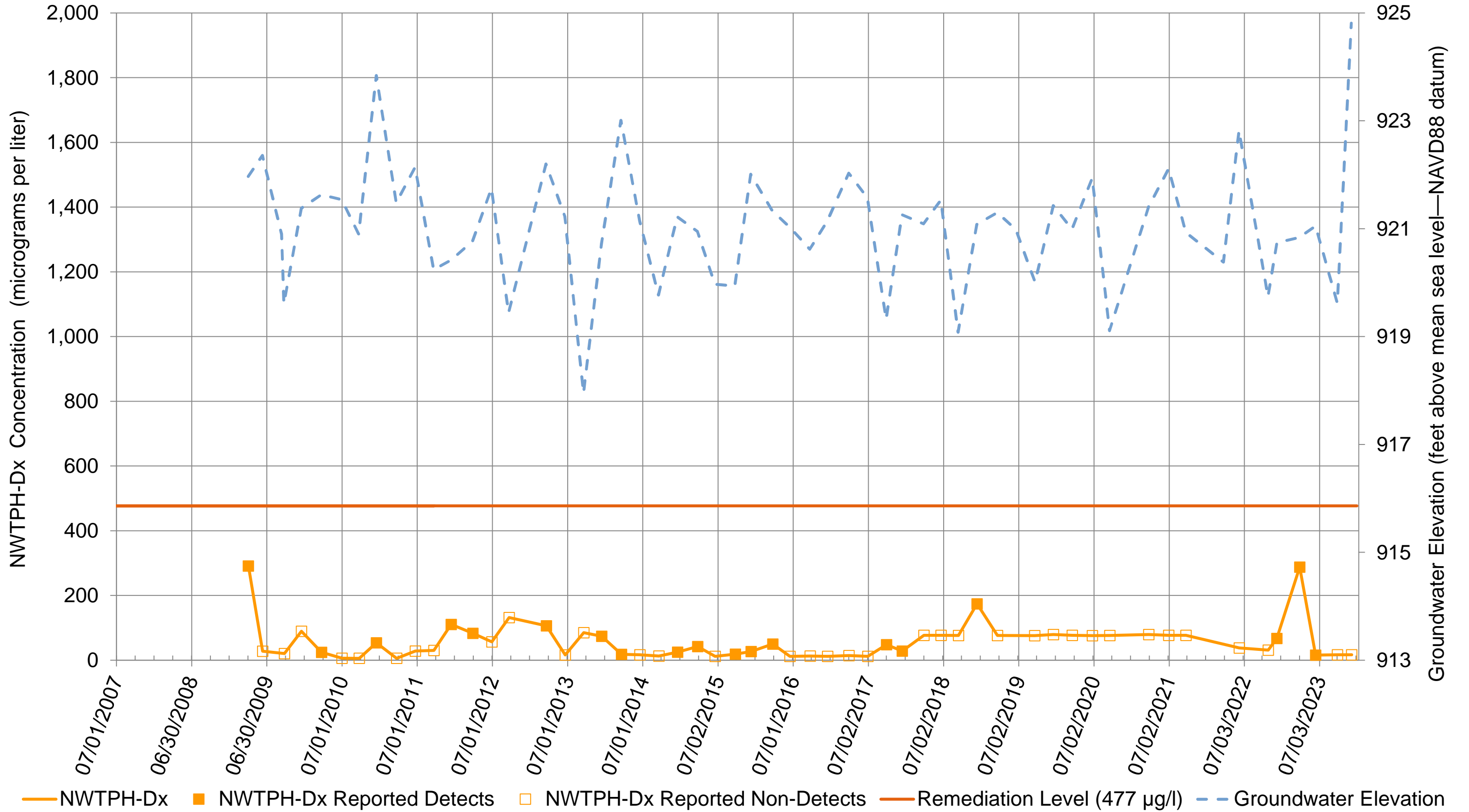
NWTPH-Dx Trend Plot Well GW-4



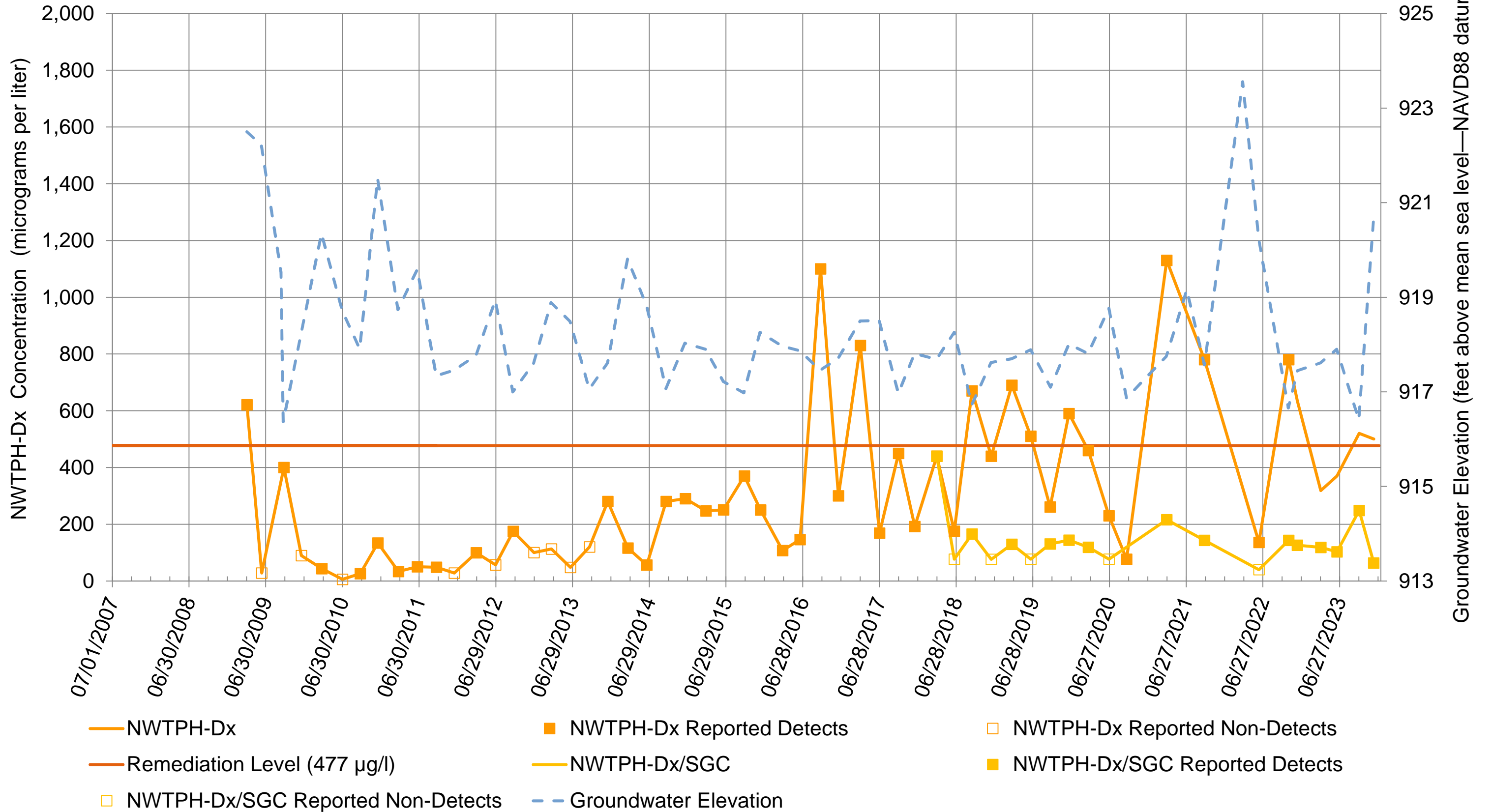
NWTPH-Dx Trend Plot Well 5-W-43



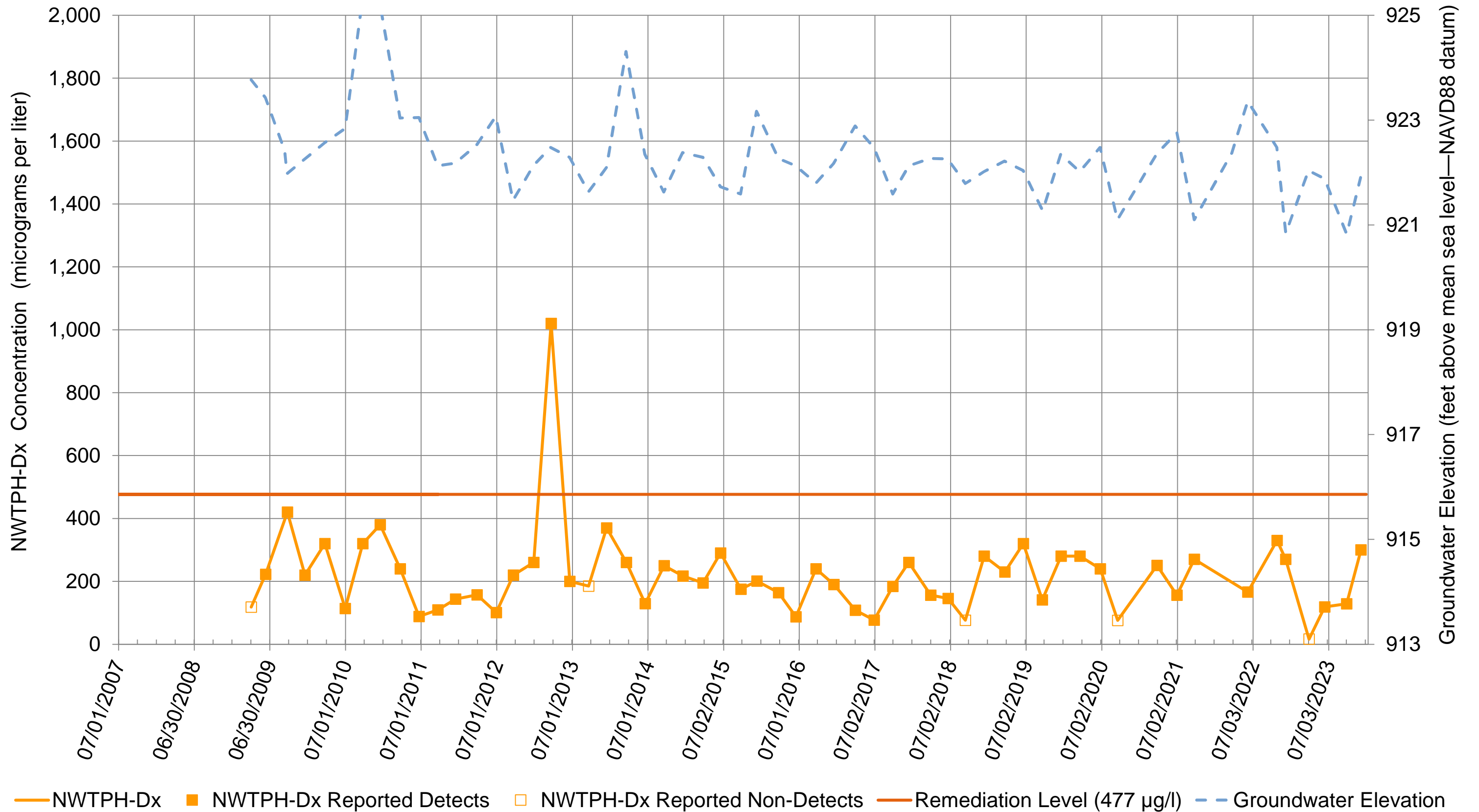
NWTPH-Dx Trend Plot Well 2A-W-40



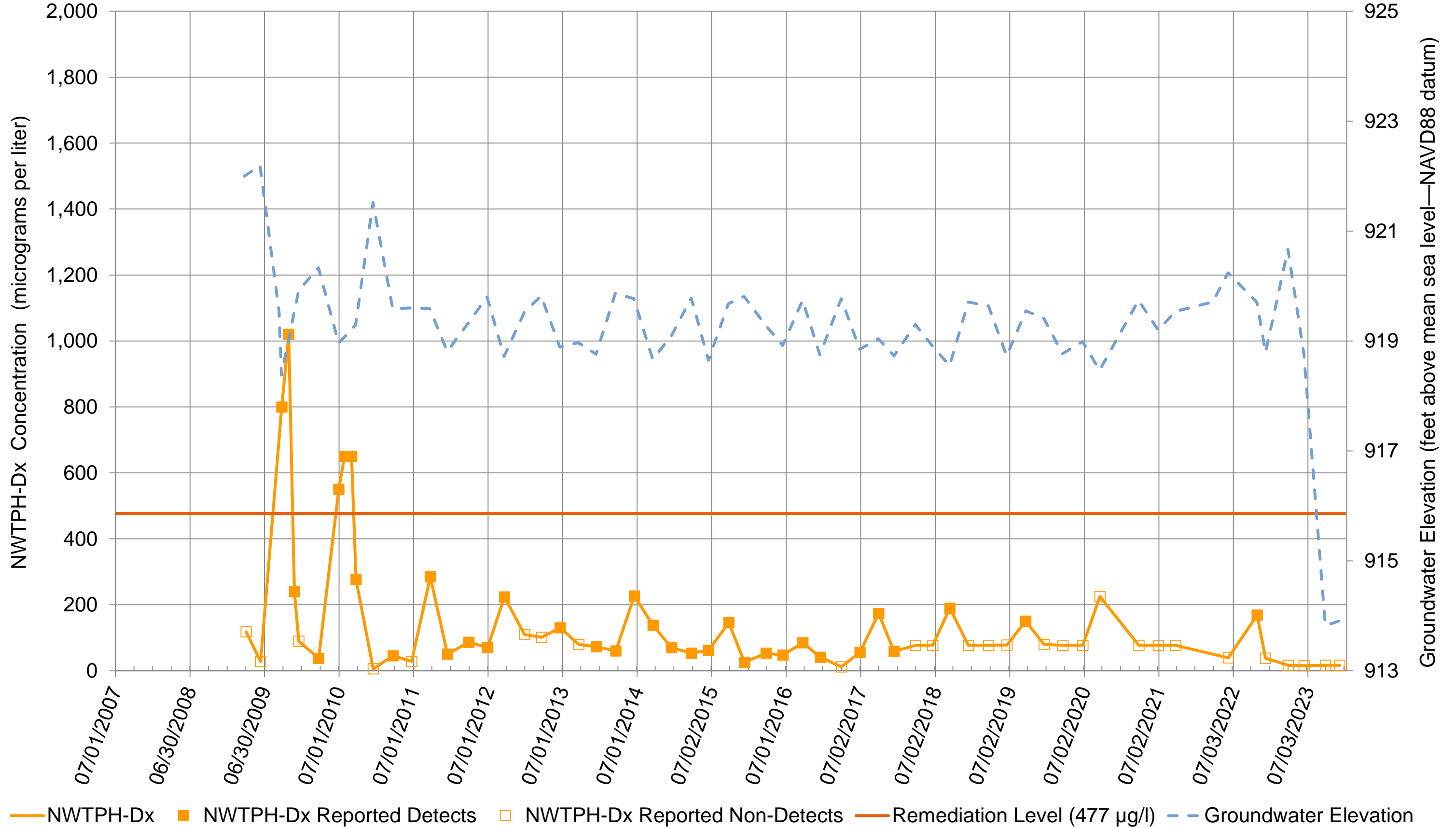
NWTPH-Dx Trend Plot Well 2A-W-41



NWTPH-Dx Trend Plot Well 2A-W-42



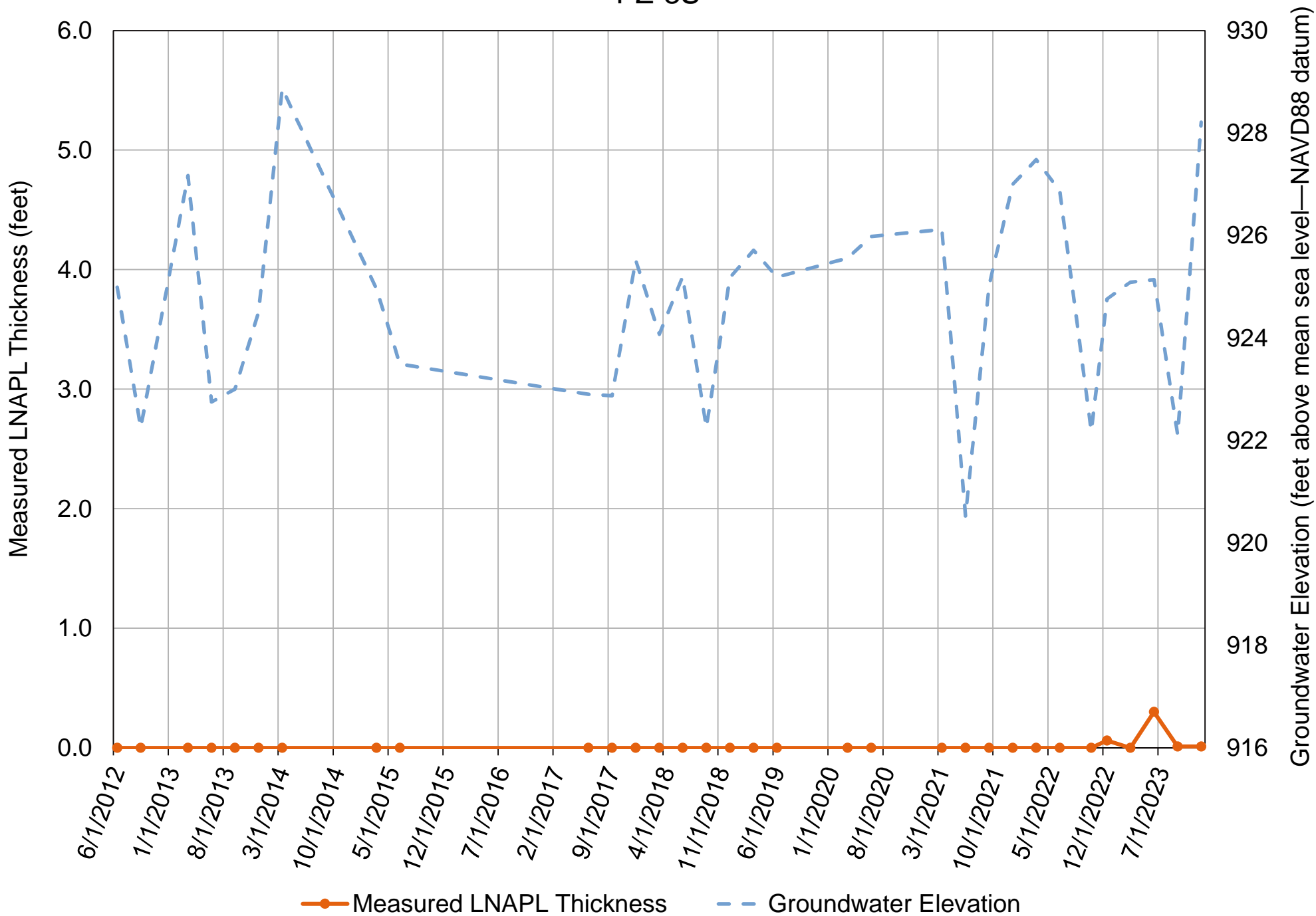
NWTPH-Dx Trend Plot Well 1B-W-23



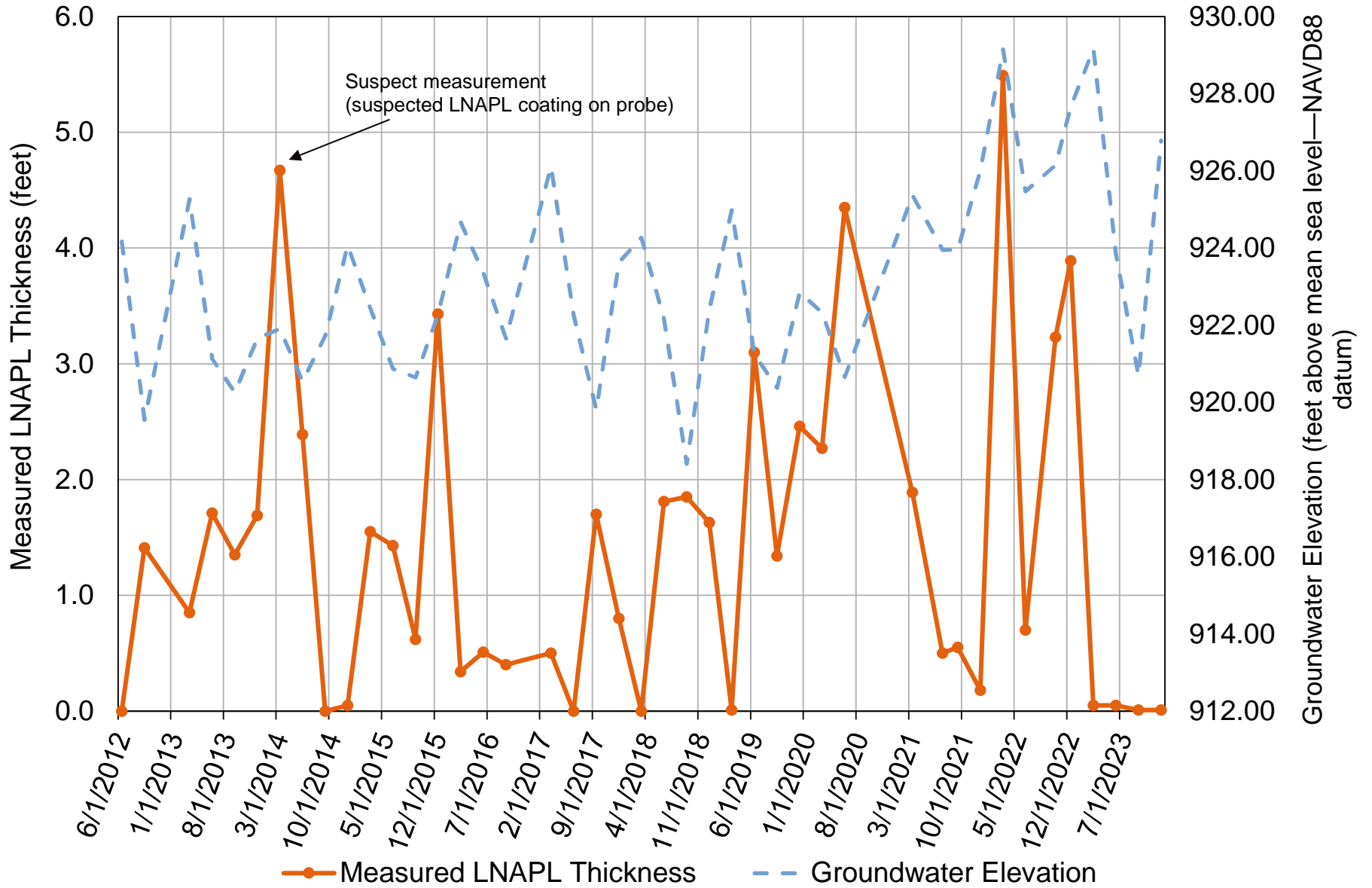
Appendix D

LNAPL Trend Plots

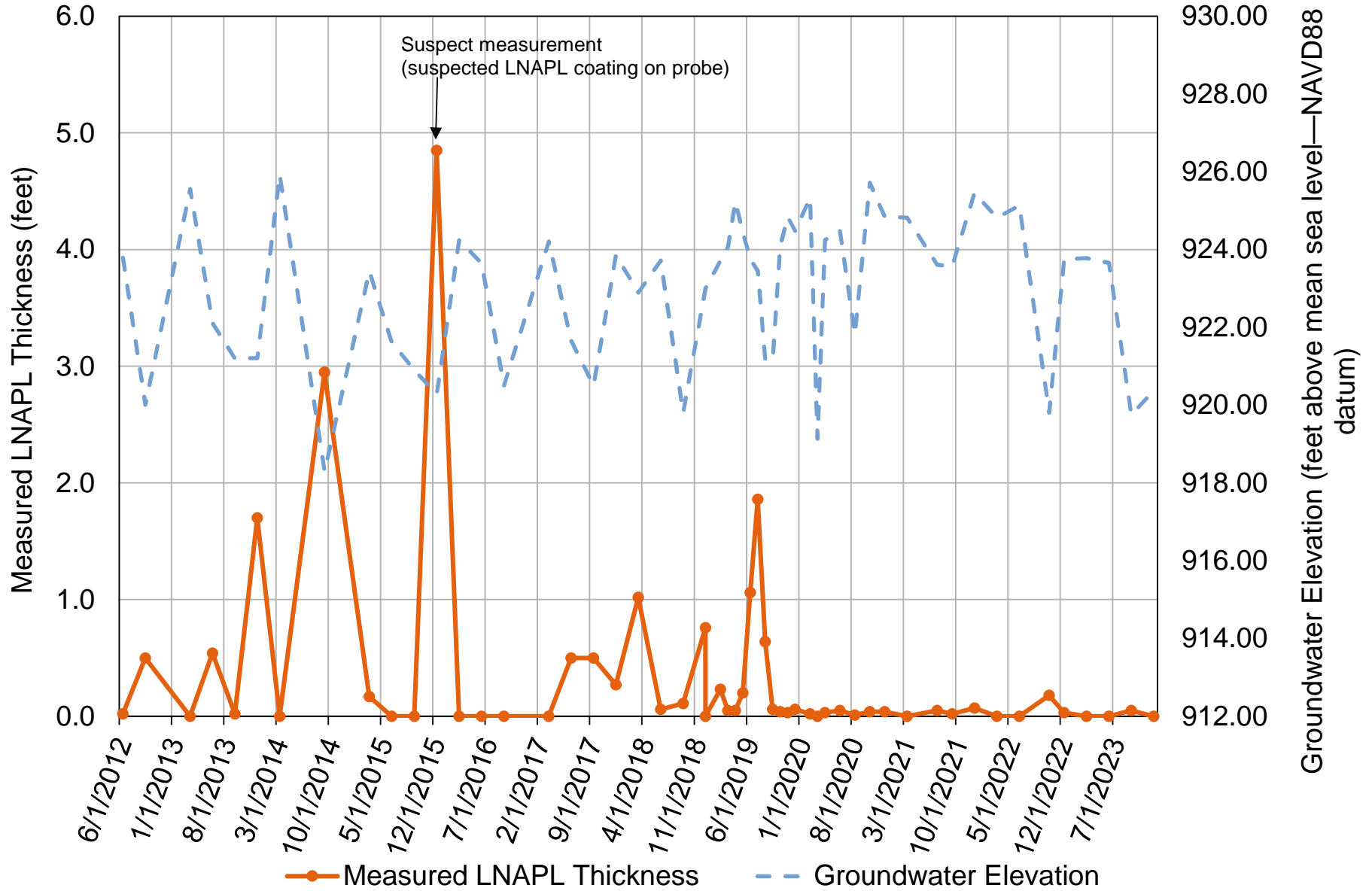
LNAPL Thickness Trend Plot PZ-3S



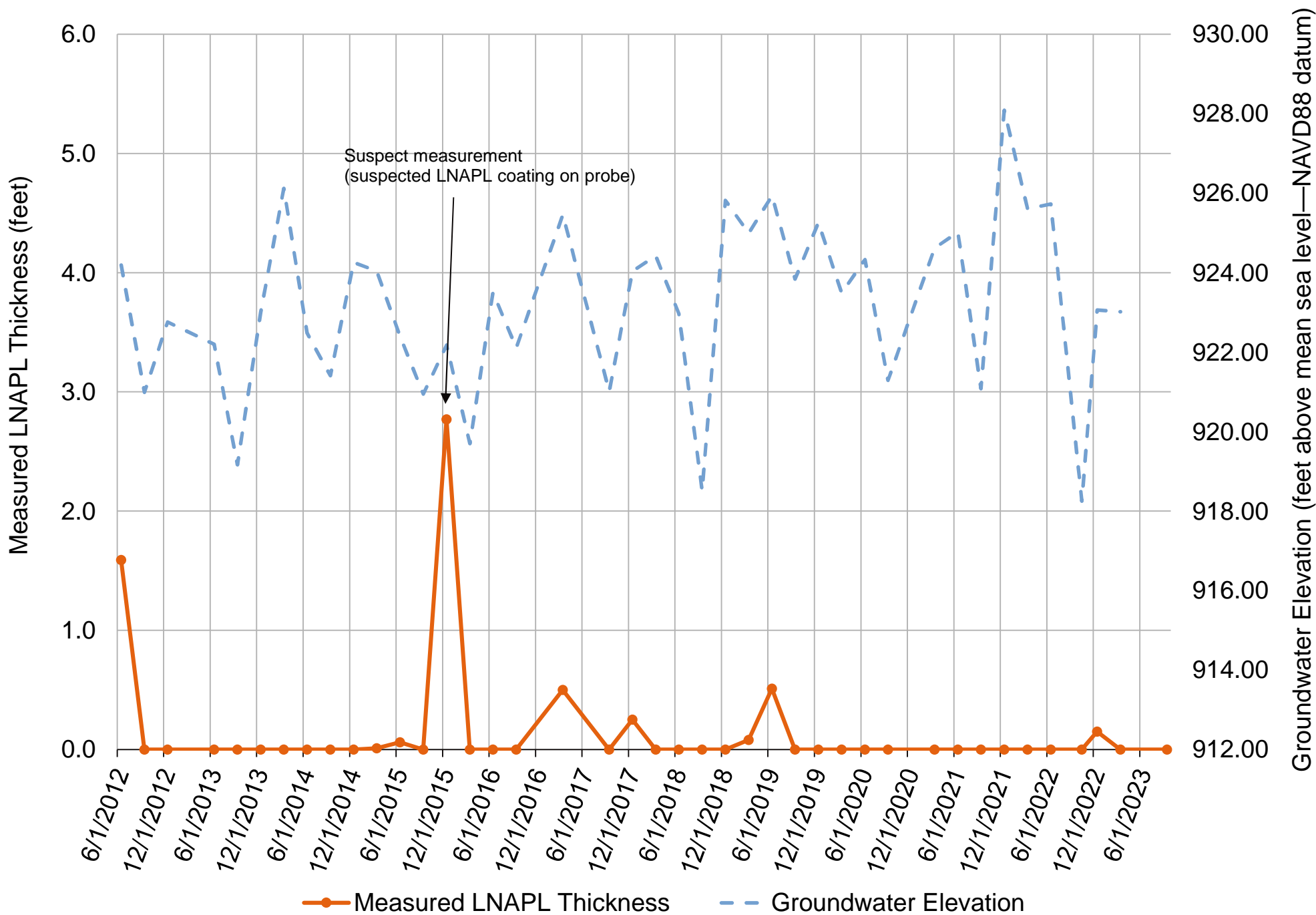
LNAPL Thickness Trend Plot PZ-5S



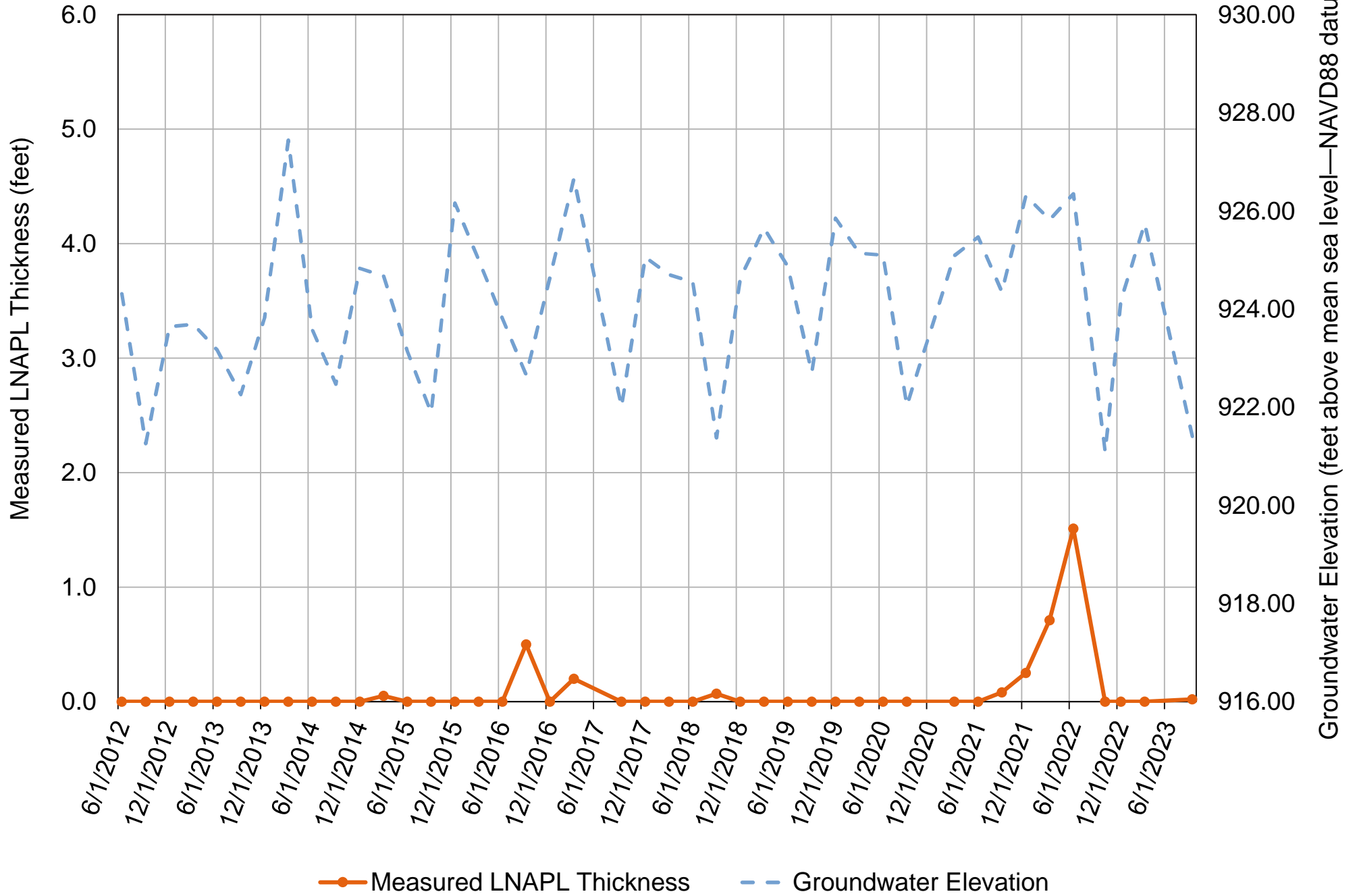
LNAPL Thickness Trend Plot PZ-6S



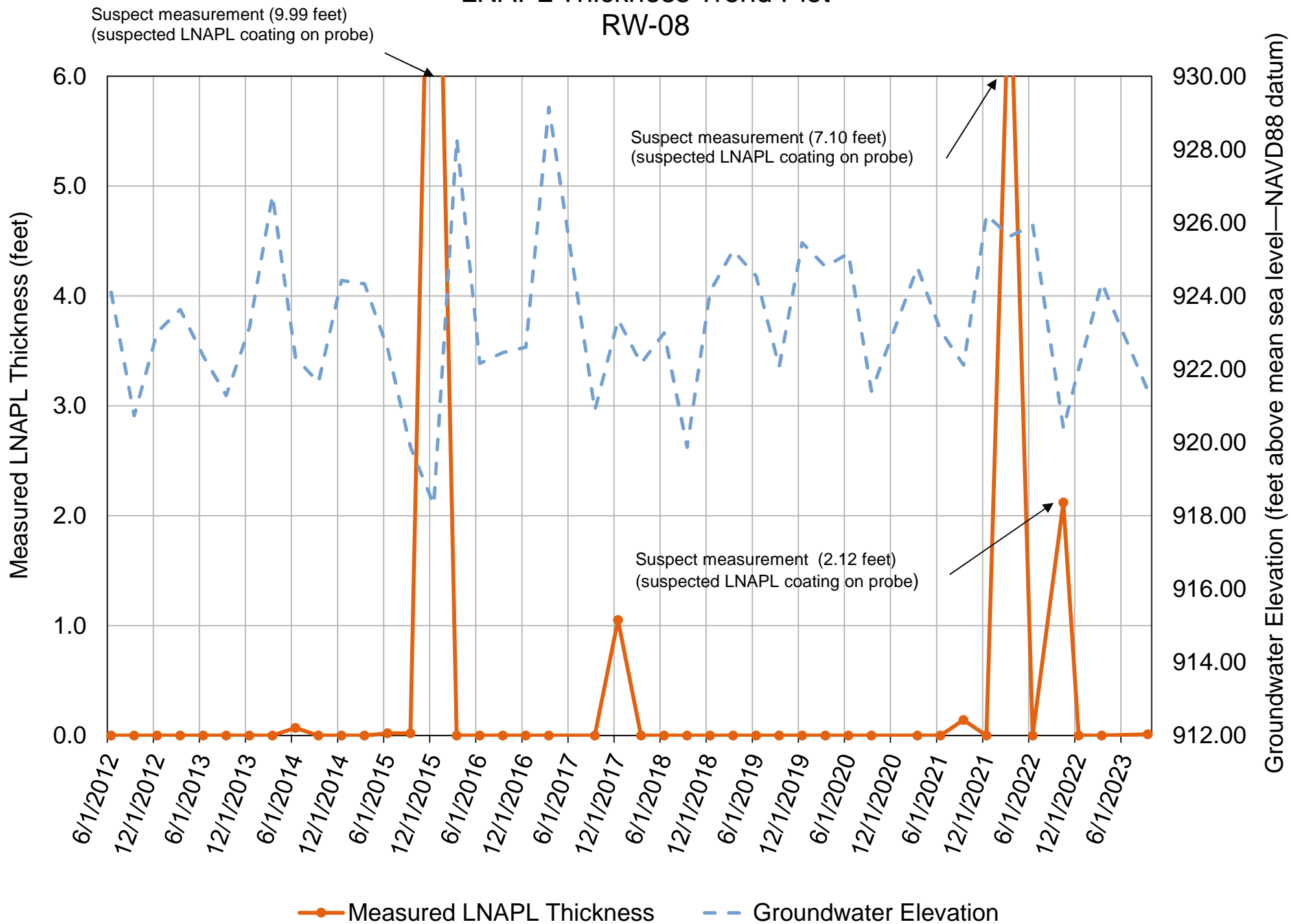
LNAPL Thickness Trend Plot RW-04



LNAPL Thickness Trend Plot RW-07



LNAPL Thickness Trend Plot RW-08



Arcadis U.S., Inc.
1420 5th Avenue, Suite 2400
Seattle
Washington 98101
Phone: 206 325 5254
Fax: 206 325 8218
www.arcadis.com