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June 11, 2020

Ronald Timm Toxics Cleanup Program Dept. of Ecology 3190 160th Ave SE Bellevue, WA 98008-5452

RE: Draft Hydraulic Control and Containment System Passive Operation Pilot Study Report Transmittal Consent Decree No. 07-2-33672-9 SEA: Site Name: BNSF Former Maintenance and Fueling Facility Site Address: Skykomish, WA Facility/Site ID No.: 2104 Cleanup Site ID No.: 34

Dear Mr. Timm:

Enclosed is the Draft Hydraulic Control and Containment System Passive Operation Pilot Study Report for Ecology's review and approval. We look forward to your review and acceptance of this report.

Sincerely,

C D.L

Shane C. DeGross Manager Environmental Remediation, BNSF Railway

cc: Ms. Amy Essig Desai, Farallon Consulting

HYDRAULIC CONTROL AND CONTAINMENT SYSTEM PASSIVE OPERATION PILOT STUDY REPORT

BNSF FORMER MAINTENANCE AND FUELING FACILITY SKYKOMISH, WASHINGTON CONSENT DECREE NO. 07-2-33672-9 SEA

Submitted by: Farallon Consulting, L.L.C. 975 5th Avenue Northwest Issaquah, Washington 98027

Farallon PN: 683-067

For: BNSF Railway Company 605 Puyallup Avenue Tacoma, Washington 98421

June 11, 2020

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1.0 INTRODUCTION

This report provides the results for the 12-month Hydraulic Control and Containment (HCC) System Passive Operation Pilot Study (Pilot Study) conducted at the BNSF Railway Company (BNSF) Former Maintenance and Fueling Facility in Skykomish, Washington (herein referred to as the Site) (Figure 1). As discussed herein, the results of the Pilot Study confirm that passive operation of the HCC system is effective in meeting the Site cleanup objective¹. This report also provides recommendations for ongoing operation of the HCC system.

The purpose of the Pilot Study was to evaluate the HCC system's ability to meet the cleanup objective through passive operation. Passive operation of the HCC system uses the HCC barrier wall and passive groundwater flow through the granular activated carbon (GAC)–filled treatment gates as the primary means of meeting the cleanup objective, and active pumping from the recovery wells as the redundant means of containing contaminated groundwater on the BNSF railyard property. A detailed description of the HCC system is provided in the 2018 Pilot Study Work Plan (Farallon Consulting, L.L.C. [Farallon] 2018) (Work Plan).

1.1 PILOT STUDY ACTIVITIES

The Pilot Study was conducted in accordance with the Work Plan between December 2018 and January 2020 and included collection of baseline groundwater samples and liquid-level gauging measurements at select monitoring locations near the western end of the HCC barrier wall, prior to initiating the 12-month passive operation period. The groundwater samples were submitted for laboratory analysis for total petroleum hydrocarbons quantified as NWTPH-Dx (defined as the sum of diesel- and oil-range organics) using Washington State Department of Ecology (Ecology) Method NWTPH-Dx. The baseline groundwater monitoring event was conducted on December 11 and 12, 2018. Passive operation of the HCC system was initiated on January 18, 2019. Monthly liquid-level gauging measurements and groundwater samples were collected at the monitoring

¹ As defined in the Cleanup Action Plan for BNSF Former Maintenance and Fueling Facility, Skykomish, Washington (Ecology 2007a); the cleanup objective for the HCC system is to prevent light nonaqueous-phase liquid and groundwater with total petroleum hydrocarbon concentrations exceeding the Site-specific groundwater remediation level of 477 micrograms per liter from migrating from the BNSF railyard.

locations sampled during the baseline sampling event. Groundwater monitoring events were conducted monthly between February and December 2019. The recovery well pumps and groundwater treatment system were operated each month for a short period of time to ensure all components of the redundant HCC system could be activated to function as the redundant system. Monitoring results were evaluated monthly to assess the effectiveness of passive operation.

As discussed at the January 14, 2020 meeting with BNSF, Ecology, and Farallon, and approved by Ecology on January 24, 2020, passive operation of the HCC system will continue through June 2020 pending completion of Ecology's review of the 12-month pilot study results (i.e., this report).

1.2 REPORT ORGANIZATION

The remainder of this report is organized into the following sections:

- Section 2, Groundwater Monitoring, describes the groundwater monitoring conducted during the Pilot Study.
- Section 3, Maintenance and Monthly Testing of Treatment System, describes the maintenance and monthly testing of recovery well pumps and the groundwater treatment system during the Pilot Study.
- Section 4, Results and Discussion, describes the groundwater analytical and liquid-level gauging measurement results.
- Section 5, Conclusions, provides conclusions for the Pilot Study.
- Section 6, Proposed Passive Operations and Monitoring, provides the protocols for operating and monitoring the performance of the HCC system during passive operations.
- Section 7, Bibliography, provides a list of the documents used in preparing this report.

2.0 GROUNDWATER MONITORING

The Pilot Study monitoring well network consisted of 17 locations near the western end of the HCC barrier wall (Figure 2). Groundwater samples were collected monthly from the following locations:

- Piezometers PZ-7S and PZ-8.
- Monitoring wells EW-1, 5-W-43, GW-1, and GW-2.
- West Gate sentry wells S2-AU, S2-AD, S2-BU, and S2-BD.
- The west and east vault oil-water separator (OWS) chambers of the West Gate and Far West Gate (locations WG-WV, WG-EV, FWG-WV, and FWG-EV). The groundwater samples collected from the OWS chambers were obtained from the northern (downgradient) side of the baffle walls in the OWS chambers.

During the baseline and monthly groundwater monitoring events, groundwater levels and light nonaqueous-phase liquid (LNAPL) thicknesses were gauged at the 14 locations identified above and at 3 additional locations where LNAPL has been observed historically: piezometer PZ-6S and recovery wells RW-05 and RW-06 (Figures 2 and 3).

Groundwater samples were analyzed by TestAmerica Laboratories, Inc. of Tacoma, Washington. Laboratory analytical reports are provided in Attachment A. The groundwater analytical results were independently validated by Sayler Data Solutions, Inc. of Kirkland, Washington. The data validation results indicate that the groundwater analytical data are suitable for the intended use of assessing Site groundwater quality. Data validation reports are provided in Attachment B.

3.0 MAINTENANCE AND MONTHLY TESTING OF TREATMENT SYSTEM

Glacier Environmental Services, Inc. (Glacier) of Mukilteo, Washington performed monthly inspection and maintenance of the recovery well pumps and groundwater treatment system in accordance with the procedures described in the Work Plan, HCC O&M Manual (AECOM Environmental 2011), and the Addendum to the HCC O&M Manual (Farallon 2014), which included operating the recovery well pumps and groundwater treatment equipment for approximately 4 hours each month to prevent the buildup of biofouling and ensure the system is operational and could be activated to reverse the hydraulic gradient across the West Gate, if needed. Glacier inspected the treatment system monthly, including a visual check of components such as the piping, instrumentation, equalization tanks, OWS, sand filters, GAC vessels, and building temperature controls. Glacier also inspected the oil skimmers and OWS chambers in the West Gate and Far West Gate quarterly and oversaw the removal of oily water from the oil skimmer tanks and West Gate OWS chambers with a vacuum truck on November 22, 2019; no measurable thickness of LNAPL was present. In addition, Glacier conducted compliance monitoring of the HCC treatment system in accordance with the National Pollutant Discharge Elimination System Permit No. WA0032123 issued by Ecology. Compliance monitoring results were provided to Ecology under separate cover.

4.0 RESULTS AND DISCUSSION

The groundwater analytical and LNAPL thickness data were evaluated after each monthly groundwater sampling event to confirm that LNAPL and groundwater with NWTPH-Dx concentrations exceeding the Site-specific remediation level (RL) of 477 micrograms per liter (μ g/l) and absence of sheen were not migrating to the north or west beyond the West Gate.

4.1 NWTPH-DX RESULTS

The NWTPH-Dx analytical results are reported as diesel-range organics (DRO) and oil-range organics (ORO) fractions, which are summed to give the total NWTPH-Dx concentration. If both DRO and ORO fractions were detected, the total NWTPH-Dx concentration was calculated as the sum of the reported DRO and ORO concentrations. If either the DRO or ORO fraction was not detected, half the method detection limit (MDL) was used for the non-detected fraction in the NWTPH-Dx calculation.

The Work Plan defined two different Site-specific groundwater NWTPH-Dx target concentration objectives for the Pilot Study:

- Reported concentrations in down-gradient sentry wells S2-AD and S2-BD were not to exceed one-half the RL (238 μg/l); and
- Reported concentrations in monitoring wells EW-1, 5-W-43, GW-1, and GW-2, and piezometers PZ-7S and PZ-8 were not to exceed the RL (477 μg/l and absence of sheen).

All eight monitoring locations met their respective target concentration objectives for the Pilot Study. NWTPH-Dx was not detected in any of the monthly groundwater samples collected from down-gradient sentry wells S2-AD and S2-BD (Figures 1 and 2; Table 1). NWTPH-Dx was detected at concentrations ranging from non-detect to 272 μ g/l in monthly groundwater samples collected from monitoring wells EW-1, 5-W-43, GW-1, GW-2, PZ-7S, and PZ-8 (Figure 2; Table 1).

NWTPH-Dx concentrations in up-gradient monitoring locations within the West Gate and Far West Gate were generally similar to, or less than, baseline conditions except for sentry well S2-

BU and the east vault OWS chamber of the West Gate (WG-EV), where concentrations appeared to increase from baseline conditions. While the baseline reported NWTPH-Dx concentration in S2-BU was less than the MDL, concentrations in this well from 2013 to 2018 have historically fluctuated between 30 and 820 μ g/l, and concentrations reported during the Pilot Study passive operations were within this range (144 to 760 μ g/l). The reported NWTPH-Dx concentration for the east vault OWS chamber of the West Gate (WG-EV) during passive operations ranged from 620 to 1,010 μ g/l. These concentrations were within the range reported for three groundwater samples collected from WG-EV between September 2014 and April 2015 (520 to 1,130 μ g/l).

The Pilot Study results for sentry well S2-BU and the WG-EV OWS chamber demonstrate the effectiveness of the OWS and GAC-filled treatment gates in meeting the cleanup objective and the Site-specific RL during passive operation of the HCC system.

Slight increases in the reported NWTPH-Dx concentrations were expected at the WG-EV OWS chamber and sentry well S2-BU during passive HCC system operations, because the OWS and GAC-filled treatment gates are used as the primary means of meeting the cleanup objectives. As noted in the Work Plan, only groundwater flowing into the east vault of the West Gate contains petroleum hydrocarbon concentrations exceeding the RL. Each treatment gate includes an OWS followed by GAC-filled treatment chambers. Monitoring locations down-gradient of the WG-EV OWS chamber showed a decreasing trend in NWTPH-Dx concentrations when correlated with distance from the WG-EV OWS chamber. NWTPH-Dx was not detected in any of the monthly groundwater samples collected from sentry well S2-BD, which is down-gradient of the WG-EV OWS chamber and sentry well S2-BU. The Pilot Study results confirm the effectiveness of passive treatment through the OWS and GAC-filled vaults.

4.2 LNAPL MONITORING

LNAPL measurements were evaluated during each monthly event (Table 2). LNAPL was not observed in monitoring locations west and north of the West Gate (S2-AD, S2-BD, EW-1, 5-W-43, GW-1, GW-2, PZ-7S and PZ-8), indicating the HCC barrier wall effectively contained the LNAPL, the OWS chambers within the West Gate effectively removed the LNAPL, and the extent of LNAPL remained stable south of the West Gate during passive operations.

LNAPL was measured at thicknesses ranging from a light trace to 1.86 feet at the following locations during the Pilot Study:

- PZ-6S;
- RW-05;
- RW-06; and
- East Vault of the West Gate (North and South Chambers).

LNAPL is removed within the OWS chambers in each gate vault prior to groundwater migrating through, and being treated by, the GAC chambers. LNAPL was only observed in the OWS chambers of the east vault of the West Gate during the Pilot Study at trace amounts. Only oily water was removed from the oil skimmer tanks and West Gate OWS chambers with a vacuum truck on November 22, 2019.

The thickest LNAPL measurement was made in monitoring location PZ-6S at 1.86 feet during the July 2019 monthly monitoring event. Historic (2012 through 2018) LNAPL thickness measurements at this location ranged from a heavy trace to 2.95 feet. The LNAPL thicknesses measured within location PZ-6S during the Pilot Study were within the typical range previously measured in this piezometer. Only light to heavy traces of LNAPL were periodically measured at locations RW-05 and RW-06 during the Pilot Study, comparable to historic measurements at these locations.

The LNAPL measurements indicate the extent of LNAPL remained stable near the West Gate and did not migrate to the west or north during passive operation of the HCC system.

5.0 CONCLUSIONS

The Pilot Study results confirm that passive operation of the HCC system is effective in meeting the cleanup objective. LNAPL and NWTPH-Dx concentrations in groundwater exceeding the RL did not migrate past the HCC barrier wall during passive operation of the HCC system. These results demonstrate the effectiveness of the barrier wall and GAC-filled treatment gates in passively meeting the cleanup objective. It is recommended that the HCC system continue to be operated in a passive-mode with groundwater monitoring conducted in accordance with the Consent Decree (Ecology 2007b) and the draft Long-Term Monitoring Plan² (Farallon 2019).

² Draft Long-Term Monitoring Plan, BNSF Former Maintenance and Fueling Facility, Skykomish, Washington. The draft Long-Term Monitoring Plan was submitted to Ecology on November 26, 2019, in accordance with the Consent Decree following termination of the hot water flushing remediation system at the Skykomish School and is pending Ecology review.

6.0 PROPOSED PASSIVE OPERATIONS AND MONITORING

In accordance with the draft Long-Term Monitoring Plan (Farallon 2019), locations down-gradient of the HCC system gates and barrier wall (gate wells GW-1 through GW-4 and monitoring well 5-W-43) will be gauged and sampled for NWTPH-Dx semiannually for 2 years and annually thereafter (Figure 1). In addition, down-gradient sentry wells in each treatment gate (S1-AD, S1-BD, S2-AD, S2-BD, S3-AD, S3-BD, S3-CD, S4-AD, S4-BD, and S4-CD) will be sampled with the same frequency. Results from the monitoring events will be used to evaluate the long-term effectiveness of passive operation of the HCC system.

The minimum effective lifespan of the GAC installed in the east vault of the West Gate, which is the only gate with NWTPH-Dx concentrations in groundwater exceeding the RL, was estimated to be 5 years in September 2016 based on historical groundwater monitoring data and groundwater flux data from pilot testing conducted at the West Gate between 2014 and 2015. It was estimated that breakthrough of the east vault GAC would occur in the fall of 2021, at the earliest, assuming continued passive (no-pumping) operation of the HCC system. The parameter values and assumptions used to calculate the breakthrough estimate are provided in the Work Plan and the 2017 HCC Optimization and Pilot Testing Report (Farallon 2017). In 2021, the GAC media in the east vault of the West Gate will either be replaced or sampled to determine GAC condition and remaining adsorptive capacity.

Criteria that would trigger testing of GAC media in the treatment gates to determine GAC condition and remaining adsorptive capacity include:

- An exceedance of the NWTPH-Dx RL, confirmed by follow-up sampling, in a groundwater sample collected from a down-gradient sentry well (S1-AD, S1-BD, S2-AD, S2-BD, S3-AD, S3-BD, S3-CD, S4-AD, S4-BD, and S4-CD), indicating breakthrough; or
- An estimate that the lifespan of the GAC is about to expire based on calculations using data (i.e., flow rates, petroleum loading factors, etc.) collected during the 2014 through 2015 pilot testing (Farallon 2017).

If testing indicates GAC media in any of the treatment gates needs to be replaced, construction work will be scheduled for summer/early fall during low-water conditions to minimize the volume of groundwater that would need to be pumped from the gate and managed. Active pumping and groundwater treatment would be used prior to, and during, replacement of the GAC media. Operation would switch back to passive-mode once the GAC media was replaced.

Criteria that would trigger active groundwater pumping and treatment operations includes the following:

- If GAC testing indicates that the media in any of the treatment gates needs to be replaced; or
- An exceedance of NWTPH-Dx RL, confirmed by follow-up sampling within a month, in a groundwater sample collected from monitoring well 5-W-43 and gate wells GW-1 through GW-4; or
- Evidence that LNAPL is migrating beyond the West Gate as indicated by the liquid level gauging data collected at HCC system monitoring locations west and north of the West Gate (monitoring well 5-W-43 and gate wells GW-1 through GW-4).

Active pumping and groundwater treatment will continue while an investigation is conducted into the source and cause of the release past the barrier wall, and a resolution is implemented. Once the source of the release has been identified and contained, passive operation of the HCC system will resume. Criteria for resuming passive operation of the HCC system include one or more of the following:

- Replacement of the GAC media;
- Confirmation that the reported NWTPH-Dx concentrations are less than the RL in a groundwater sample collected from monitoring well 5-W-43 or gate wells GW-1 through GW-4; and
- Confirmation that the LNAPL is not continuing to migrate beyond the West Gate as indicated by the liquid level gauging data collected at HCC system monitoring locations west and north of the West Gate (monitoring well 5-W-43 and gate wells GW-1 through GW-4).

7.0 **BIBLIOGRAPHY**

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 - ——. 2007b. Final Consent Decree for BNSF Railway, Former Maintenance and Fueling Facility, Skykomish, Washington. October.

FIGURES

HYDRAULIC CONTROL AND CONTAINMENT SYSTEM PASSIVE OPERATION PILOT STUDY REPORT BNSF Former Maintenance and Fueling Facility Skykomish, Washington Consent Decree No. 07-2-33672-9 SEA









	Concrete Sidewolk
ROAD AVENU	
2A-W-40	
	Wood
Washington Bellingham Seattle	FIGURE 2
Oregon Portland Baker City California Sacramento Irvine farallonconsulting.com	HCC SYSTEM PASSIVE OPERATION PILOT STUDY TOTAL PETROLEUM HYDROCARBONS IN GROUNDWATER BNSF FORMER MAINTENANCE AND FUELING FACILITY SKYKOMISH, WASHINGTON
cked By: PK	Date: 1/7/2020 Disk Reference: 683-067-OPT1



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7	
Washington	
Bellingham Seattle	FIGURE 3
Oregon Portland Baker City	HCC SYSTEM PASSIVE OPERATION PILOT STUDY
Colifornia	WEST GATE
Sacramento Irvine	BNSF FORMER MAINTENANCE AND FUELING FACILITY
farallonconsulting com	SKYKOMISH, WASHINGTON
raranonconsulung.com	FARALLON PN: 683-067
cked By: PK	Date: 1/7/2020 Disk Reference: 683-063-OPT2.dwg

TABLES

HYDRAULIC CONTROL AND CONTAINMENT SYSTEM PASSIVE OPERATION PILOT STUDY REPORT BNSF Former Maintenance and Fueling Facility Skykomish, Washington Consent Decree No. 07-2-33672-9 SEA

HCC System Passive Operation Pilot Study

Total Petroleum Hydrocarbon Concentrations in Groundwater

BNSF Former Maintenance and Fueling Facility

Skykomish, Washington

			DRO (μg/l) ¹			ORO $(\mu g/l)^1$			Calculated
Well	Date	Sample Identification	Result	MDL	MRL	Result	MDL	MRL	NWTPH-Dx ² (µg/l)
			Do	wn-Gradient Se	ntry Wells (Wes	st Gate)			
	12/12/2018	S2-AD-121218	< 62	62	62	< 92	92	92	< 77
	2/19/2019	S2-AD-021919	< 62	62	62	< 91	91	91	< 77
	3/19/2019	S2-AD-031919	< 63	63	63	< 93	93	93	< 78
	4/16/2019	S2-AD-041619	< 62	62	62	< 92	92	92	< 77
	5/14/2019	S2-AD-051419	< 62	62	62	< 91	91	91	< 77
\$2-AD	6/18/2019	S2-AD-061819	< 62	62	62	< 92	92	92	< 77
52-AD	7/25/2019	S2-AD-072519	< 62	62	62	< 92	92	92	< 77
	8/20/2019	S2-AD-082019	< 62	62	62	< 91	91	91	< 77
	9/19/2019	S2-AD-091919	< 62	62	62	< 91	91	91	< 77
	10/17/2019	S2-AD-101719	< 62	62	62	< 91	91	91	< 77
	11/19/2019	S2-AD-111919	< 62	62	62	< 91	91	91	< 77
	12/18/2019	S2-AD-121819	< 62	62	62	< 91	91	91	< 77
	12/12/2018	S2-BD-121218	< 62	62	62	< 92	92	92	< 77
	2/19/2019	S2-BD-021919	< 62	62	62	< 91	91	91	< 77
	3/19/2019	S2-BD-031919	< 62	62	62	< 91	91	91	< 77
	4/16/2019	S2-BD-041619	< 62	62	62	< 92	92	92	< 77
	5/14/2019	S2-BD-051419	< 62	62	62	< 91	91	91	< 77
S7 DD	6/18/2019	S2-BD-061819	< 62	62	62	< 91	91	91	< 77
52-DD	7/25/2019	S2-BD-072519	< 65	65	65	< 96	96	96	< 81
	8/20/2019	S2-BD-082019	< 62	62	62	< 91	91	91	< 77
	9/19/2019	S2-BD-091919	< 61	61	61	< 91	91	91	< 76
	10/17/2019	S2-BD-101719	< 61	61	61	< 91	91	91	< 76
	11/19/2019	S2-BD-111919	< 62	62	62	< 92	92	92	< 77
	12/18/2019	S2-BD-121819	< 62	62	62	< 91	91	91	< 77
Site-Specific Grou	undwater Target	Level (1/2 the Reme	diation Level)						238

HCC System Passive Operation Pilot Study

Total Petroleum Hydrocarbon Concentrations in Groundwater

BNSF Former Maintenance and Fueling Facility

Skykomish, Washington

				DRO $(\mu g/l)^1$ ORO $(\mu g/l)^1$				Calculated	
Well	Date	Sample Identification	Result	MDL	MRL	Result	MDL	MRL	NWTPH-Dx ² (µg/l)
		D	own-Gradient I	Monitoring Loca	tions (North an	d West of West	Gate)		
	12/11/2018	PZ-7S-12118	< 62	62	62	< 91	91	91	< 77
	2/20/2019	PZ-7S-022019	< 62	62	62	110	91	91	141
	3/19/2019	PZ-75-031919	< 62	62	62	< 91	91	91	< 77
	4/16/2019	PZ-7S-041619	92	62	62	180	91	91	272
	5/14/2019	P2-7S-051419	< 62	62	62	< 91	91	91	< 77
P7-78	6/18/2019	PZ-7S-061819	< 63	63	63	< 92	92	92	< 78
12-75	7/25/2019	PZ-7S-072519	< 61	61	61	< 91	91	91	< 76
	8/20/2019	PZ-7S-082019	< 62	62	62	120	91	91	151
	9/19/2019	PZ-75-091919	< 62	62	62	< 91	91	91	< 77
	10/17/2019	PZ-7S-101719	< 62	62	62	92	91	91	123
	11/19/2019	PZ-7S-111919	< 62	62	62	120	92	92	151
	12/18/2019	PZ-7S-121819	< 63	63	63	110	92	92	142
	12/11/2018	PZ-8-121118	< 62	62	62	< 91	91	91	< 77
	2/20/2019	PZ-8-022019	< 62	62	62	< 91	91	91	< 77
	3/19/2019	PZ-8-031919	< 63	63	63	< 92	92	92	< 78
	4/16/2019	PZ-8-041619	< 62	62	62	< 91	91	91	< 77
	5/14/2019	P2-8-051419	< 62	62	62	< 91	91	91	< 77
D7 9	6/18/2019	PZ-8-061819	< 62	62	62	< 91	91	91	< 77
FZ-0	7/25/2019	PZ-8-072519	< 63	63	63	< 92	92	92	< 78
	8/20/2019	PZ-8-082019	< 62	62	62	< 91	91	91	< 77
	9/19/2019	PZ-8-091919	< 62	62	62	< 91	91	91	< 77
	10/17/2019	PZ-8-101719	< 62	62	62	< 91	91	91	< 77
	11/19/2019	PZ-8-111919	< 66	66	66	< 97	97	97	< 82
	12/18/2019	PZ-80-121819	< 63	63	63	< 93	93	93	< 78
Site-Specific Grou	undwater Remed	iation Level							477

HCC System Passive Operation Pilot Study

Total Petroleum Hydrocarbon Concentrations in Groundwater

BNSF Former Maintenance and Fueling Facility

Skykomish, Washington

			DRO (µg/l) ¹ ORO (µg/l) ¹				Calculated		
Well	Date	Sample Identification	Result	MDL	MRL	Result	MDL	MRL	NWTPH-Dx ² (µg/l)
	-	D	own-Gradient I	Monitoring Loca	tions (North an	d West of West	Gate)		
	12/12/2018	EW-1-121218	< 62	62	62	< 91	91	91	< 77
	2/20/2019	EW-1-022019	< 62	62	62	< 91	91	91	< 77
	3/19/2019	EW-1-031919	< 62	62	62	< 92	92	92	< 77
	4/16/2019	EW-1-041619	< 62	62	62	< 91	91	91	< 77
	5/14/2019	EW-1-051419	< 62	62	62	< 91	91	91	< 77
EW_1	6/18/2019	EW-1-061819	< 62	62	62	< 91	91	91	< 77
L W -1	7/25/2019	EW-1-072519	< 62	62	62	< 92	92	92	< 77
	8/20/2019	EW1-082019	< 62	62	62	< 91	91	91	< 77
	9/19/2019	EW-1-091919	< 62	62	62	< 91	91	91	< 77
	10/17/2019	EW-1-101719	< 62	62	62	< 91	91	91	< 77
	11/19/2019	EW-1-111919	< 63	63	63	< 94	94	94	< 79
	12/18/2019	EW-1-121819	< 63	63	63	< 93	93	93	< 78
	12/11/2018	5-W-43-121118	< 61	61	61	< 90	90	90	< 76
	2/20/2019	5-W-43-022019	< 62	62	62	< 91	91	91	< 77
	3/19/2019	5-W-43-031919	< 62	62	62	< 92	92	92	< 77
	4/16/2019	5-W-43-041619	< 62	62	62	< 91	91	91	< 77
	5/14/2019	5-W-43-051419	< 62	62	62	< 91	91	91	< 77
5 W 42	6/18/2019	S-W-43-061819	< 62	62	62	< 91	91	91	< 77
5-11-45	7/25/2019	S-W-43-072519	< 61	61	61	< 90	90	90	< 76
	8/20/2019	5-W-43-082019	< 62	62	62	< 91	91	91	< 77
	9/19/2019	5-W-43-091919	< 62	62	62	< 92	92	92	< 77
	10/17/2019	5-W-43-101719	< 62	62	62	< 91	91	91	< 77
	11/19/2019	5-W-43-111919	< 64	64	64	< 94	94	94	< 79
	12/18/2019	5-W-43-121819	< 62	62	62	< 92	92	92	< 77
Site-Specific Grou	Indwater Remed	iation Level							477

HCC System Passive Operation Pilot Study

Total Petroleum Hydrocarbon Concentrations in Groundwater

BNSF Former Maintenance and Fueling Facility

Skykomish, Washington

			DRO $(\mu g/l)^1$ ORO $(\mu g/l)^1$				Calculated		
Well	Date	Sample Identification	Result	MDL	MRL	Result	MDL	MRL	NWTPH-Dx ² (µg/l)
		D	own-Gradient I	Monitoring Loca	tions (North an	d West of West	Gate)		
	12/11/2018	GW-1-121118	< 62	62	62	< 92	92	92	< 77
	2/20/2019	GW-1-022019	< 62	62	62	< 91	91	91	< 77
	3/19/2019	GW-1-031919	< 62	62	62	< 91	91	91	< 77
	4/16/2019	GW-1-041619	< 62	62	62	< 91	91	91	< 77
	5/14/2019	GW-1-051419	< 62	62	62	< 91	91	91	< 77
GW 1	6/18/2019	GW-1-061819	< 62	62	62	< 91	91	91	< 77
0-1	7/25/2019	GW-1-072519	< 61	61	61	< 91	91	91	< 76
	8/20/2019	GW-1-082019	< 62	62	62	< 91	91	91	< 77
	9/19/2019	GW-1-091919	< 62	62	62	< 91	91	91	< 77
	10/17/2019	GW-1-101719	< 61	61	61	< 91	91	91	< 76
	11/19/2019	GW-1-111919	< 65	65	65	110	95	95	143
	12/18/2019	GW-1-121819	< 62	62	62	< 92	92	92	< 77
	12/11/2018	GW-2-121118	130 J	62	62	270 J	91	91	400 J
	2/20/2019	GW-2-022019	< 62	62	62	< 91	91	91	< 77
	3/19/2019	GW-2-031919	< 62	62	62	110	91	91	141
	4/16/2019	GW-2-041619	< 62	62	62	< 91	91	91	< 77
	5/14/2019	GW-2-051419	< 62	62	62	< 91	91	91	< 77
GW 2	6/18/2019	GW-2-061819	< 63	63	63	< 93	93	93	< 78
0.0-2	7/25/2019	GW-2-072519	< 62	62	62	< 91	91	91	< 77
	8/20/2019	GW-2-082019	< 63	63	63	< 93	93	93	< 78
	9/19/2019	GW-2-091919	< 62	62	62	< 91	91	91	< 77
	10/17/2019	GW-2-101719	< 62	62	62	< 91	91	91	< 77
	11/19/2019	GW-2-111919	< 62	62	62	< 91	91	91	< 77
	12/18/2019	GW-2-121819	< 62	62	62	< 91	91	91	< 77
Site-Specific Grou	Indwater Remed	iation Level							477

HCC System Passive Operation Pilot Study

Total Petroleum Hydrocarbon Concentrations in Groundwater

BNSF Former Maintenance and Fueling Facility

Skykomish, Washington

			DRO $(\mu g/l)^1$				Calculated		
Well	Date	Sample Identification	Result	MDL	MRL	Result	MDL	MRL	NWTPH-Dx ² (µg/l)
		Up-(Gradient Monit	oring Locations	(Within West G	ate and Far W	est Gate)		
	12/12/2018	S2-AU-121218	< 62	62	62	< 91	91	91	< 77
	2/19/2019	S2-AU-021919	< 61	61	61	< 91	91	91	< 76
	3/19/2019	S2-AU-031919	< 62	62	62	< 92	92	92	< 77
	4/16/2019	S2-AU-041619	< 62	62	62	< 91	91	91	< 77
	5/14/2019	S2-AU-051419	< 62	62	62	< 91	91	91	< 77
\$2-AU	6/18/2019	S2-AU-061819	< 64	64	64	< 95	95	95	< 80
52-A0	7/25/2019	S2-AU-072519	< 62	62	62	< 91	91	91	< 77
	8/20/2019	S2-AU-082019	< 62	62	62	< 91	91	91	< 77
	9/19/2019	S2-AU-091919	< 62	62	62	< 91	91	91	< 77
	10/17/2019	S2-2-AU-101719	< 61	61	61	< 91	91	91	< 76
	11/19/2019	S2-AU-111919	< 62	62	62	< 91	91	91	< 77
	12/18/2019	S2-AU-121819	< 62	62	62	< 91	91	91	< 77
	12/12/2018	S2-BU-121218	< 62	62	62	< 91	91	91	< 77
	2/19/2019	S2-BU-021919	290	61	61	270	91	91	560
	3/19/2019	S2-BU-031919	250	62	62	120	91	91	370
	4/16/2019	S2-BU-041619	380	62	62	380	91	91	760
	5/14/2019	S2-BU-051419	280	61	61	130	91	91	410
S2 D11	6/18/2019	S2-BU-061819	190	62	62	160	91	91	350
52-BU	7/25/2019	S2-BU-072519	190	62	62	130	92	92	320
	8/20/2019	S2-BU-082019	98	62	62	< 91	91	91	144
	9/19/2019	S2-BU-091919	420	62	62	200	91	91	620
	10/17/2019	S2-BU-101719	390	61	61	260	91	91	650
	11/19/2019	S2-BU-111919	200	62	62	170	92	92	370
	12/18/2019	S2-BU-121819	110	62	62	100	91	91	210

HCC System Passive Operation Pilot Study

Total Petroleum Hydrocarbon Concentrations in Groundwater

BNSF Former Maintenance and Fueling Facility

Skykomish, Washington

				DRO (μg/l) ¹			ORO (µg/l) ¹			
Well	Date	Sample Identification	Result	MDL	MRL	Result	MDL	MRL	NWTPH-Dx ² (µg/l)	
		Up-	Gradient Monit	oring Locations	(Within West G	ate and Far W	est Gate)			
	12/12/2018	WG-WV-121218	570	63	63	470	92	92	1,040	
	2/19/2019	WG-WV-021919	220	62	62	300	91	91	520	
	3/19/2019	WG-WV-031919	190	62	62	130	91	91	320	
	4/16/2019	WG-WV-041619	170	62	62	250	92	92	420	
	5/14/2019	WG-WV-051419	220	62	62	210	91	91	430	
WG-WV	6/18/2019	WG-WV-061819	< 62	62	62	99	91	91	130	
WG-WV	7/25/2019	WG-WV-072519	< 62	62	62	98	91	91	129	
	8/20/2019	WG-WV-082019	270	62	62	500	91	91	770	
	9/19/2019	WG-WV-091919	240	62	62	140	91	91	380	
	10/17/2019	WG-WV-101719	70	62	62	120	91	91	190	
	11/19/2019	WG-WV-111919	76	62	62	180	92	92	256	
	12/18/2019	WG-WV-121819	< 61	61	61	170	91	91	201	
	12/12/2018	WG-EV-121218	< 62	62	62	< 92	92	92	< 77	
	2/19/2019	WG-EV-021919	520	62	62	490	91	91	1,010	
	3/19/2019	WG-EV-031919	520	62	62	280	92	92	800	
	4/16/2019	WG-EV-041619	500	62	62	500	92	92	1,000	
	5/14/2019	WG-EV-051419	520	62	62	310	91	91	830	
WG EV	6/18/2019	WG-EV-061819	390	63	63	340	92	92	730	
WO-EV	7/25/2019	WG-EV-072519	380	62	62	260	91	91	640	
	8/20/2019	WG-EV-082019	390	62	62	230	91	91	620	
	9/19/2019	WG-EV-091919	470	62	62	230	91	91	700	
	10/17/2019	WG-EV-101719	580	61	61	390	91	91	970	
	11/19/2019	WG-EV-111919	450	62	62	410	92	92	860	
	12/18/2019	WG-EV-121819	450	61	61	450	91	91	900	

HCC System Passive Operation Pilot Study

Total Petroleum Hydrocarbon Concentrations in Groundwater

BNSF Former Maintenance and Fueling Facility

Skykomish, Washington

			DRO (µg/l) ¹				Calculated					
Well	Date	Sample Identification	Result	MDL	MRL	Result	MDL	MRL	NWTPH-Dx ² (µg/l)			
Up-Gradient Monitoring Locations (Within West Gate and Far West Gate)												
	12/12/2018	FWG-WV-121218	< 62	62	62	< 91	91	91	< 77			
	2/19/2019	FWG-WV-021919	< 62	62	62	< 91	91	91	< 77			
	3/19/2019	FGW-WV-031919	< 62	62	62	< 92	92	92	< 77			
	4/16/2019	FWG-WV-041619	< 65	65	65	< 96	96	96	< 81			
	5/14/2019	FWG-WV-051419	< 62	62	62	< 91	91	91	< 77			
FWC WV	6/18/2019	FWG-WV-061819	< 62	62	62	< 92	92	92	< 77			
r wo-w v	7/25/2019	FWG-WV-072519	< 62	62	62	< 92	92	92	< 77			
	8/20/2019	FWG-WV-082019	< 62	62	62	110	91	91	141			
	9/19/2019	FWG-WV-091919	< 62	62	62	< 91	91	91	< 77			
	10/17/2019	FWG-WV-101719	< 62	62	62	< 91	91	91	< 77			
	11/19/2019	FWG-WV-111919	< 62	62	62	< 92	92	92	< 77			
	12/18/2019	FWG-WV-121819	< 62	62	62	< 91	91	91	< 77			

HCC System Passive Operation Pilot Study

Total Petroleum Hydrocarbon Concentrations in Groundwater

BNSF Former Maintenance and Fueling Facility

Skykomish, Washington

Farallon PN: 683-067

			DRO (µg/l) ¹				Calculated						
Well	Date	Sample Identification	Result	MDL	MRL	Result	MDL	MRL	NWTPH-Dx ² (µg/l)				
	Up-Gradient Monitoring Locations (Within West Gate and Far West Gate)												
	12/12/2018	FWG-EV-121218	85	62	62	150	91	91	235				
	2/19/2019	FWG-EV-021919	< 61	61	61	< 91	91	91	< 76				
	3/19/2019	FWG-EV-031919	< 62	62	62	< 91	91	91	< 77				
	4/16/2019	FWG-EV-041619	< 62	62	62	< 91	91	91	< 77				
	5/14/2019	FWG-EV-051419	< 62	62	62	< 91	91	91	< 77				
EWG EV	6/18/2019	FWG-EV-061819	68	62	62	200	92	92	268				
T WO-E V	7/25/2019	FWG-EV-072519	< 62	62	62	< 92	92	92	< 77				
	8/20/2019	FWG-EV-082019	73	62	62	150	91	91	223				
	9/19/2019	FWG-EV-091919	< 62	62	62	< 91	91	91	< 77				
	10/17/2019	FWG-EV-101719	< 62	62	62	< 91	91	91	< 77				
	11/19/2019	FWG-EV-111919	< 62	62	62	< 91	91	91	< 77				
	12/18/2019	FWG-EV-121819	< 62	62	62	< 91	91	91	< 77				

NOTES:

Results in **bold** denote concentrations exceeding the applicable target level for the specific down-gradient location (one-half the Remediation Level or the Remediation Level).

Green highlighted rows indicate baseline conditions before the start of HCC passive operations.

< denotes analyte not detected at or exceeding the reported concentration.

¹Analyzed by Washington State Department of Ecology (Ecology) Method NWTPH-Dx without silica gel cleanup.

²Sum of DRO and ORO, using half the MDL for non-detect results.

DRO = total petroleum hydrocarbons as diesel-range organics

HCC = Hydraulic Control and Containment

J = reported concentration is an estimated value

MDL = method detection limit

MRL = method reporting limit

 $\mu g/l = micrograms per liter$

ORO = total petroleum hydrocarbons as oil-range organics

	Measuring Point				
	Elevation ¹		Depth to Water ²	Water Elevation ¹	LNAPL Thickness
Location	(feet NAVD88)	Date	(feet)	(feet NAVD88)	(feet)
	Down-Gr	adient Locations (Nor	th and West of West Gat	e)	-
		12/10/2018	13.19	916.81	
		2/19/2019	13.96	916.04	—
		3/19/2019	13.82	916.18	
		4/16/2019	13.28	916.72	—
		5/14/2019	12.87	917.13	—
S2 AD	030	6/17/2019	13.59	916.41	
52-AD	930	7/25/2019	14.02	915.98	
		8/20/2019	14.39	915.61	
		9/16/2019	14.23	915.77	
		10/17/2019	13.81	916.19	
		11/19/2019	13.32	916.68	
		12/16/2019	13.56	916.44	
		12/10/2018	13.31	916.69	
		2/19/2019	12.41	917.59	
		3/19/2019	12.24	917.76	
		4/16/2019	11.87	918.13	
		5/14/2019	11.61	918.39	
S2 DD	020	6/17/2019	12.48	917.52	
S2-BD	950	7/25/2019	12.84	917.16	
		8/20/2019	13.33	916.67	
		9/16/2019	13.23	916.77	—
		10/17/2019	12.66	917.34	—
		11/19/2019	12.28	917.72	—
		12/16/2019	12.27	917.73	

	Measuring Point				
	Elevation ¹		Depth to Water ²	Water Elevation ¹	LNAPL Thickness
Location	(feet NAVD88)	Date	(feet)	(feet NAVD88)	(feet)
	Down-Gr	adient Locations (Nor	th and West of West Gat	ce)	
		12/10/2018	7.83	922.57	_
		2/19/2019	7.86	922.54	_
		3/19/2019	7.43	922.97	—
		4/16/2019	5.99	924.41	
		5/14/2019	6.90	923.50	—
D7 75	030 /	6/17/2019	7.60	922.80	_
12-73	930.4	7/25/2019	8.19	922.21	
		8/20/2019	10.16	920.24	
		9/16/2019	10.73	919.67	
		10/17/2019	7.65	922.75	_
		11/19/2019	6.54	923.86	
		12/16/2019	6.65	923.75	—
		12/10/2018	10.05	919.43	—
		2/19/2019	10.05	919.43	—
		3/19/2019	9.73	919.75	_
		4/16/2019	9.00	920.48	—
		5/14/2019	9.17	920.31	
D7 8	020 48	6/17/2019	9.81	919.67	
PZ-8	929.40	7/25/2019	10.19	919.29	
		8/20/2019	11.24	918.24	
		9/16/2019	11.51	917.97	
		10/17/2019	9.97	919.51	
		11/19/2019	9.31	920.17	—
		12/16/2019	9.40	920.08	

	Measuring Point				
	Elevation ¹		Depth to Water ²	Water Elevation ¹	LNAPL Thickness
Location	(feet NAVD88)	Date	(feet)	(feet NAVD88)	(feet)
	Down-Gr	adient Locations (Nor	th and West of West Gat	e)	
		12/10/2018	10.42	918.30	_
		2/19/2019	10.61	918.11	—
		3/19/2019	9.35	919.37	—
		4/16/2019	9.90	918.82	_
		5/14/2019	9.63	919.09	—
EW 1	028 72	6/17/2019	10.30	918.42	_
L w -1	920.72	7/25/2019	10.68	918.04	_
		8/20/2019	11.40	917.32	
		9/16/2019	11.42	917.30	
		10/17/2019	10.36	918.36	_
		11/19/2019	9.81	918.91	—
		12/16/2019	10.10	918.62	—
		12/10/2018	8.19	917.99	—
		2/19/2019	8.38	917.80	—
		3/19/2019	8.14	918.04	
		4/16/2019	7.53	918.65	
		5/14/2019	7.35	918.83	
5 W 42	026.19	6/17/2019	8.04	918.14	—
5-w-43	920.18	7/25/2019	8.45	917.73	
		8/20/2019	9.09	917.09	
		9/16/2019	9.08	917.10	
		10/17/2019	8.12	918.06	—
		11/19/2019	7.57	918.61	—
		12/16/2019	7.89	918.29	

	Measuring Point				
	Elevation ¹		Depth to Water ²	Water Elevation ¹	LNAPL Thickness
Location	(feet NAVD88)	Date	(feet)	(feet NAVD88)	(feet)
	Down-Gr	adient Locations (Nor	th and West of West Gat	e)	
		12/10/2018	10.73	917.51	
		2/19/2019	11.01	917.23	
		3/19/2019	6.71	921.53	_
		4/16/2019	10.05	918.19	
		5/14/2019	9.61	918.63	
GW 1	028.24	6/17/2019	10.51	917.73	_
0-1	920.24	7/25/2019	11.03	917.21	
		8/20/2019	11.45	916.79	
		9/16/2019	11.33	916.91	
		10/17/2019	10.72	917.52	_
		11/19/2019	10.04	918.20	
		12/16/2019	10.45	917.79	_
		12/10/2018	12.81	917.48	
		2/19/2019	12.93	917.36	
		3/19/2019	12.74	917.55	—
		4/16/2019	12.21	918.08	_
		5/14/2019	11.78	918.51	
GW 2	030 20	6/17/2019	12.51	917.78	
GW-2	930.29	7/25/2019	12.95	917.34	_
		8/20/2019	13.30	916.99	_
		9/16/2019	13.24	917.05	—
		10/17/2019	12.73	917.56	
		11/19/2019	12.23	918.06	
		12/16/2019	12.45	917.84	

	Measuring Point		2		
	Elevation		Depth to Water ²	Water Elevation ¹	LNAPL Thickness
Location	(feet NAVD88)	Date	(feet)	(feet NAVD88)	(feet)
	Up-Gradient Locat	ions (South of, and wi	thin, West Gate and Far	West Gate)	
		12/10/2018	8.40	923.01	Heavy Trace
		2/19/2019	7.69	923.72	0.23
		3/19/2019	7.34	924.07	0.05
		4/16/2019	6.18	925.23	0.05
		5/14/2019	6.98	924.43	0.20
B7 65	021 41	6/17/2019	7.65	923.76	1.06
12-05	951.41	7/25/2019	7.96	923.45	1.86
		8/20/2019	10.25	921.16	0.64
		9/16/2019	10.23	921.18	0.06
		10/17/2019	7.32	924.09	0.04
		11/19/2019	6.57	924.84	0.03
		12/16/2019	6.93	924.48	0.06
		12/10/2018	8.92	919.61	0.01
		2/19/2019	9.24	919.29	Heavy Trace
		3/19/2019	8.98	919.55	—
		4/16/2019	7.13	921.40	—
		5/14/2019	7.15	921.38	Light Trace
DW 05	028 52	6/17/2019	7.83	920.70	Heavy Trace
KW-05	920.33	7/25/2019	8.68	919.85	Light Trace
		8/20/2019	9.01	919.52	Light Trace
		9/16/2019	10.36	918.17	Light Trace
		10/17/2019	7.96	920.57	Light Trace
		11/19/2019	8.57	919.96	Light Trace
		12/16/2019	7.52	921.01	Heavy Trace

	Measuring Point		2						
	Elevation	_	Depth to Water ²	Water Elevation ¹	LNAPL Thickness				
Location	(feet NAVD88)	Date	(feet)	(feet NAVD88)	(feet)				
	Up-Gradient Locations (South of, and within, West Gate and Far West Gate)								
		12/10/2018	8.84	919.69	Light Trace				
		2/19/2019	9.18	919.35	Light Trace				
		3/19/2019	8.97	919.56					
		4/16/2019	7.15	921.38	—				
		5/14/2019	7.15	921.38	Light Trace				
PW 06	028 53	6/17/2019	8.03	920.50	—				
KW-00	928.33	7/25/2019	8.69	919.84	Light Trace				
		8/20/2019	9.04	919.49	Light Trace				
		9/16/2019	10.27	918.26	Light Trace				
		10/17/2019	7.92	920.61	Heavy Trace				
		11/19/2019	8.53	920.00	Sheen				
		12/16/2019	7.53	921.00					
		12/10/2018	13.19	916.81	_				
		2/19/2019	13.95	916.05					
		3/19/2019	13.78	916.22					
		4/16/2019	13.27	916.73					
		5/14/2019	12.86	917.14					
52 AU	020	6/17/2019	13.58	916.42					
52-AU	930	7/25/2019	14.02	915.98					
		8/20/2019	14.39	915.61					
		9/16/2019	14.24	915.76					
		10/17/2019	13.80	916.20					
		11/19/2019	13.30	916.70					
		12/16/2019	13.53	916.47					

	Measuring Point						
	Elevation ¹		Depth to Water ²	Water Elevation ¹	LNAPL Thickness		
Location	(feet NAVD88)	Date	(feet)	(feet NAVD88)	(feet)		
Up-Gradient Locations (South of, and within, West Gate and Far West Gate)							
		12/10/2018	13.3	916.70			
		2/19/2019	12.41	917.59	—		
		3/19/2019	12.24	917.76	—		
		4/16/2019	11.85	918.15			
		5/14/2019	11.61	918.39	—		
S2 BU	030	6/17/2019	12.48	917.52			
52-60	930	7/25/2019	12.85	917.15			
		8/20/2019	13.33	916.67			
		9/16/2019	13.09	916.91			
		10/17/2019	12.65	917.35	—		
		11/19/2019	12.26	917.74			
		12/16/2019	12.27	917.73			
		12/10/2018	8.78	NA			
		2/19/2019	8.05	NA			
		3/19/2019	7.85	NA			
		4/16/2019	7.10	NA			
		5/14/2019	7.18	NA			
WG WV North Chamber	NA	6/17/2019	8.03	NA			
w G-w v-North Chamber	INA	7/25/2019	8.35	NA			
		8/20/2019	9.03	NA			
		9/16/2019	9.11	NA	—		
		10/17/2019	7.96	NA			
		11/19/2019	7.34	NA			
		12/16/2019	7.45	NA			

	Measuring Point					
	Elevation ¹		Depth to Water ²	Water Elevation ¹	LNAPL Thickness	
Location	(feet NAVD88)	Date	(feet)	(feet NAVD88)	(feet)	
Up-Gradient Locations (South of, and within, West Gate and Far West Gate)						
		12/10/2018	8.79	NA	—	
		2/19/2019	8.06	NA		
		3/19/2019	7.85	NA		
		4/16/2019	7.05	NA		
		5/14/2019	7.18	NA		
WG WV South Chamber	NA	6/17/2019	8.03	NA		
WG-WV-South Chamber	INA	7/25/2019	8.35	NA		
		8/20/2019	9.03	NA		
		9/16/2019	9.11	NA	—	
		10/17/2019	7.97	NA	—	
		11/19/2019	7.34	NA		
		12/16/2019	7.45	NA		
		12/10/2018	8.81	923.03	_	
		2/19/2019	8.08	923.76		
		3/19/2019	8.80	923.04	Light Trace	
		4/16/2019	7.14	924.70	Light Trace	
		5/14/2019	7.23	924.61		
WG EV North Chamber	021.84	6/17/2019	8.02	923.82		
WG-EV-North Chamber	951.04	7/25/2019	8.45	923.39		
		8/20/2019	9.04	922.80		
		9/16/2019	9.15	922.69	—	
		10/17/2019	8.01	923.83		
		11/19/2019	7.36	924.48	—	
		12/16/2019	7.52	924.32	Light Trace	

	Measuring Point				
	Elevation ¹		Depth to Water ²	Water Elevation ¹	LNAPL Thickness
Location	(feet NAVD88)	Date	(feet)	(feet NAVD88)	(feet)
	Up-Gradient Locat	tions (South of, and wi	thin, West Gate and Far	West Gate)	
		12/10/2018	8.81	923.03	Light Trace
		2/19/2019	8.05	923.79	Heavy Trace
		3/19/2019	8.80	923.04	Heavy Trace
		4/16/2019	7.12	924.72	Light Trace
		5/14/2019	7.23	924.61	Light Trace
WG EV South Chamber	021.84	6/17/2019	8.02	923.82	Light Trace
WG-EV-South Chamber	751.04	7/25/2019	8.45	923.39	Light Trace
		8/20/2019	9.04	922.80	Light Trace
		9/16/2019	9.13	922.71	0.02
		10/17/2019	8.01	923.83	Heavy Trace
		11/19/2019	7.39	924.45	Light Trace
		12/16/2019	7.52	924.32	Heavy Trace
		12/10/2018	5.08	925.68	—
		2/19/2019	5.40	925.36	
		3/19/2019	4.87	925.89	
		4/16/2019	4.80	925.96	—
		5/14/2019	4.84	925.92	
EWC WW North Chamber	020 76	6/17/2019	5.23	925.53	
F WG-W V-North Chamber	930.70	7/25/2019	5.85	924.91	—
		8/20/2019	6.88	923.88	
		9/16/2019	7.56	923.20	—
		10/17/2019	5.15	925.61	—
		11/19/2019	4.68	926.08	—
		12/16/2019	4.72	926.04	
Table 2

HCC System Passive Operation Pilot Study Water-Level Elevations and LNAPL Thicknesses BNSF Former Maintenance and Fueling Facility Skykomish, Washington Farallon PN: 683-067

	Measuring Point				
	Elevation ¹		Depth to Water ²	Water Elevation ¹	LNAPL Thickness
Location	(feet NAVD88)	Date	(feet)	(feet NAVD88)	(feet)
	Up-Gradient Locat	tions (South of, and wi	thin, West Gate and Far	West Gate)	
		12/10/2018	5.08	925.68	—
		2/19/2019	5.40	925.36	—
		3/19/2019	4.87	925.89	
	930 76	4/16/2019	4.82	925.94	—
		5/14/2019	4.84	925.92	—
FWG-WV-South Chamber		6/17/2019	5.23	925.53	—
	950.70	7/25/2019	5.85	924.91	—
		8/20/2019	6.88	923.88	—
		9/16/2019	7.56	923.20	—
		10/17/2019	5.17	925.59	—
		11/19/2019	4.68	926.08	_
		12/16/2019	4.72	926.04	—
		12/10/2018	5.12	NA	_
		2/19/2019	5.40	NA	_
		3/19/2019	4.97	NA	_
		4/16/2019	4.88	NA	_
		5/14/2019	4.82	NA	—
EWG EV North Chamber	ΝA	6/17/2019	5.25	NA	_
r wo-Ev-North Chamber	INA	7/25/2019	5.70	NA	—
		8/20/2019	6.84	NA	_
		9/16/2019	7.59	NA	—
		10/17/2019	5.21	NA	_
		11/19/2019	4.68	NA	—
		12/16/2019	4.76	NA	

Table 2

HCC System Passive Operation Pilot Study Water-Level Elevations and LNAPL Thicknesses BNSF Former Maintenance and Fueling Facility Skykomish, Washington Farallon PN: 683-067

	Measuring Point							
	Elevation ¹		Depth to Water ²	Water Elevation ¹	LNAPL Thickness			
Location	(feet NAVD88)	Date	(feet)	(feet NAVD88)	(feet)			
Up-Gradient Locations (South of, and within, West Gate and Far West Gate)								
		12/10/2018	5.12	NA				
		2/19/2019	5.50	NA				
		3/19/2019	4.97	NA				
		4/16/2019	4.89	NA				
		5/14/2019	4.82	NA				
EWG EV South Chamber	NA	6/17/2019	5.25	NA				
F wG-Ev-South Chamber	INA	7/25/2019	5.70	NA				
		8/20/2019	6.84	NA				
		9/16/2019	7.59	NA				
		10/17/2019	5.24	NA				
		11/19/2019	4.69	NA				
		12/16/2019	4.76	NA				

NOTES:

Green highlighted rows indicate baseline conditions before the start of HCC passive operations.

- denotes LNAPL was not observed.

¹Elevations referenced to North American Vertical Datum of 1988 (NAVD88).

²Depths referenced to measuring point (e.g., top of well casing, top of vault).

LNAPL = light nonaqueous-phase liquid NA = not applicable

APPENDIX A LABORATORY ANALYTICAL REPORTS

HYDRAULIC CONTROL AND CONTAINMENT SYSTEM PASSIVE OPERATION PILOT STUDY REPORT BNSF Former Maintenance and Fueling Facility Skykomish, Washington Consent Decree No. 07-2-33672-9 SEA

Farallon PN: 683-067



THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Seattle 5755 8th Street East Tacoma, WA 98424 Tel: (253)922-2310

TestAmerica Job ID: 580-82652-1

Client Project/Site: BNSF Skykomish Ground Water Sampling Event: Skykomish HCC System

For:

Farallon Consulting LLC 975 5th Avenue NW Suite 100 Issaguah, Washington 98027

Attn: Peter Kingston

Kristine D. allen

Authorized for release by: 12/31/2018 4:44:00 PM

Kristine Allen, Manager of Project Management (253)248-4970 kristine.allen@testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



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Job ID: 580-82652-1

Laboratory: TestAmerica Seattle

Narrative

Job Narrative 580-82652-1

Comments

No additional comments.

Receipt

The samples were received on 12/13/2018 5:30 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 11 coolers at receipt time were 0.3° C, 0.5° C, 0.8° C, 1.1° C, 1.2° C, 1.5° C, 1.7° C, 1.7° C, 2.0° C, 2.0° C and 2.5° C.

GC Semi VOA

Method(s) NWTPH-Dx: The continuing calibration verification (CCV) associated with batch 580-291649 recovered above the upper control limit for Motor Oil (>C24-C36). The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following samples are impacted: 2A-W-41-121218 (580-82652-28) and (LCSD 580-291536/3-B).

Method(s) NWTPH-Dx: The following samples contained a hydrocarbon pattern in the diesel range; however, the elution pattern was later than the typical diesel fuel pattern used by the laboratory for quantitative purposes: GW-3-121118 (580-82652-6), GW-30-121118 (580-82652-7), 2A-W-42-121118 (580-82652-10), 1C-W-7-121118 (580-82652-11), GW-2-121118 (580-82652-12) and GW-20-121118 (580-82652-16).

Method(s) NWTPH-Dx: The following sample was re-prepared outside of preparation holding time due to the sample not having sufficient remaining volume for a silica gel cleanup after extraction and analysis of the non-cleaned extract.: GW-3-121118 (580-82652-6). Both sets of data for the non-silica get treated extract have been reported.

Method(s) NWTPH-Dx: Surrogate recovery for the following sample was outside control limits: 5-W-56-121118 (580-82652-22). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method(s) NWTPH-Dx: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for batch preparation batch 580-291573 and analytical batch 580-292099 recovered outside control limits for the following analytes: #2 Diesel (C10-C24) and Motor Oil (>C24-C36). The individual recoveries of both the LCS and LCSD met the acceptance criteria.

Method(s) NWTPH-Dx: Continuing calibration verification (CCV) standard associated with batch 580-292294 recovered outside %Drift acceptance criteria for o-Terphenyl surrogate. The %Recovery is within acceptance criteria for the surrogate in the CCV and affected samples; therefore, the data have been reported. (CCV 580-292294/14) and (CCVRT 580-292294/3)

Method(s) NWTPH-Dx: The LCSD 580-291536/3-B recovered above the acceptance criteria for Motor Oil (>C24-C36). The associated sample(s) were non-detect; therefore, the data have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

1 2 3 5 6 7

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description	
X	Surrogate is outside control limits	E
*	LCS or LCSD is outside acceptance limits.	×
*	RPD of the LCS and LCSD exceeds the control limits	
Н	Sample was prepped or analyzed beyond the specified holding time	

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

TestAmerica Job ID: 580-82652-1

Lab Sample ID: 580-82652-1

Matrix: Water

Client Sample ID: MW-4-121118 Date Collected: 12/11/18 09:40 Date Received: 12/13/18 17:30

 Method: NWTPH-Dx - North	west - Semi-V	olatile Pet	roleum Prod	ucts (G0	C)				
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.099		0.062	0.062	mg/L		12/17/18 07:40	12/18/18 05:53	1
Motor Oil (>C24-C36)	0.12		0.091	0.091	mg/L		12/17/18 07:40	12/18/18 05:53	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o- i erpnenyi	73		50 - 150				12/17/18 07:40	12/18/18 05:53	1

TestAmerica Job ID: 580-82652-1

Lab Sample ID: 580-82652-2

Matrix: Water

Client Sample ID: MW-3-121118 Date Collected: 12/11/18 09:43 Date Received: 12/13/18 17:30

_ Method: NWTPH-Dx - Nor	thwest - Semi-V	olatile Pet	roleum Prod	ucts (G	C)				
Analyte	Result	Qualifier	RL	MDL	Únit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.87		0.061	0.061	mg/L		12/17/18 07:40	12/18/18 06:15	1
Motor Oil (>C24-C36)	2.3		0.091	0.091	mg/L		12/17/18 07:40	12/18/18 06:15	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	78		50 - 150				12/17/18 07:40	12/18/18 06:15	1

Client Sample ID: 2A-W-10-121118

Date Collected: 12/11/18 10:30

Date Received: 12/13/18 17:30

Lab Sample ID: 580-82652-3 Matrix: Water

Method: NWTPH-Dx - No	rthwest - Semi-V	olatile Pet	roleum Prod	ucts (G	C)				
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.13		0.062	0.062	mg/L		12/17/18 07:40	12/18/18 06:59	1
Motor Oil (>C24-C36)	0.25		0.091	0.091	mg/L		12/17/18 07:40	12/18/18 06:59	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	82		50 - 150				12/17/18 07:40	12/18/18 06:59	1

Client Sample ID: 2A-W-9-121118

Date Collected: 12/11/18 10:44

Date Received: 12/13/18 17:30

Lab Sample ID: 580-82652-4 Matrix: Water

Method: NWTPH-Dx - No	rthwest - Semi-V	Ouglifier	roleum Prod		C) Unit	п	Proparod	Analyzod	Dil Eac
#2 Diesel (C10-C24)	(Vesuit	Quaimer	0.062	0.062	ma/l		12/17/18 07·40	12/18/18 07·21	1
Motor Oil (>C24-C36)	0.38		0.091	0.091	mg/L		12/17/18 07:40	12/18/18 07:21	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	80		50 - 150				12/17/18 07:40	12/18/18 07:21	1

RL

0.062

0.092

Limits

50 - 150

MDL Unit

0.062 mg/L

0.092 mg/L

D

Prepared

Prepared

Client Sample ID: 1B-W-23-121118 Date Collected: 12/11/18 12:00 Date Received: 12/13/18 17:30

Analyte

Surrogate

o-Terphenyl

#2 Diesel (C10-C24)

Motor Oil (>C24-C36)

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Result Qualifier

ND

ND

%Recovery Qualifier

77

Lab Sample ID: 580-82652-5 Matrix: Water

12/17/18 07:40 12/18/18 07:43

12/17/18 07:40 12/18/18 07:43

12/17/18 07:40 12/18/18 07:43

Analyzed

Analyzed

652-5 Water	
Dil Fac	5
1 1	
Dil Fac	
	8
	9

Client Sample Results

Client: Farallon Consulting LLC Project/Site: BNSF Skykomish Ground Water

Client Sample ID: GW-3-121118

Date Collected: 12/11/18 12:12

Date Received: 12/13/18 17:30

5

Lab Sample ID: 580-82652-6 Matrix: Water

- Method: NWTPH-Dx - Northwe	est - Semi-V	olatile Pet	roleum Prod	ucts (G	C)				
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.28		0.061	0.061	mg/L		12/19/18 09:39	12/22/18 02:04	1
Motor Oil (>C24-C36)	0.12		0.091	0.091	mg/L		12/19/18 09:39	12/22/18 02:04	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	61		50 - 150				12/19/18 09:39	12/22/18 02:04	1
#2 Diesel (C10-C24) Motor Oil (>C24-C36)	0.29 0.18	H H	0.061 0.091	0.061	mg/L mg/L		12/30/18 07:34 12/30/18 07:34	12/30/18 15:04 12/30/18 15:04	1 1
	•								
	a. –	~							
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Surrogate o-Terphenyl	%Recovery 97	Qualifier	Limits 50 - 150				Prepared 12/30/18 07:34	Analyzed 12/30/18 15:04	Dil Fac
Surrogate o-Terphenyl Method: NWTPH-Dx - Semi-Vo	%Recovery 97	Qualifier	Limits 50 - 150	「PH with	ı Silica G	iel Cle	Prepared 12/30/18 07:34	Analyzed 12/30/18 15:04	Dil Fac
Surrogate o-Terphenyl Method: NWTPH-Dx - Semi-Vo Analyte	%Recovery 97 Platile Petro Result	Qualifier leum Prod Qualifier	Limits 50 - 150	PH with MDL	i Silica G Unit	iel Cle	Prepared 12/30/18 07:34 eanup Prepared	Analyzed 12/30/18 15:04 Analyzed	Dil Fac

Motor Oil (>C24-C36)	ND	Н	0.091	0.091 mg/L	12/30/18 07:34	12/30/18 17:57	1
Surrogate	%Recovery	Qualifier	Limits		Prepared	Analyzed	Dil Fac
o-Terphenyl	106		50 - 150		12/30/18 07:34	12/30/18 17:57	1

Client Sample ID: GW-30-121118

Date Collected: 12/11/18 12:30

Date Received: 12/13/18 17:30

TestAmerica Job ID: 580-82652-1

Lab Sample ID: 580-82652-7

Matrix: Water

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC) Analyte Result Qualifier MDL Unit D Prepared Analyzed Dil Fac RL 0.062 0.062 mg/L 12/19/18 09:39 12/22/18 02:26 #2 Diesel (C10-C24) 0.34 1 Motor Oil (>C24-C36) 0.091 0.091 mg/L 12/19/18 09:39 12/22/18 02:26 0.13 1 Surrogate %Recovery Qualifier Limits Prepared Analyzed Dil Fac 12/19/18 09:39 12/22/18 02:26 o-Terphenyl 77 50 - 150 1

5

Client Sample ID: EW-2A-121118

Date Collected: 12/11/18 14:49

Date Received: 12/13/18 17:30

Lab Sample ID: 580-82652-8 Matrix: Water

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC) Analyte Result Qualifier MDL Unit D Prepared Analyzed Dil Fac RL 0.062 0.062 mg/L 12/19/18 09:39 12/22/18 02:47 #2 Diesel (C10-C24) 0.071 1 Motor Oil (>C24-C36) ND 0.091 0.091 mg/L 12/19/18 09:39 12/22/18 02:47 1 Surrogate %Recovery Qualifier Limits Prepared Analyzed Dil Fac 12/19/18 09:39 12/22/18 02:47 o-Terphenyl 76 50 - 150 1

5

Client Sample ID: GW-4-121118 Date Collected: 12/11/18 15:00 Date Received: 12/13/18 17:30

Lab Sample ID: 580-82652-9 Matrix: Water

Method: NWTPH-Dx - No	orthwest - Semi-Volatile Pe	troleum Prod	lucts (G	C)				
Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND	0.062	0.062	mg/L		12/19/18 09:39	12/22/18 03:09	1
Motor Oil (>C24-C36)	ND	0.091	0.091	mg/L		12/19/18 09:39	12/22/18 03:09	1
Surrogate	%Recovery Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	79	50 - 150				12/19/18 09:39	12/22/18 03:09	1

5

Client Sample ID: 2A-W-42-121118 Date Collected: 12/11/18 16:12 Date Received: 12/13/18 17:30

Lab Sample ID: 580-82652-10 Matrix: Water

Method: NWTPH-Dx - Nor	thwest - Semi-Vola	tile Petroleun	ı Prod	ucts (GO	C)				
Analyte	Result Qu	ıalifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.17	0	.061	0.061	mg/L		12/19/18 09:39	12/22/18 03:30	1
Motor Oil (>C24-C36)	0.11	0	.091	0.091	mg/L		12/19/18 09:39	12/22/18 03:30	1
Surrogate	%Recovery Qu	ıalifier Limi	ts				Prepared	Analyzed	Dil Fac
o-Terphenyl	78	50 - 1	50				12/19/18 09:39	12/22/18 03:30	1

5

Client Sample ID: 1C-W-7-121118 Date Collected: 12/11/18 16:10 Date Received: 12/13/18 17:30

Lab Sample ID: 580-82652-11 Matrix: Water

Method: NWTPH-Dx - No	rthwest - Semi-V	olatile Pet	roleum Prod	ucts (G	C)				
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.15		0.062	0.062	mg/L		12/19/18 09:39	12/22/18 03:51	1
Motor Oil (>C24-C36)	0.11		0.091	0.091	mg/L		12/19/18 09:39	12/22/18 03:51	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	73		50 - 150				12/19/18 09:39	12/22/18 03:51	1

5

TestAmerica Job ID: 580-82652-1

Lab Sample ID: 580-82652-12

Client Sample ID: GW-2-121118 Date Collected: 12/11/18 09:50

Date Received: 12/13/18 17:30

Method: NWTPH-Dx - No	orthwest - Semi-V	olatile Pet	roleum Prod	ucts (GO	C)				
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.13		0.062	0.062	mg/L		12/19/18 09:39	12/22/18 04:13	1
Motor Oil (>C24-C36)	0.27		0.091	0.091	mg/L		12/19/18 09:39	12/22/18 04:13	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	75		50 - 150				12/19/18 09:39	12/22/18 04:13	1

Matrix: Water

Client Sample ID: 2A-W-40-121118 Date Collected: 12/11/18 09:23 Date Received: 12/13/18 17:30

Lab Sample ID: 580-82652-13 Matrix: Water

5

Method: NWTPH-Dx - Nort	hwest - Semi-Ve	olatile Pet	roleum Prod	ucts (GC	C)				
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.079		0.062	0.062	mg/L		12/19/18 09:39	12/22/18 04:56	1
Motor Oil (>C24-C36)	0.095		0.092	0.092	mg/L		12/19/18 09:39	12/22/18 04:56	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	85		50 - 150				12/19/18 09:39	12/22/18 04:56	1

Client Sample ID: PZ-8-121118 Date Collected: 12/11/18 12:42 Date Received: 12/13/18 17:30

Lab Sample ID: 580-82652-14 Matrix: Water

Method: NWTPH-Dx - Northv	vest - Semi-V	olatile Pet	roleum Prod	ucts (G	C)				
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062	0.062	mg/L		12/19/18 09:39	12/22/18 05:17	1
Motor Oil (>C24-C36)	ND		0.091	0.091	mg/L		12/19/18 09:39	12/22/18 05:17	1
Surrogate o-Terphenyl	- %Recovery 81	Qualifier	Limits				Prepared 12/19/18 09:39	Analyzed 12/22/18 05:17	Dil Fac

Client Sample ID: GW-1-121118 Date Collected: 12/11/18 11:15 Date Received: 12/13/18 17:30

Lab Sample ID: 580-82652-15 Matrix: Water

Matrix: water

Method: NWTPH-Dx - Nort	hwest - Semi-V	olatile Pet	roleum Prod	ucts (GC	C)				
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062	0.062	mg/L		12/19/18 09:39	12/22/18 05:38	1
Motor Oil (>C24-C36)	ND		0.092	0.092	mg/L		12/19/18 09:39	12/22/18 05:38	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	81		50 - 150				12/19/18 09:39	12/22/18 05:38	1

Client Sample ID: GW-20-121118 Date Collected: 12/11/18 10:05 Date Received: 12/13/18 17:30

Lab Sample ID: 580-82652-16 Matrix: Water

5

Method: NWTPH-Dx - No	rthwest - Semi-V	olatile Pet	roleum Prod	ucts (GO	C)				
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.46		0.062	0.062	mg/L		12/19/18 09:39	12/22/18 06:00	1
Motor Oil (>C24-C36)	1.0		0.091	0.091	mg/L		12/19/18 09:39	12/22/18 06:00	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	82		50 - 150				12/19/18 09:39	12/22/18 06:00	1

Client Sample ID: PZ-7S-12118 Date Collected: 12/11/18 11:24 Date Received: 12/13/18 17:30

Lab Sample ID: 580-82652-17 Matrix: Water

5

Method: NWTPH-Dx - North	nwest - Semi-V	olatile Pet	roleum Prod	ucts (GO	C)				
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062	0.062	mg/L		12/19/18 09:39	12/22/18 06:21	1
Motor Oil (>C24-C36)	ND		0.091	0.091	mg/L		12/19/18 09:39	12/22/18 06:21	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	79		50 - 150				12/19/18 09:39	12/22/18 06:21	1

Client Sample ID: EW-1-121218 Date Collected: 12/12/18 11:50 Date Received: 12/13/18 17:30

Lab Sample ID: 580-82652-18 Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062	0.062	mg/L		12/19/18 11:13	12/20/18 20:21	1
Motor Oil (>C24-C36)	ND		0.091	0.091	mg/L		12/19/18 11:13	12/20/18 20:21	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	95		50 - 150				12/19/18 11:13	12/20/18 20:21	1

Client Sample ID: 5-W-19-121118 Date Collected: 12/11/18 15:20 Date Received: 12/13/18 17:30

Lab Sample ID: 580-82652-19 Matrix: Water

watrix: water

5

Method: NWTPH-Dx - Northy	vest - Semi-V	olatile Pet	roleum Prod	ucts (GC	C)				
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.061	0.061	mg/L		12/19/18 11:13	12/20/18 20:43	1
Motor Oil (>C24-C36)	ND		0.090	0.090	mg/L		12/19/18 11:13	12/20/18 20:43	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	98		50 - 150				12/19/18 11:13	12/20/18 20:43	1

Client Sample ID: 5-W-18-121118 Date Collected: 12/11/18 15:35 Date Received: 12/13/18 17:30

Lab Sample ID: 580-82652-20 Matrix: Water

5

Method: NWTPH-Dx - No	rthwest - Semi-V	olatile Pet	roleum Prod	ucts (GC	C)				
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.061	0.061	mg/L		12/19/18 11:13	12/20/18 21:05	1
Motor Oil (>C24-C36)	ND		0.091	0.091	mg/L		12/19/18 11:13	12/20/18 21:05	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	95		50 - 150				12/19/18 11:13	12/20/18 21:05	1

Client Sample ID: 5-W-55-121118 Date Collected: 12/11/18 16:45 Date Received: 12/13/18 17:30

Lab Sample ID: 580-82652-21 Matrix: Water

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nit	п	Prenared	Analyzed	Dil Fac

Method: NWTPH-Dx - Nort	hwest - Semi-V	olatile Pet	roleum Prod	ucts (G	C)				
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.091		0.061	0.061	mg/L		12/19/18 11:13	12/20/18 21:48	1
Motor Oil (>C24-C36)	ND		0.090	0.090	mg/L		12/19/18 11:13	12/20/18 21:48	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o- i erpnenyi	97		50 - 150				12/19/18 11:13	12/20/18 21:48	1

Client Sample ID: 5-W-56-121118 Date Collected: 12/11/18 17:12 Date Received: 12/13/18 17:30

Lab Sample ID: 580-82652-22 Matrix: Water

5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.95		0.061	0.061	mg/L		12/19/18 11:13	12/20/18 22:10	1
Motor Oil (>C24-C36)	1.4		0.091	0.091	mg/L		12/19/18 11:13	12/20/18 22:10	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	2894	X	50 - 150				12/19/18 11:13	12/20/18 22:10	1

Client Sample ID: 5-W-43-121118 Date Collected: 12/11/18 12:35 Date Received: 12/13/18 17:30

Lab Sample ID: 580-82652-23 Matrix: Water

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Method: NWTPH-Dx - Northw	vest - Semi-V	olatile Pet	roleum Prod	ucts (G	C)				
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.061	0.061	mg/L		12/19/18 11:13	12/20/18 22:32	1
Motor Oil (>C24-C36)	ND		0.090	0.090	mg/L		12/19/18 11:13	12/20/18 22:32	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	98		50 - 150				12/19/18 11:13	12/20/18 22:32	1

Client Sample ID: 1C-W-1-121218 Date Collected: 12/12/18 09:40 Date Received: 12/13/18 17:30

Lab Sample ID: 580-82652-24 Matrix: Water

5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.074		0.062	0.062	mg/L		12/19/18 11:13	12/20/18 22:53	1
Motor Oil (>C24-C36)	ND		0.091	0.091	mg/L		12/19/18 11:13	12/20/18 22:53	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	95		50 - 150				12/19/18 11:13	12/20/18 22:53	1

TestAmerica Job ID: 580-82652-1

Client Sample ID: 1C-W-8-121218 Date Collected: 12/12/18 09:41 Date Received: 12/13/18 17:30

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.14		0.061	0.061	mg/L		12/19/18 11:13	12/20/18 23:15	1
Motor Oil (>C24-C36)	0.19		0.091	0.091	mg/L		12/19/18 11:13	12/20/18 23:15	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	91		50 - 150				12/19/18 11:13	12/20/18 23:15	1

Lab Sample ID: 580-82652-25 Matrix: Water 5

Client Sample ID: 5-W-51-121218 Date Collected: 12/12/18 09:51

Date Received: 12/13/18 17:30

Method: NWTPH-Dx - No	orthwest - Semi-V	olatile Pet	roleum Prod	ucts (GC	C)				
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	1.0		0.062	0.062	mg/L		12/19/18 11:13	12/20/18 23:37	1
Motor Oil (>C24-C36)	1.6		0.091	0.091	mg/L		12/19/18 11:13	12/20/18 23:37	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	90		50 - 150				12/19/18 11:13	12/20/18 23:37	1

Lab Sample ID: 580-82652-26 Matrix: Water

Client Sample ID: 1B-W-3-121218 Date Collected: 12/12/18 10:40 Date Received: 12/13/18 17:30

Lab Sample ID: 580-82652-27 Matrix: Water

5

Method: NWTPH-Dx - No	rthwest - Semi-V	olatile Pet	roleum Prod	ucts (GC	C)				
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062	0.062	mg/L		12/19/18 11:13	12/20/18 23:58	1
Motor Oil (>C24-C36)	ND		0.091	0.091	mg/L		12/19/18 11:13	12/20/18 23:58	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	96		50 - 150				12/19/18 11:13	12/20/18 23:58	1

Client Sample Results

Client: Farallon Consulting LLC Project/Site: BNSF Skykomish Ground Water

Client Sample ID: 2A-W-41-121218

Date Collected: 12/12/18 11:01

Date Received: 12/13/18 17:30

TestAmerica Job ID: 580-82652-1

5

Lab Sample ID: 580-82652-28 Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Únit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.21		0.061	0.061	mg/L		12/19/18 11:13	12/21/18 00:20	1
Motor Oil (>C24-C36)	0.23		0.091	0.091	mg/L		12/19/18 11:13	12/21/18 00:20	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
· To we have a									
o-Terpnenyi	92		50 - 150				12/19/18 11:13	12/21/18 00:20	1
Method: NWTPH-Dx - Se	92 mi-Volatile Petro	leum Prod	50 - 150	「PH with	ı Silica G	el Cle	12/19/18 11:13	12/21/18 00:20	1
o-repnenyi - Method: NWTPH-Dx - Se Analyte	92 mi-Volatile Petro Result	leum Prod Qualifier	50 - 150 Iucts by NWI RL	「PH with MDL	n <mark>Silica G</mark> Unit	Gel Cle	12/19/18 11:13 anup Prepared	12/21/18 00:20 Analyzed	1 Dil Fac
Method: NWTPH-Dx - Se Analyte #2 Diesel (C10-C24)	emi-Volatile Petro Result	leum Prod Qualifier	50 - 150	PH with MDL 0.061	Silica C Unit mg/L	Gel Cle	12/19/18 11:13 eanup Prepared 12/19/18 11:13	Analyzed 12/20/18 18:54	1 Dil Fac
Method: NWTPH-Dx - Se Analyte #2 Diesel (C10-C24) Motor Oil (>C24-C36)	emi-Volatile Petro Result ND ND	leum Prod Qualifier *	50 - 150	PH with MDL 0.061 0.091	Silica G Unit mg/L mg/L	Gel Cle	12/19/18 11:13 Panup Prepared 12/19/18 11:13 12/19/18 11:13	Analyzed 12/20/18 18:54 12/20/18 18:54	1 Dil Fac 1 1
Method: NWTPH-Dx - Se Analyte #2 Diesel (C10-C24) Motor Oil (>C24-C36) Surrogate	92 emi-Volatile Petro Result ND ND %Recovery	leum Prod Qualifier * Qualifier	50 - 150 Iucts by NW7 RL 0.061 0.091 <i>Limits</i>	CPH with MDL 0.061 0.091	Silica G Unit mg/L mg/L	Gel Cle	12/19/18 11:13 Prepared 12/19/18 11:13 12/19/18 11:13 Prepared	12/21/18 00:20 Analyzed 12/20/18 18:54 12/20/18 18:54 Analyzed	1 Dil Fac 1 1 Dil Fac

Client Sample ID: 2A-W-410-121218 Date Collected: 12/12/18 11:20 Date Received: 12/13/18 17:30

Lab Sample ID: 580-82652-29 Matrix: Water

M	atr	IX:	W	at	e

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Method: NWTPH-Dx - North	west - Semi-V	olatile Pet	roleum Prod	ucts (GO	C)				
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.061	0.061	mg/L		12/19/18 11:13	12/21/18 01:03	1
Motor Oil (>C24-C36)	ND		0.091	0.091	mg/L		12/19/18 11:13	12/21/18 01:03	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	94		50 - 150				12/19/18 11:13	12/21/18 01:03	1
Client Sample ID: 5-W-17-121218 Date Collected: 12/12/18 11:03 Date Received: 12/13/18 17:30

Lab Sample ID: 580-82652-30 Matrix: Water

5

Method: NWTPH-Dx - No	rthwest - Semi-V	olatile Pet	roleum Prod	ucts (GC	C)				
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062	0.062	mg/L		12/19/18 11:13	12/21/18 01:46	1
Motor Oil (>C24-C36)	ND		0.091	0.091	mg/L		12/19/18 11:13	12/21/18 01:46	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	97		50 - 150				12/19/18 11:13	12/21/18 01:46	1

Client Sample ID: FWG-WV-121218 Date Collected: 12/12/18 11:40 Date Received: 12/13/18 17:30

Lab Sample ID: 580-82652-31 Matrix: Water

Matrix: water

5

Method: NWTPH-Dx - Northwe	est - Semi-V	olatile Pet	roleum Prod	ucts (G	C)				
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062	0.062	mg/L		12/19/18 11:13	12/21/18 02:08	1
Motor Oil (>C24-C36)	ND		0.091	0.091	mg/L		12/19/18 11:13	12/21/18 02:08	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	84		50 - 150				12/19/18 11:13	12/21/18 02:08	1

Client Sample ID: FWG-EV-121218

Lab Sample ID: 580-82652-32 er

Date Collected: 12/12/18 12:40 Date Received: 12/13/18 17:30

Matrix:	Wat

5

Method: NWTPH-Dx - Nor Analyte	thwest - Semi-V Result	Olatile Pet Qualifier	roleum Prod _{RL}	ucts (GO MDL	<mark>C)</mark> Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.085		0.062	0.062	mg/L		12/19/18 11:13	12/21/18 02:29	1
Motor Oil (>C24-C36)	0.15		0.091	0.091	mg/L		12/19/18 11:13	12/21/18 02:29	1
Surrogate o-Terphenyl	%Recovery 87	Qualifier	Limits 50 - 150				Prepared 12/19/18 11:13	Analyzed 12/21/18 02:29	Dil Fac

RL

0.063

0.092

Limits

50 - 150

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

0.57

0.47

%Recovery Qualifier

78

Result Qualifier

Client Sample ID: WG-WV-121218

MDL Unit

0.063 mg/L

0.092 mg/L

D

Prepared

12/19/18 11:13 12/21/18 02:51

Date Collected: 12/12/18 13:15 Date Received: 12/13/18 17:30

Analyte

Surrogate

o-Terphenyl

#2 Diesel (C10-C24)

Motor Oil (>C24-C36)

Lab Sample ID: 580-82652-33 Matrix: Water

Analyzed

Prepared	Analyzed	Dil Fac	5
12/19/18 11:13	12/21/18 02:51	1	
12/19/18 11:13	12/21/18 02:51	1	

1

Dil Fac

Client Sample ID: WG-EV-121218 Date Collected: 12/12/18 12:40 Date Received: 12/13/18 17:30

Lab Sample ID: 580-82652-34 Matrix: Water

5

Method: NWTPH-Dx - No	rthwest - Semi-V	olatile Pet	roleum Prod	ucts (GC	C)				
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062	0.062	mg/L		12/19/18 11:13	12/21/18 03:12	1
Motor Oil (>C24-C36)	ND		0.092	0.092	mg/L		12/19/18 11:13	12/21/18 03:12	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	92		50 - 150				12/19/18 11:13	12/21/18 03:12	1

Client Sample ID: 2B-W-4-121218 Date Collected: 12/12/18 12:23 Date Received: 12/13/18 17:30

Lab Sample ID: 580-82652-35 Matrix: Water

5

Method: NWTPH-Dx - Northw	est - Semi-V	olatile Peti	roleum Prod	ucts (GC	C)				
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062	0.062	mg/L		12/19/18 11:13	12/21/18 03:34	1
Motor Oil (>C24-C36)	ND		0.091	0.091	mg/L		12/19/18 11:13	12/21/18 03:34	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	90		50 - 150				12/19/18 11:13	12/21/18 03:34	1

Client Sample ID: 5-W-16-121218 Date Collected: 12/12/18 12:24 Date Received: 12/13/18 17:30

Lab Sample ID: 580-82652-36 Matrix: Water

watrix: water

5

Method: NWTPH-Dx - No	rthwest - Semi-V	olatile Pet	roleum Prod	ucts (GC	C)				
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062	0.062	mg/L		12/19/18 11:13	12/22/18 01:43	1
Motor Oil (>C24-C36)	ND		0.091	0.091	mg/L		12/19/18 11:13	12/22/18 01:43	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	89		50 - 150				12/19/18 11:13	12/22/18 01:43	1

Client Sample ID: 5-W-14-121218 Date Collected: 12/12/18 13:27 Date Received: 12/13/18 17:30

Lab Sample ID: 580-82652-37 Matrix: Water

Method: NWTPH-Dx - No	rthwest - Semi-V	olatile Pet	roleum Prod	ucts (GO	C)				
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND	*	0.062	0.062	mg/L		12/19/18 14:58	12/27/18 23:15	1
Motor Oil (>C24-C36)	ND	*	0.091	0.091	mg/L		12/19/18 14:58	12/27/18 23:15	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	97		50 - 150				12/19/18 14:58	12/27/18 23:15	1

5

Client Sample ID: S2-AD-121218 Date Collected: 12/12/18 13:40 Date Received: 12/13/18 17:30

Lab Sample ID: 580-82652-38 Matrix: Water

Method: NWTPH-Dx - Nor	rthwest - Semi-V	olatile Pet	roleum Prod	ucts (G	C)				
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND	*	0.062	0.062	mg/L		12/19/18 14:58	12/27/18 23:37	1
Motor Oil (>C24-C36)	ND	*	0.092	0.092	mg/L		12/19/18 14:58	12/27/18 23:37	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	97		50 - 150				12/19/18 14:58	12/27/18 23:37	1

5

Client Sample ID: S2-AU-121218 Date Collected: 12/12/18 13:13 Date Received: 12/13/18 17:30

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Lab Sample ID: 580-82652-39 Matrix: Water

5

Method: NWTPH-Dx - Northwe	est - Semi-V	olatile Pet	roleum Prod	ucts (G0	C)				
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND	*	0.062	0.062	mg/L		12/19/18 14:58	12/27/18 23:59	1
Motor Oil (>C24-C36)	ND	*	0.091	0.091	mg/L		12/19/18 14:58	12/27/18 23:59	1
Surrogate o-Terphenyl	%Recovery 104	Qualifier	Limits				Prepared 12/19/18 14:58	Analyzed 12/27/18 23:59	Dil Fac

Client Sample ID: S2-BD-121218 Date Collected: 12/12/18 13:55 Date Received: 12/13/18 17:30

Lab Sample ID: 580-82652-40 Matrix: Water

5

Method: NWTPH-Dx - No	orthwest - Semi-V	olatile Pet	roleum Prod	ucts (G	C)				
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND	*	0.062	0.062	mg/L		12/19/18 14:58	12/28/18 00:20	1
Motor Oil (>C24-C36)	ND	*	0.092	0.092	mg/L		12/19/18 14:58	12/28/18 00:20	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	89		50 - 150				12/19/18 14:58	12/28/18 00:20	1

Client Sample ID: S2-BU-121218 Date Collected: 12/12/18 13:55 Date Received: 12/13/18 17:30

Lab Sample ID: 580-82652-41 Matrix: Water

Method: NWTPH-Dx - No	rthwest - Semi-V	olatile Pet	roleum Prod	ucts (GO	C)				
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND	*	0.062	0.062	mg/L		12/19/18 14:58	12/28/18 00:42	1
Motor Oil (>C24-C36)	ND	*	0.091	0.091	mg/L		12/19/18 14:58	12/28/18 00:42	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	93		50 - 150				12/19/18 14:58	12/28/18 00:42	1

5

RL

MDL Unit

D

Prepared

Lab Sample ID: MB 580-291276/1-A

Matrix: Water

Analyte

Analyte

#2 Diesel (C10-C24)

Motor Oil (>C24-C36)

Analysis Batch: 291367

Client Sample ID: Method Blank

Analyzed

Prep Type: Total/NA

Prep Batch: 291276

Dil Fac

6

#2 Diesel (C10-C24)		ND		0	.065	0	.065	mg/L		- 12	2/17/18 07:40	12/18/18 (03:42	1
Motor Oil (>C24-C36)		ND		0	.096	0	.096	mg/L		12	2/17/18 07:40	12/18/18	03:42	1
			MD											
Surrogata	% Basa	INIB	MB Qualifiar	Limi	*~						Bronorod	Analia	ad	Dil Ess
	/%Rec0	76	Quaimer		150					11	712/12 07:40	Allalyz	02.42	
		70		50 - 1	150					14		12/10/10 0	JJ.42	'
Lab Sample ID: LCS 580-2	291276/2-A								Cli	ent S	ample ID:	Lab Con	trol S	ample
Matrix: Water												Prep Tyr	be: To	tal/NA
Analysis Batch: 291367												Prep Ba	tch: 2	91276
				Spike		LCS	LCS	5				%Rec.		
Analyte				Added		Result	Qua	lifier	Unit	I	D %Rec	Limits		
#2 Diesel (C10-C24)				0.500		0.419			mg/L		84	50 - 120		
Motor Oil (>C24-C36)				0.500		0.470			mg/L		94	64 - 120		
	LCS	LUS) . 1161	1 : :4										
	%Recovery	Qua	liitier											
o-Terpnenyi	84			50 - 150										
- Lab Sample ID: LCSD 580	-291276/3-4							C	lient S	amn	e ID: I ab	Control §	Samn	le Dun
Matrix: Water	20121010 4	•								Jump		Pren Tyr	e To	tal/NA
Analysis Batch: 291367												Pron Ba	itch: 5	91276
Analysis Batch. 251007				Spike		LCSD	LCS	D				%Rec.		RPD
Analvte				Added		Result	Qua	lifier	Unit	1	D %Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)				0.500		0.444			ma/L		89	50 - 120	6	26
Motor Oil (>C24-C36)				0.500		0.507			ma/L		101	64 - 120	8	24
									5					
	LCSD	LCS	SD											
Surrogate	%Recovery	Qua	lifier	Limits										
o-Terphenyl	87			50 - 150										
Loh Comple ID: MD 500.00	04500/4 4									~	liant Com		م دام	Diamle
Lab Sample ID: MB 560-23	91500/1-A									U	nent Sam	Drop Tyr	enou Sou To	
Analysia Potoby 201549												Prop Po	Je. 10	04500
Analysis Batch. 291540		MR	MB									Ртер Ба	acri. 2	.91500
Analyte	Re	sult	Qualifier		RI		мпі	Unit		р	Prepared	Analyz	ed	Dil Fac
#2 Diesel (C10-C24)			quanner		0.26		0.26	ma/l		- 12	2/18/18 16:33	12/19/18	16.47	1
Motor Oil ($>C24$ -C36)					0.20		0.20	mg/L		10	2/18/18 16:33	12/10/18	16:47	1
		110			5.50		5.00	g/∟		12		12/10/10		
		MB	MB											
Surrogate	%Reco	very	Qualifier	Limi	ts						Prepared	Analyz	ed	Dil Fac
o-Terphenyl		81		50 - 1	150					12	2/18/18 16:33	12/19/18	16:47	1
									_					_
Lab Sample ID: LCS 580-2	291500/2-A								Cli	ent S	ample ID:	Lab Con	trol S	ample
Matrix: Water												Prep Typ	e: To	tal/NA
Analysis Batch: 291548												Prep Ba	tch: 2	291500
				Spike		LCS	LCS	5				%Rec.		

Result Qualifier

1.56

1.60

Unit

mg/L

mg/L

Method: NWTPH-Dx	- Northwest	- Semi-Volatile	Petroleum	Products ((GC)
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MB MB

Result Qualifier

TestAmerica Seattle

D %Rec

78

80

Limits

50 - 120

64 - 120

Added

2.00

2.00

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC) (Continued)

Limits

50 - 150

LCS LCS

%Recovery Qualifier

83

Lab Sample ID: LCS 580-291500/2-A

Matrix: Water

Surrogate

o-Terphenyl

Analysis Batch: 291548

Client Sample ID: Matrix Spike

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Type: Total/NA Prep Batch: 291500

Client Sample ID: Lab Control Sample

6

										_	_
Lab Sample ID: LCSD 580 Matrix: Water Analysis Batch: 291548)-291500/3-A	L .			C	Client Sa	Imple	ID: Lat) Control Prep Tyj Prep Ba	Sample pe: Tot atch: 29	∍ Dup al/NA ∋1500
-			Spike	LCSD	LCSD				%Rec.		RPD
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)			2.00	1.52		mg/L		76	50 - 120	3	26
Motor Oil (>C24-C36)			2.00	1.55		mg/L		78	64 - 120	3	24
	LCSD	LCSD									
Surrogate	%Recovery	Qualifier	Limits								
o-Terphenyl	80		50 - 150								
Lab Sample ID: 580-8261	4-A-3-B MSC)				Client	Samp	le ID: N	latrix Spil	ke Dup	licate
Matrix: Water									Prep Ty	pe: Tot	al/NA
Analysis Batch: 291681									Prep Ba	tch: 29) 1500

Lab Sample ID: 580-82614-A-3-B MS Matrix: Water Analysia Potaby 201691

Analysis Balch: 291001									Ргер Ба	acn: 28	1200
	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)	ND		2.03	1.68		mg/L		82	50 - 120	22	26
Motor Oil (>C24-C36)	ND		2.03	1.82		mg/L		90	64 - 120	19	24
	MSD	MSD									
Surrogate	%Recovery	Qualifier	Limits								
. Townhow d	75		<u> </u>								

o-Terphenyl 75 50 - 150

Lab Sample ID: 580-82614-B-3-A MS Matrix: Water

Analysis Batch: 291548									Prep Batch: 291500
	Sample	Sample	Spike	MS	MS				%Rec.
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
#2 Diesel (C10-C24)	ND		2.03	1.35		mg/L		66	50 - 120
Motor Oil (>C24-C36)	ND		2.03	1.50		mg/L		74	64 - 120
	MS	MS							
Surrogate	%Recovery	Qualifier	Limits						
o-Terphenyl	73		50 - 150						

Lab Sample ID: MB 580-291520/1-A **Matrix: Water**

Matrix: Water Analysis Batch: 291854							i i	Prep Type: To Prep Batch: :	otal/NA 291520
-	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.065	0.065	mg/L		12/19/18 09:39	12/21/18 21:47	1
Motor Oil (>C24-C36)	ND		0.096	0.096	mg/L		12/19/18 09:39	12/21/18 21:47	1
	МВ	МВ							
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	82		50 - 150				12/19/18 09:39	12/21/18 21:47	1

5 6

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC) (Continued)

							•	/ \		,		
Lab Sample ID: LCS 580-2 Matrix: Water Analysis Batch: 291854	291520/2-A						Clien	it Sa	mple ID:	Lab Con Prep Typ Prep Ba	trol Sa e: Tot tch: 29	imple al/NA 91520
				Spike	LCS	LCS				%Rec.		
Analyte				Added	Result	Qualifier	Unit	D	%Rec	Limits		
#2 Diesel (C10-C24)	· ·			2.00	1.70		mg/L		85	50 - 120		
Motor Oil (>C24-C36)				2.00	2.10		mg/L		105	64 - 120		
							•					
	LCS	LCS										
Surrogate	%Recovery	Qua	lifier	Limits								
o-Terphenyl	98			50 - 150								
Lab Sample ID: LCSD 590	201520/2 A						Client Sa	mnlo		Control S	ample	Dun
Matrix: Water	-231320/3-A						Sherit Sai	inhie		Drop Typ	o: Tot	
Analysis Batch: 201854										Prop Ba	e. 100	al/14A
Analysis Datch. 291034				Sniko								RPD
Analyte					Result	Qualifier	Unit	п	%Rec	l imite	RDD	Limit
$\frac{1}{2} \text{ Diesel} (C10-C24)$				2 00	1 74	Quanner			87	50 120	2	26
$\frac{1}{2} \text{ Diesel } (C10-C24)$				2.00	2 14		mg/L		107	64 120	2	20
MOIOI OII (>C24-C30)				2.00	2.14		IIIg/L		107	04 - 120	2	24
	LCSD	LCS	D									
Surrogate	%Recovery	Qua	lifier	Limits								
o-Terphenyl	93			50 - 150								
Lab Sample ID: MB 580-2	91536/1-A							Clie	ent Samp	ole ID: Me	thod I	Blank
Matrix: Water										Prep Typ	e: Tot	al/NA
Analysis Batch: 291649										Prep Ba	tch: 29	91536
	I	MB	МВ									
Analyte	Res	sult	Qualifier	RL	·	MDL Unit	D	P	repared	Analyz	ed l	Dil Fac
#2 Diesel (C10-C24)		ND		0.065	6 C	.065 mg/L		12/1	9/18 11:13	12/20/18 1	9:16	1
Motor Oil (>C24-C36)		ND		0.096	6 C	.096 mg/L		12/1	9/18 11:13	12/20/18 1	9:16	1
		ΜВ	МВ									
Surrogate	%Recov	erv	Qualifier	Limits				P	repared	Analvz	ed i	Dil Fac
o-Terphenyl		106		50 - 150	-			12/1	9/18 11:13	12/20/18 1	9:16	1
Lab Sample ID: LCS 580-2	291536/2-A						Clien	it Sa	mple ID:	Lab Con	trol Sa	mple
Matrix: Water										Prep Typ	e: Tot	al/NA
Analysis Batch: 291649										Prep Ba	tch: 29	91536
				Spike	LCS	LCS				%Rec.		
Analyte				Added	Result	Qualifier	Unit	D	%Rec	Limits		
#2 Diesel (C10-C24)				0.500	0.452		mg/L		90	50 - 120		
Motor Oil (>C24-C36)				0.500	0.509		mg/L		102	64 - 120		
							0					
	LCS	LCS										
Surrogate	%Recovery	Qua	lifier	Limits								
o-Terphenyl	103			50 - 150								
	204526/2 4						Client Co	male		Control	o med -	D
Lab Sample ID: LCSD 580	J-291330/3-A					, c	Silent Sal	npie				
watrix: water										rep iyp	e: Iot	
Analysis Batch: 291649				Calles		1.000				гер ва	icn: 29	11536
Analyta				эріке Аддад	LUSD Baasslé		110:14	-	0/ D =c	%ReC.	000	RPU Liwit
					Result	Qualifier			%Rec			
#2 Diesel (C10-C24)				0.500	0.473		mg/L		95	00 - 120 64 400	4	20
				0.500	0.536		mg/L		107	04 - 120	5	24

o-Terphenyl

5 6

Lab Sample ID: LCSD 580 Matrix: Water Analysis Batch: 291649)-291536/3-A							С	lient S	ampl	e	ID: Lab	Control S Prep Tyj Prep Ba	Sampl be: To itch: 2	e Dup tal/NA 91536
	LCSD	LCS	SD												
Surrogate	%Recovery	Qua	alifier	Limits											
o-Terphenyl	108			50 - 150											
Lab Sample ID: MB 580-2	91573/1-A									C	lie	nt Samp	ole ID: M	ethod	Blank
Matrix: Water													Prep Ty	be: To	tal/NA
Analysis Batch: 292099													Prep Ba	tch: 2	91573
		MB	MB												
Analyte	Re	sult	Qualifier		RL	I	MDL	Unit		D	Pr	epared	Analyz	ed	Dil Fac
#2 Diesel (C10-C24)		ND		C	0.065	0	.065	mg/L		12	2/19	9/18 14:58	12/27/18	21:49	1
Motor Oil (>C24-C36)		ND		C	0.096	0	.096	mg/L		12	2/19	9/18 14:58	12/27/18	21:49	1
		MВ	MB												
Surrogate	%Reco	very	Qualifier	Limi	its						Pr	repared	Analyz	ed	Dil Fac
o-Terphenyl		109		50 -	150					12	2/19	9/18 14:58	12/27/18	21:49	1
- Lah Sample ID: LCS 580-	291573/2-4								Clie	ont S	an	nnle ID:	Lah Cor	trol S	amnle
Matrix: Water													Prep Tvi	be: To	tal/NA
Analysis Batch: 292099													Prep Ba	tch: 2	91573
· · · · · , · · · · · · · · · · · · · · · · · · ·				Spike		LCS	LCS						%Rec.		
Analyte				Added		Result	Qua	lifier	Unit	I	D	%Rec	Limits		
#2 Diesel (C10-C24)				0.500		0.486			mg/L		_	97	50 - 120		
Motor Oil (>C24-C36)				0.500		0.543			mg/L			109	64 - 120		
	LCS	LCS	6												
Surrogate	%Recovery	Qua	alifier	Limits											
o-Terphenyl	115			50 - 150											
Lab Sample ID: LCSD 580)-291573/3-A							С	lient S	ampl	e	ID: Lab	Control	Sampl	e Dup
Matrix: Water													Prep Ty	be: To	tal/NA
Analysis Batch: 292099													Prep Ba	tch: 2	91573
				Spike		LCSD	LCS	D					%Rec.		RPD
Analyte				Added		Result	Qua	lifier	Unit		D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)				0.500		0.323	*		mg/L			65	50 - 120	40	26
				0 500		0 270	*		ma/l			76	64 120	26	24
Motor Oil (>C24-C36)				0.500		0.376			IIIg/L			70	04 - 120	30	24
Motor Oil (>C24-C36)	LCSD	LCS	SD	0.500		0.376			mg/∟			70	04 - 120	30	27

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC) - RE

87

Lab Sample ID: MB 580-29229 Matrix: Water Analysis Batch: 292294	1/1 -A						Client Samp	le ID: Methoo Prep Type: To Prep Batch: ∷	l Blank otal/NA 292291
	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24) - RE	ND		0.065	0.065	mg/L		12/30/18 07:34	12/30/18 13:59	1
Motor Oil (>C24-C36) - RE	ND		0.096	0.096	mg/L		12/30/18 07:34	12/30/18 13:59	1

50 - 150

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC) - RE (Continued)

MB MB

%Recovery Qualifier

Lab Sample ID: MB 580-292291/1-A

Matrix: Water

Surrogate

Analysis Batch: 292294

Analyzed

Prep Type: Total/NA

Prepared

Client Sample ID: Lab Control Sample Dup

Client Sample ID: Method Blank Prep Type: Total/NA Prep Batch: 292291 Dil Fac 6

o-Terphenyl - RE		106	50 - 150	-			12/3	80/18 07:34	12/30/18 13:59	9 1
Lab Sample ID: LCS 580-2 Matrix: Water Analysis Batch: 292294	92291/2-A		0.11	1.00	1.00	Clier	nt Sa	mple ID:	Lab Control Prep Type: 1 Prep Batch:	Sample Fotal/NA : 292291
			Spike	LCS	LCS				%Rec.	
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits	
#2 Diesel (C10-C24) - RE			0.500	0.470		mg/L		94	50 - 120	
Motor Oil (>C24-C36) - RE			0.500	0.501		mg/L		100	64 - 120	
	LCS	LCS								
Surrogate o-Terphenyl - RE	%Recovery 71	Qualifier	Limits							

Limits

Lab Sample ID: LCSD 580-292291/3-A **Matrix: Water**

Analysis Batch: 292294									Prep Ba	tch: 29	92291
-			Spike	LCSD	LCSD				%Rec.		RPD
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24) - RE			0.500	0.480		mg/L		96	50 - 120	2	26
Motor Oil (>C24-C36) - RE			0.500	0.511		mg/L		102	64 - 120	2	24
	LCSD	LCSD									
Surrogate	%Recovery	Qualifier	Limits								
o-Terphenyl - RE	81		50 - 150								

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH with Silica Gel Cleanup

Lab Sample ID: MB 580-29153 Matrix: Water Analysis Batch: 291649	<mark>36/1-В</mark> мв	МВ							Clie	ent Samp	le ID: Metho Prep Type: T Prep Batch:	d Blank otal/NA 291536
Analyte	Result	Qualifier	RL	I	MDL	Unit		D	Pi	repared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.065	0	.065	mg/L		_	12/1	9/18 11:13	12/20/18 17:48	1
Motor Oil (>C24-C36)	ND		0.096	0	.096	mg/L			12/1	9/18 11:13	12/20/18 17:48	1
	MB	МВ										
Surrogate	%Recovery	Qualifier	Limits						P	repared	Analyzed	Dil Fac
o-Terphenyl	110		50 - 150						12/1	9/18 11:13	12/20/18 17:48	1
Lab Sample ID: LCS 580-2915 Matrix: Water Analysis Batch: 291649	36/2-B						Clie	ent	Sar	nple ID:	Lab Control Prep Type: T Prep Batch:	Sample otal/NA 291536
· · · · · , · · · · · · · · · · · · · · · ·			Spike	LCS	LCS						%Rec.	
Analyte			Added	Result	Qua	lifier	Unit		D	%Rec	Limits	
#2 Diesel (C10-C24)			0.500	0.467			mg/L			93	50 - 120	
Motor Oil (>C24-C36)			0.500	0.515			mg/L			103	64 - 120	

2 3 4 5 6 7 8

Method: NWTPH-Dx - S	Semi-Vola	tile Petrol	eum Produ	ucts b	y NWT	PH with	n Sil	ica Gel	Cleanu	р	
(Continued)											
Lab Sample ID: LCS 580-2 Matrix: Water	91536/2-B					Clier	nt Sa	mple ID:	Lab Cor Prep Typ	itrol Sa be: To	ample tal/NA
Analysis Batch: 291649									Ргер Ва	itch: 2	91530
O	LCS	LCS									
	[%] Recovery	Qualifier	50 150								
	100		00-700								
Lab Sample ID: LCSD 580-	-291536/3-B				C	Client Sa	mple	ID: Lab	Control	Sampl	e Dup
Matrix: Water									Prep Ty	be: To	tal/NA
Analysis Batch: 291649			Omilia						Prep Ba	tch: 2	91536
Analyte			Spike Added	Result	Qualifier	Unit	п	%Rec	%Rec.	RPD	Limit
#2 Diesel (C10-C24)			0.500	0.497		mg/L		99	50 - 120	6	26
Motor Oil (>C24-C36)			0.500	0.652	*	mg/L		130	64 - 120	23	24
	1050	1000									
Surrogate	%Recoverv	Qualifier	Limits								
o-Terphenyl	110		50 - 150								
								_			
Lab Sample ID: MB 580-29)2291/1-B						Clie	ent Sam	ole ID: M	ethod	Blank
Matrix: water									Prep I y	0e: 10	(al/NA
Analysis Batch. 232234		MB MB							гіер Ба	iii. 2	52251
Analyte	Re	sult Qualifier	RL	1	MDL Unit		р р	repared	Analyz	ed	Dil Fac
#2 Diesel (C10-C24)		ND	0.065	0	.065 mg/L		12/3	30/18 07:34	12/30/18	16:31	1
Motor Oil (>C24-C36)		ND	0.096	0	.096 mg/L		12/3	30/18 07:34	12/30/18	16:31	1
		MB MB									
Surrogate	%Reco	very Qualifier	Limits				P	Prepared	Analyz	zed	Dil Fac
o-Terphenyl		109	50 - 150				12/3	30/18 07:34	12/30/18	16:31	1
Lab Sample ID: LCS 580.2	02201/2_R					Clior	at Sa		Lab Cor	trol S	amnlo
Matrix: Water	3223 1/2 - D					Cilei	n Ja	inple iD.	Prep Tvi	be: To	tal/NA
Analysis Batch: 292294									Prep Ba	tch: 2	92291
			Spike	LCS	LCS				%Rec.		
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits		
#2 Diesel (C10-C24)			0.500	0.477		mg/L		95	50 - 120		
Motor OII (>C24-C36)			0.500	0.509		mg/L		102	64 - 120		
	LCS	LCS									
Surrogate	%Recovery	Qualifier	Limits								
o-Terphenyl	81		50 - 150								
Lab Sample ID: LCSD 580	-292291/3-B				c	Client Sa	mple	ID: Lab	Control	Sampl	e Dup
Matrix: Water									Prep Ty	be: To	tal/NA
Analysis Batch: 292294									Prep Ba	tch: 2	92291
Anabata			Spike	LCSD	LCSD	11	-	~ D	%Rec.		RPD
Analyte			Added	Result	Qualifier		D	%Rec	Limits		Limit
Motor Oil (>C24-C36)			0.500	0.490		ma/l		99 107	64 <u>-</u> 120	4	20 24
			0.000	0.000		.			J 120	5	- 1
Surrogato	LCSD	LCSD	Limito								
o-Terphenyl	84	wuannier	50 - 150								

Factor

1

Run

Batch

Number

Prepared

or Analyzed

291276 12/17/18 07:40 KO

291367 12/18/18 05:53 CJ

Analyst

Lab TAL SEA

TAL SEA

Client Sample ID: MW-4-121118

Batch

Туре

Prep

Analysis

Batch

Method

3510C

NWTPH-Dx

Date Collected: 12/11/18 09:40

Date Received: 12/13/18 17:30

Prep Type

Total/NA

Total/NA

Lab Sample ID: 580-82652-1

2652-3

Lab Sample ID: 580-82652-5

Lab Sample ID: 580-82652-6

Matrix: Water

Matrix: Water

Matrix: Water

Client Sam	ple ID: MW	/-3-121118					Lab S	Sample ID	: 580-82652-2
Date Collecte	ed: 12/11/18 0 d: 12/13/18 1	9:43 7:30						-	Matrix: Water
	Batch	Batch		Dilution	Batch	Prepared			
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab	
Total/NA	Prep	3510C			291276	12/17/18 07:40	KO	TAL SEA	
Total/NA	Analysis	NWTPH-Dx		1	291367	12/18/18 06:15	CJ	TAL SEA	
Client Sam	ple ID: 2A-	W-10-121118					Lab S	Sample ID	: 580-82652-3
Date Collecte	d: 12/11/18 1	0:30							Matrix: Water
Date Receive	d: 12/13/18 1	7:30							
Γ	Batch	Batch		Dilution	Batch	Prepared			
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab	
Total/NA	Prep	3510C			291276	12/17/18 07:40	КО	TAL SEA	
Total/NA	Analysis	NWTPH-Dx		1	291367	12/18/18 06:59	CJ	TAL SEA	
Client Sam	ple ID: 2A-	W-9-121118					Lab S	Sample ID	: 580-82652-4
Date Collecte	d: 12/11/18 1	0:44							Matrix: Water
Date Receive	d: 12/13/18 1	7:30							
_	Batch	Batch		Dilution	Batch	Prepared			
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab	
Total/NA	Prep	3510C			291276	12/17/18 07:40	KO	TAL SEA	
Total/NA	Analysis	NWTPH-Dx		1	291367	12/18/18 07:21	CJ	TAL SEA	

Client Sample ID: 1B-W-23-121118 Date Collected: 12/11/18 12:00 Date Received: 12/13/18 17:30

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			291276	12/17/18 07:40	КО	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	291367	12/18/18 07:43	CJ	TAL SEA

Client Sample ID: GW-3-121118 Date Collected: 12/11/18 12:12 Date Received: 12/13/18 17:30

_	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			291520	12/19/18 09:39	КО	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	291854	12/22/18 02:04	TL1	TAL SEA

Factor

1

1

Run

RE

RE

Batch

Prepared

Number or Analyzed Analyst

292291 12/30/18 07:34 KO

292294 12/30/18 15:04 Z1R

292291 12/30/18 07:34 KO

292293 12/30/18 11:32 KO

292294 12/30/18 17:57 Z1R

Client Sample ID: GW-3-121118

Batch

Туре

Prep

Prep

Analysis

Cleanup

Analysis

Batch

Method

3510C

3510C

3630C

NWTPH-Dx

NWTPH-Dx

Date Collected: 12/11/18 12:12

Date Received: 12/13/18 17:30

Prep Type

Total/NA

Total/NA

Total/NA

Total/NA

Total/NA

Lab Sample ID: 580-82652-6

Lab Sample ID: 580-82652-8

Lab Sample ID: 580-82652-9

Lab Sample ID: 580-82652-10

Matrix: Water

Matrix: Water

Matrix: Water

Lab

TAL SEA

TAL SEA

TAL SEA

TAL SEA

TAL SEA

Matrix: Water

5

Lab Sample ID: 580-82652-7 Matrix: Water

Client Sample ID: GW-30-121118 Date Collected: 12/11/18 12:30 Date Received: 12/13/18 17:30

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			291520	12/19/18 09:39	КО	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	291854	12/22/18 02:26	TL1	TAL SEA

Client Sample ID: EW-2A-121118 Date Collected: 12/11/18 14:49 Date Received: 12/13/18 17:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C	·		291520	12/19/18 09:39	ко	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	291854	12/22/18 02:47	TL1	TAL SEA

Client Sample ID: GW-4-121118 Date Collected: 12/11/18 15:00 Date Received: 12/13/18 17:30

	Batch	Batch		Dilution	Batch	Prepared	A	1
Prep Type	гуре	wethod	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			291520	12/19/18 09:39	KO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	291854	12/22/18 03:09	TL1	TAL SEA

Client Sample ID: 2A-W-42-121118 Date Collected: 12/11/18 16:12 Date Received: 12/13/18 17:30

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			291520	12/19/18 09:39	KO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	291854	12/22/18 03:30	TL1	TAL SEA

Factor

1

Run

Batch

Number

Prepared

291520 12/19/18 09:39 KO

291854 12/22/18 03:51 TL1

or Analyzed

Analyst

Lab

TAL SEA

TAL SEA

Lab Sample ID: 580-82652-11

Lab Sample ID: 580-82652-12

7

580-82652-13

Matrix: Water

Matrix: Water

Date Receive	d: 12/13/18 1	7:30							
Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab	
Total/NA	Prep	3510C			291520	12/19/18 09:39	KO	TAL SEA	
Total/NA	Analysis	NWTPH-Dx		1	291854	12/22/18 04:13	TL1	TAL SEA	
Client Sam Date Collecte Date Receive	ple ID: 2A- d: 12/11/18 0 d: 12/13/18 1	W-40-121118 99:23 7:30					Lab Sa	ample ID:	580-82652-13 Matrix: Water
Г	Batch	Batch		Dilution	Batch	Prenared			
Pren Tyne	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lah	
	Pren	35100			291520	12/19/18 09:39	KO		
Total/NA	Analysis	NWTPH-Dx		1	291854	12/22/18 04:56	TL1	TAL SEA	
Client Sam Date Collecte Date Receive	p le ID: PZ- d: 12/11/18 1 d: 12/13/18 1	8-121118 2:42 7:30					Lab Sa	ample ID:	580-82652-14 Matrix: Water
Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab	
Total/NA	Prep	3510C			291520	12/19/18 09:39	KO	TAL SEA	
Total/NA	Analysis	NWTPH-Dx		1	291854	12/22/18 05:17	TL1	TAL SEA	
Client Sam Date Collecte Date Receive	ple ID: GW d: 12/11/18 1 d: 12/13/18 1	7-1-121118 1:15 7:30					Lab Sa	ample ID:	580-82652-15 Matrix: Water
Г	Batch	Batch		Dilution	Batch	Prepared			
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab	
Total/NA	Prep	3510C			291520	12/19/18 09:39	KO	TAL SEA	
Total/NA	Analysis	NWTPH-Dx		1	291854	12/22/18 05:38	TL1	TAL SEA	
Client Sam Date Collecte Date Receive	ple ID: GW d: 12/11/18 1 d: 12/13/18 1	- 20-121118 0:05 7:30					Lab Sa	ample ID:	580-82652-16 Matrix: Water
Γ	Batch	Batch		Dilution	Batch	Prepared			
Pren Tyne	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab	

TestAmerica Seattle

Batch

Туре

Prep

Client Sample ID: GW-2-121118

Date Collected: 12/11/18 09:50

Analysis

Prep Type

Total/NA

Total/NA

Batch

Method

NWTPH-Dx

3510C

12/31/2018

Date Coll Date Rec

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			291520	12/19/18 09:39	КО	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	291854	12/22/18 05:17	TL1	TAL SEA

Client S Date Coll

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			291520	12/19/18 09:39	KO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	291854	12/22/18 05:38	TL1	TAL SEA

Client S Date Coll Date Rec

_	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			291520	12/19/18 09:39	КО	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	291854	12/22/18 06:00	TL1	TAL SEA

Factor

1

Run

Batch

Prepared

Number or Analyzed Analyst

291520 12/19/18 09:39 KO

291854 12/22/18 06:21 TL1

Client Sample ID: PZ-7S-12118

Batch

Batch

Date Collected: 12/11/18 11:24

Date Received: 12/13/18 17:30

Lab Sample ID: 580-82652-17

Lab Sample ID: 580-82652-18

Lab TAL SEA

TAL SEA

Lab Sample ID: 580-82652-19

Matrix: Water

Matrix: Water

Matrix: Water

Prep Type Туре Method Total/NA Prep 3510C Total/NA Analysis NWTPH-Dx

Client Sample ID: EW-1-121218 Date Collected: 12/12/18 11:50 Date Received: 12/13/18 17:30

Γ	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			291536	12/19/18 11:13	KO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	291649	12/20/18 20:21	CJ	TAL SEA

Client Sample ID: 5-W-19-121118 Date Collected: 12/11/18 15:20 Date Received: 12/13/18 17:30

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			291536	12/19/18 11:13	KO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	291649	12/20/18 20:43	CJ	TAL SEA

Client Sample ID: 5-W-18-121118 Date Collected: 12/11/18 15:35 Date Received: 12/13/18 17:30

_	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			291536	12/19/18 11:13	KO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	291649	12/20/18 21:05	CJ	TAL SEA

Client Sample ID: 5-W-55-121118 Date Collected: 12/11/18 16:45

Date Received: 12/13/18 17:30

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			291536	12/19/18 11:13	KO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	291649	12/20/18 21:48	CJ	TAL SEA

Client Sample ID: 5-W-56-121118 Date Collected: 12/11/18 17:12 Date Received: 12/13/18 17:30

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			291536	12/19/18 11:13	KO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	291649	12/20/18 22:10	CJ	TAL SEA

Lab Sample ID: 580-82652-20

Matrix: Water

Lab Sample ID: 580-82652-21

Matrix: Water

Lab Sample ID: 580-82652-22 Matrix: Water

Lab Sample ID: 580-82652-23

Lab Sample ID: 580-82652-24

Lab Sample ID: 580-82652-25

Lab Sample ID: 580-82652-26

Lab Sample ID: 580-82652-27

Lab Sample ID: 580-82652-28

Matrix: Water

Matrix: Water

Matrix: Water

Matrix: Water

Matrix: Water

Matrix: Water

Client Sample ID: 5-W-43-12111	8
Date Collected: 12/11/18 12:35	

Date	Received:	12/13/18	17:30
-			

Γ	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			291536	12/19/18 11:13	KO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	291649	12/20/18 22:32	CJ	TAL SEA

Client Sample ID: 1C-W-1-121218 Date Collected: 12/12/18 09:40 Date Received: 12/13/18 17:30

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			291536	12/19/18 11:13	КО	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	291649	12/20/18 22:53	CJ	TAL SEA

Client Sample ID: 1C-W-8-121218 Date Collected: 12/12/18 09:41 Date Received: 12/13/18 17:30

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			291536	12/19/18 11:13	KO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	291649	12/20/18 23:15	CJ	TAL SEA

Client Sample ID: 5-W-51-121218 Date Collected: 12/12/18 09:51 Date Received: 12/13/18 17:30

Bron Tuno	Batch	Batch Mothod	Pup	Dilution	Batch	Prepared	Analyst	Lab
Total/NA	Prep		Kuli	Factor	291536	12/19/18 11:13	KO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	291649	12/20/18 23:37	CJ	TAL SEA

Client Sample ID: 1B-W-3-121218 Date Collected: 12/12/18 10:40

Date Received: 12/13/18 17:30

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			291536	12/19/18 11:13	КО	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	291649	12/20/18 23:58	CJ	TAL SEA

Client Sample ID: 2A-W-41-121218 Date Collected: 12/12/18 11:01 Date Received: 12/13/18 17:30

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			291536	12/19/18 11:13	KO	TAL SEA
Total/NA	Cleanup	3630C			291580	12/19/18 15:08	DCV	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	291649	12/20/18 18:54	CJ	TAL SEA

Lab Sample ID: 580-82652-28

Lab Sample ID: 580-82652-29

Lab Sample ID: 580-82652-30

Lab Sample ID: 580-82652-31

Lab Sample ID: 580-82652-32

Lab Sample ID: 580-82652-33

Matrix: Water

Matrix: Water

Matrix: Water

Matrix: Water

Matrix: Water

Matrix: Water

Client Sample ID: 2A-W-41-121218 Date Collected: 12/12/18 11:01 to Decelured, 40/40/40 47:00

	Batch	Batch		Dilution	Batch	Prepared				
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab		
Total/NA	Prep	3510C			291536	12/19/18 11:13	КО	TAL SEA		
Total/NA	Analysis	NWTPH-Dx		1	291649	12/21/18 00:20	CJ	TAL SEA		
	Prep Type Total/NA Total/NA	Batch Prep Type Type Total/NA Prep Total/NA Analysis	Prep TypeBatchBatchTotal/NAPrep3510CTotal/NAAnalysisNWTPH-Dx	BatchBatchPrep TypeTypeMethodTotal/NAPrep3510CTotal/NAAnalysisNWTPH-Dx	BatchBatchDilutionPrep TypeTypeMethodRunFactorTotal/NAPrep3510C1	BatchBatchDilutionBatchPrep TypeTypeMethodRunFactorNumberTotal/NAPrep3510C1291536	BatchBatchBatchDilutionBatchPreparedPrep TypeTypeMethodRunFactorNumberor AnalyzedTotal/NAPrep3510C129153612/19/18 11:13Total/NAAnalysisNWTPH-Dx129164912/21/18 00:20	BatchBatchBatchDilutionBatchPreparedPrep TypeTypeMethodRunFactorNumberor AnalyzedAnalystTotal/NAPrep3510C129153612/19/18 11:13KOTotal/NAAnalysisNWTPH-Dx129164912/21/18 00:20CJ		

Client Sample ID: 2A-W-410-121218 Date Collected: 12/12/18 11:20 Date Received: 12/13/18 17:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			291536	12/19/18 11:13	КО	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	291649	12/21/18 01:03	CJ	TAL SEA

Client Sample ID: 5-W-17-121218 Date Collected: 12/12/18 11:03 Date Received: 12/13/18 17:30

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			291536	12/19/18 11:13	КО	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	291649	12/21/18 01:46	CJ	TAL SEA

Client Sample ID: FWG-WV-121218 Date Collected: 12/12/18 11:40 Date Received: 12/13/18 17:30

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			291536	12/19/18 11:13	КО	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	291649	12/21/18 02:08	CJ	TAL SEA

Client Sample ID: FWG-EV-121218

Date Collected: 12/12/18 12:40 Date Received: 12/13/18 17:30

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			291536	12/19/18 11:13	KO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	291649	12/21/18 02:29	CJ	TAL SEA

Client Sample ID: WG-WV-121218 Date Collected: 12/12/18 13:15 Date Received: 12/13/18 17:30

	Batch	Batch		Dilution	Batch	Prepared		
Prep Туре	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			291536	12/19/18 11:13	КО	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	291649	12/21/18 02:51	CJ	TAL SEA

TestAmerica Seattle

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Factor

1

Run

Batch

Prepared

291536 12/19/18 11:13 KO

291649 12/21/18 03:12 CJ

Number or Analyzed Analyst

Client Sample ID: WG-EV-121218

Batch

Batch

Date Collected: 12/12/18 12:40

Date Received: 12/13/18 17:30

Lab Sample ID: 580-82652-34

Lab

TAL SEA

TAL SEA

2 3 4 5 6 7 8

Lab Sample ID: 580-82652-35 Matrix: Water

9

Lab Sample ID: 580-82652-36

Lab Sample ID: 580-82652-37

Lab Sample ID: 580-82652-38

Lab Sample ID: 580-82652-39

Matrix: Water

Matrix: Water

Matrix: Water

Matrix: Water

Matrix: Water

Prep Type	Туре	Method
Total/NA	Prep	3510C
Total/NA	Analysis	NWTPH-Dx

Client Sample ID: 2B-W-4-121218 Date Collected: 12/12/18 12:23 Date Received: 12/13/18 17:30

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			291536	12/19/18 11:13	КО	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	291649	12/21/18 03:34	CJ	TAL SEA

Client Sample ID: 5-W-16-121218 Date Collected: 12/12/18 12:24 Date Received: 12/13/18 17:30

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			291536	12/19/18 11:13	KO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	291853	12/22/18 01:43	T1W	TAL SEA

Client Sample ID: 5-W-14-121218 Date Collected: 12/12/18 13:27 Date Received: 12/13/18 17:30

_	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			291573	12/19/18 14:58	KO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	292099	12/27/18 23:15	ERZ	TAL SEA

Client Sample ID: S2-AD-121218

Date Collected: 12/12/18 13:40 Date Received: 12/13/18 17:30

	Batch	Batch		Dilution	Batch	Prepared		
Ргер Туре	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			291573	12/19/18 14:58	KO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	292099	12/27/18 23:37	ERZ	TAL SEA

Client Sample ID: S2-AU-121218 Date Collected: 12/12/18 13:13 Date Received: 12/13/18 17:30

_	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			291573	12/19/18 14:58	КО	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	292099	12/27/18 23:59	ERZ	TAL SEA

Dilution

Factor

1

Factor

1

Run

Run

Batch

Batch

Number

291573

292099

Number

Prepared

292099 12/28/18 00:20 ERZ

Prepared

or Analyzed

12/19/18 14:58

12/28/18 00:42 ERZ

291573 12/19/18 14:58

or Analyzed

Analyst

Analyst

KO

KO

Lab

Lab

TAL SEA

TAL SEA

TAL SEA

TAL SEA

Client Sample ID: S2-BD-121218

Batch

Туре

Prep

Client Sample ID: S2-BU-121218

Batch

Туре

Prep

Analysis

Analysis

Batch

3510C

Batch

Method

NWTPH-Dx

3510C

Method

NWTPH-Dx

Date Collected: 12/12/18 13:55

Date Received: 12/13/18 17:30

Date Collected: 12/12/18 13:55

Date Received: 12/13/18 17:30

Prep Type

Total/NA

Total/NA

Prep Type

Total/NA

Total/NA

Matrix: Water

Matrix: Water

Lab Sample ID: 580-82652-40

Lab Sample ID: 580-82652-41

2 3 4 5 6 7 8 9

9 10

Laboratory References:

TAL SEA = TestAmerica Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Client: Farallon Consulting LLC Project/Site: BNSF Skykomish Ground Water TestAmerica Job ID: 580-82652-1

Laboratory: TestAmerica Seattle

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska (UST)	State Program	10	17-024	01-19-19
ANAB	DoD ELAP		L2236	01-19-19
ANAB	ISO/IEC 17025		L2236	01-19-19
California	State Program	9	2901	11-05-19
Montana (UST)	State Program	8	N/A	04-30-20
Nevada	State Program	9	WA000502019-1	07-31-19
Oregon	NELAP	10	WA100007	11-05-19
US Fish & Wildlife	Federal		LE058448-0	07-31-19
USDA	Federal		P330-14-00126	02-10-20
Washington	State Program	10	C553	02-17-19

Sample Summary

Matrix

Water

Water

Client: Farallon Consulting LLC Project/Site: BNSF Skykomish Ground Water

Client Sample ID

MW-4-121118

MW-3-121118

Lab Sample ID

580-82652-1

580-82652-2

12/11/18 09:40 12/13/18 17:30

12/11/18 09:43 12/13/18 17:30

Collected

5

Received

8 9

580-82652-3	2A-W-10-121118	Water	12/11/18 10:30 12/13/18 17:30
580-82652-4	2A-W-9-121118	Water	12/11/18 10:44 12/13/18 17:30
580-82652-5	1B-W-23-121118	Water	12/11/18 12:00 12/13/18 17:30
580-82652-6	GW-3-121118	Water	12/11/18 12:12 12/13/18 17:30
580-82652-7	GW-30-121118	Water	12/11/18 12:30 12/13/18 17:30
580-82652-8	EW-2A-121118	Water	12/11/18 14:49 12/13/18 17:30
580-82652-9	GW-4-121118	Water	12/11/18 15:00 12/13/18 17:30
580-82652-10	2A-W-42-121118	Water	12/11/18 16:12 12/13/18 17:30
580-82652-11	1C-W-7-121118	Water	12/11/18 16:10 12/13/18 17:30
580-82652-12	GW-2-121118	Water	12/11/18 09:50 12/13/18 17:30
580-82652-13	2A-W-40-121118	Water	12/11/18 09:23 12/13/18 17:30
580-82652-14	PZ-8-121118	Water	12/11/18 12:42 12/13/18 17:30
580-82652-15	GW-1-121118	Water	12/11/18 11:15 12/13/18 17:30
580-82652-16	GW-20-121118	Water	12/11/18 10:05 12/13/18 17:30
580-82652-17	PZ-7S-12118	Water	12/11/18 11:24 12/13/18 17:30
580-82652-18	EW-1-121218	Water	12/12/18 11:50 12/13/18 17:30
580-82652-19	5-W-19-121118	Water	12/11/18 15:20 12/13/18 17:30
580-82652-20	5-W-18-121118	Water	12/11/18 15:35 12/13/18 17:30
580-82652-21	5-W-55-121118	Water	12/11/18 16:45 12/13/18 17:30
580-82652-22	5-W-56-121118	Water	12/11/18 17:12 12/13/18 17:30
580-82652-23	5-W-43-121118	Water	12/11/18 12:35 12/13/18 17:30
580-82652-24	1C-W-1-121218	Water	12/12/18 09:40 12/13/18 17:30
580-82652-25	1C-W-8-121218	Water	12/12/18 09:41 12/13/18 17:30
580-82652-26	5-W-51-121218	Water	12/12/18 09:51 12/13/18 17:30
580-82652-27	1B-W-3-121218	Water	12/12/18 10:40 12/13/18 17:30
580-82652-28	2A-W-41-121218	Water	12/12/18 11:01 12/13/18 17:30
580-82652-29	2A-W-410-121218	Water	12/12/18 11:20 12/13/18 17:30
580-82652-30	5-W-17-121218	Water	12/12/18 11:03 12/13/18 17:30
580-82652-31	FWG-WV-121218	Water	12/12/18 11:40 12/13/18 17:30
580-82652-32	FWG-EV-121218	Water	12/12/18 12:40 12/13/18 17:30
580-82652-33	WG-WV-121218	Water	12/12/18 13:15 12/13/18 17:30
580-82652-34	WG-EV-121218	Water	12/12/18 12:40 12/13/18 17:30
580-82652-35	2B-W-4-121218	Water	12/12/18 12:23 12/13/18 17:30
580-82652-36	5-W-16-121218	Water	12/12/18 12:24 12/13/18 17:30
580-82652-37	5-W-14-121218	Water	12/12/18 13:27 12/13/18 17:30
580-82652-38	S2-AD-121218	Water	12/12/18 13:40 12/13/18 17:30
580-82652-39	S2-AU-121218	Water	12/12/18 13:13 12/13/18 17:30
580-82652-40	S2-BD-121218	Water	12/12/18 13:55 12/13/18 17:30
580-82652-41	S2-BU-121218	Water	12/12/18 13:55 12/13/18 17:30

5755 8th Street East

Chain of Custody Record





THE LEADER IN ENVIRONMENTAL TESTING

Tacoma, WA 98424 Phone (253) 922-2310 Fax (253) 922-5047

Client Information	Sampler A. Barthin	ab PM: Allen, Kristine D	Carrier Tracking No(s): COC 580-	No: -31572-9988.1	
Shent Contact:	Phone:	E-Mail:	Page	Page: Page 1 of 5	
eanette Mullin		ansine.allen@testamencanc.com	Job f	¥:	
Faralion Consulting LLC		Analysis Re	quested		
Address:	Due Date Requested:		Pres	ervation Codes:	
375 5th Avenue NW Suite 100	TAT Paguasted (days):		A-H B-N	HCL M - Hexane	
Xity: Issaquah	A Reduested (uays).		C - Z	Zn Acetate O - AsNaO2	
State, Zip:	Standerd		D-N E+N	vitric Acid P - Na2O4S VaHSO4 Q - Na2SO3	
WA. 98027			F-N	APPENDER R - Na2S2O3	
Phone:	TT0100-Q12		H-A	Ascorbic Acid T - TSP Dodecahydrate	
Êmail:	WO #:		I-icr	e U - Acetone	
mullin@farallonconsulting.com	Tax Code 8800 BF10007215		K-E	EDTA W - pH 4-5	
Project Name: RNISE Studiomich Ground Water	Project #: 58006391			DA Z - other (specify)	
Site	SSOW#:		S Other	r:	
Washington	<u></u>				
	Sample Matu				
	Type (Wewa				
	Sample (C=comp, o=wash		8	Special Instructions/Note:	
Sample Identification	Sample Date Time G=graD) BT=Tissue Preservation Co				
MW-4-121118	12/11/18/0940 3 Wat		<u>+</u>		
MW-3-121118	0943 Wat	″ X			
2A - W-10-121118	1330 Wat	r V			
2A - W-9-121118	1044 Wat	r X			
13-W-23-121118	1200 Wat	r X			
GW-3-121118	1212 Wat	r XX		······	
GW- 30-121118	1230 Wat	r X	 		
EW-24-121118	1449 Wat	r 🖌			
GW-4-121118	1500 Wat	r 🔀			
2A-W-42-121118	1612 Wat	r 🔀	580-82652 Chain of Cut	stody	
10-W-7-121118	1/ 1610 V Wat	r X			
Possible Hazard Identification		Sample Disposal (A fee may be	assessed if samples are retained lo	nger than 1 month)	
Non-Hazard Flammable Skin Irritant Pois	son B Unknown Radiological	Return To Client	Disposal By Lab — Archive F	or Months	
Deliverable Requested: I, II, III, IV, Other (specify)		Special Instructions/QC Requirement	การ:		
Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:	Company	
Relinquished by:	Date/Time: 12/13/18 @ 635 forman	In Received by: Tom Blant	Date/Time/ 12/13/18	1730 TA-Sea	
Relinquished by:	Date/Time: Company	Received by:	Date/Time:	Company	
Relinquished by:	Date/Time: Compan	Received by:	Date/Time:	Сотрапу	
Custody Seals Intact: Custody Seal No.:		Cooler Temperature(s) °C and Other R	emarks:		

10

5755 8th Street East

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Chain of Custody Record



THE LEADER IN ENVIRONMENTAL TESTING

Tacoma, WA 98424 Phone (253) 922-2310 Fax (253) 922-5047

Thome (200) 622 2010 1 8x (200) 622 66 1																		
Client Information	Sampler:			Lab P Aller	Lab PM: Carrier Tra Allen, Kristine D					rrier Tracking No(s):					COC No: 580-31572-998{	8.2		
Client Contact:	Phone:			E-Mai	il:											Page:		
jeanette Mullin	kristine.allen@testamericainc.com							Page 2 of 5										
Company: Farallon Consulting LLC								A	nalys	sis R	eque	ested	1				JOD #.	
Address:	Due Date Request	ed:				T			T		1	1			Τ		Preservation Cor	des:
975 5th Avenue NW Suite 100	TAT Requested (d	aveli															A - HCL	M - Hexane
lssaquah	TAT Requested (o		1			ă											C - Zn Acetate	O - AsNaO2
State, Zip:		stinda	Ċ			Hd											D ~ Nitric Acid E - NaHSO4	P - Na2O4S Q - Na2SO3
VVA, 98027 Phone:	PO #:	· ·				ŇN											F - MeOH G - Amchior	R - Na2S2O3 S - H2SO4
	TT0100-Q12				Q	stfo											H - Ascorbic Acid	T - TSP Dodecahydrate
Email: imultin@farallonconsulting.com	WO#: Tax Code 8800	BF1000721	5		4 10	1 64											J - DI Water	V - MCAA
Project Name:	Project #:				80 X 8	port								ĺ		liner	L - EDTA	W - pH 4-5 Z - other (specify)
BNSF Skykomish Ground Water	58006391				pte. Yes	e p										onte	Other	
Site: Washington	330W#.					anda										9		
			Sample	Matrix	red SS a	×-St										liber	1000000 P	
			Туре	(W=water, Scenilid	FILE	ά π				ĺ						N		
	Samala Data	Sample	(C≕comp,	O≃waste/oil,	and a	WTP										0	Special In	etructions/Note
	Sample Date		Preserva	ation Code:	XX	A										Ń	opecial in	
		~~~	<u> </u>	Water					494223322			202 (2010)(010)	1000000000	2009-0200 225			1	
6-N-2-121110	13/11/10	0150	<del>ب</del> ے۔	Water		<u>×</u>			┝──┝				$\left  \right $					
JA-W-40-IJIID	<b>_</b>	0925								+	_							
<u>P=-9-121118</u>		1242		Water		X												
GW-2-121118		1115		Water		×						-						
6W-20-121118		1005		Water		×					_	ļ				-		
PZ-75-121118		1124		Water		$\underline{\lambda}$					_							
EW-1-121218	12/12/18	1335	1150	Water		X												<u></u>
5.11-19-121118	12/11/18	1520		Water									ļļ					
5-12-121118		1535		Water		K					_							
5- W- 55-121118		1645		Water		ĸ	_											
5-W-56 - 12111B	N/	1712	$\checkmark$	Water		$\sim$												
Possible Hazard Identification				·	San	nple Di	isposa	al ( Á	fee m	ay be	asse	ssed	if san	nples	are r	etaine	ed longer than 1	month)
Non-Hazard - Flammable Skin Irritant - F	Poison B 🛄 Unkn	iown Land P	Radiologica	d		Retu	ırn To	Clien	t	ا	Disp	osal E	By Lab	)		^I Arch	ive For	Months
Deliverable Requested: I, II, III, IV, Other (specify)					Spe	cial Ins	structic	ons/Q	C Req	lnitem	ents:							
Empty Kit Relinquished by:		Date:			Time:							Meth	od of S	hipmen	it:			
Relinquished by:	Date/Time:	06	35	Company		Received	d by:	~	Ja	nE	~	Ð	][	Date/Tir ∮a	ne:	5/1%	1730	Company
Relinquished by:	Date/Time:			Company		Received	d by:	~			$\mathcal{O}$		10	Date/Tir	me: /			Company
Relinquished by:	Date/Time:			Company		Received	d by:							Date/Tir	ne:			Company
Custody Seals Intact: Custody Seal No.:	1	· · · · ·				Cooler T	empera	ture(s)	°C and	Other	Remark	s:	<u>(</u>					<u> </u>
Δ Yes Δ No				<u>``</u>		_					· · · ·				11	1.1		

# Chain of Custody Record



THE LEADER IN ENVIRONMENTAL TESTING

5755 8th Street East Tacoma, WA 98424 Phone (253) 922-2310 Fax (253) 922-5047

Fhome (255) 322-2510 Fax (255) 322-3041	Sampler:			Lab F	PM:	******	**				Carri	er Traci	king No(s	):		COC No:			
Client Information	Allen, Kristine D							580-315	72-9988	3.3									
jeanette Mullin	Phone.			E-wa krist	ine.aile	en@te:	stamer	icainc.	com							Page 3 r	of 5		
Company: Earation Consulting LLC								A	nalvsi	is Re	aues	ted				Job #:			
Address:	Due Date Reques	ted:	·			ļ,	ন	T		1						Preserva	ition Cor	des:	
975 5th Avenue NW Suite 100	TAT Requested (d	avsi:					2									A - HCL		M - Hexane	
Issaquah		Nov Z				Ă	5									C - Zn Ac	etate	0 - AsNaO2	
State, Zip: WA 98027	Stu	19. 0				НЦ	2									E - NaHS	300 04	Q - Na2O4S	
Phone:	PO #:					N N	-									F - MeOH G - Amchi	lor	R - Na2S2O3 S - H2SO4	
	110100-Q12 W0#:				Ŷ	list fi	3									H - Ascort	bic Acid	T - TSP Doder U - Acetone	cahydrate
jmullin@farallonconsulting.com	Tax Code 8800	BF1000721	5		2	ding	~									J - DI Wat K - EDTA	ier	V - MCAA W - pH 4-5	
Project Name: BNSF Skykomish Ground Water	Project #: 58006391				e Ce	repo	150									L - EDA		Z - other (spec	cify)
Site:	SSOW#:		· · · · ·		a Single	dard	5									Other:			
Washington		T				Stan	$\neg$								0.4	<b></b>			
			Sample	Matrix	Here Reak	ň	3								1 mil				
		Sample	(C≖comp,	S≃solid, O∞waste/oil,	Hon Hon	Hdiv	2												
Sample Identification	Sample Date	Time	G=grab)	BT=Tissue, A=Air)		Ž	יט							10.655	2	Sp	ecial In	structions/N	lote:
	$\sim$	$\sim$	Preserva /*	Bon Code:	$\wedge$										<u> </u>	×	National State		
5-1N-43-121110	12/11/10	1235	<u>محنیکا</u>	Water		X		_									<u> </u>		
120-W-2-121210	12/12/18	0940		Water		$\lambda$													
10-10-8-121218	ļ į	0441		Water		X													
5-W-51-121218		0951		Water		$\times$													
13-W-3-121218		1040		Water		X													
2A-W-41-121218		1101		Water		X	X												
2A-W-410-121218		1120		Water		X													
5-W-17-121218		1103		Water		$\times$													
FWG-WN-171718		140		Water		X													
FWG-EV-121218		1240		Water		$\times$					ļ								
WG-WV-121218		1315	$\overline{\mathbf{v}}$	Water		X													
Possible Hazard Identification	[]				Sa	mple [	Dispos 	al (A	fee ma	y be a	isses:	sed if	sampl	es are	retain	ed longer	than 1	month)	
Non-Hazard Flammable Skin Irritant Pois	on B Unkr	nown - F	Radiologica	1	50	Rei ecial In	turn To Istructi	onsiΩ(	Requ	lireme	Dispos nts:	al By	Lab		Arci	hive For		Months	<u></u>
Deliverable Requested. 1, in, in, 37, Other (specify)							50.000						( 0)	_					
Empty Kit Relinquished by:	Data	Date:		Compony	Time:	Dessiv	od bur	- 1	///////			vietnoa	or Shipr	ient:				Company	
Relinquished by:	12/12/18	063	15	Faull		Receive	eu by/	[m]	<u> </u>	n	$\leq$	$\bigcirc$	Date.	12	/13/	<u>18 17</u>	30	Company	
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Relinquished by:	Date/Time:			Company		Receive	ed by:						Date	Time:		I		Company	
Custody Seals Intact: Custody Seal No.:	1					Cooler	Tempera	ature(s) '	C and C	ther Re	marks:							122, 234,	<u>h</u> an a
	<del></del>			Page 64	4 of (	L								<u>.</u>			*****	Ver: 08/04/24	0142/31

5755 8th Street East

# Chain of Custody Record



# <u>TestAmerica</u>

THE LEADER IN ENVIRONMENTAL TESTING

Tacoma, WA 98424 Phone (253) 922-2310 Fax (253) 922-5047

	Sampler: Lab PM: Allen, H				PM: n, Krist	M: n, Kristine D					Carrier	Trackir	ng No(s	i):		COC No: 580-31572-998	COC No: 580-31572-9988.4	
Client Contact: icanette Multin	Phone:			E-Ma krist	iii: tine.alle	n@testan	nerica	inc.cor	m							Page: Page 4 of 5		
					Τ	-		Ana	lvsis	Rea	uest	ed				Job #:		
Address:	Due Date Reques	ited:														Preservation Co	ides:	
975 5th Avenue NW Suite 100	TAT Requested (o	tays):														A - HCL B - NaOH	M - Hexane N - None	
Issaquah	Â	dar	ર			ХQ-Н										C - Zn Acetate D - Nitric Acid	0 - AsNaO2 P - Na2O4S	
State, 21p: WA, 98027	51					IMTP:										E - NaHSO4 F - MeOH	Q - Na2SO3 R - Na2S2O3	
Phone:	PO#: TT0100-Q12				0	t for h									COLUMN THE PARTY OF	G - Amchlor H - Ascorbic Acid	S - H2SO4 T - TSP Dodecahydrate	
Email:	WO#: Tax Code 8800	BE1000721	5		N (S	ng lis										J - DI Water	U - Acetone V - MCAA	
Project Name:	Project #:				18 8	Bporti										K - EDTA L - EDA	W - pH 4-5 Z - other (specify)	
BNSF Skykomish Ground Water Site:	58006391 SSOW#:				eld Se	lard r										Conter:		
Washington		1		Г	d Sai	Stand										5		
			Sample	Matrix (wewater.	a as	۰ ۵									1000000	<u>g</u>		
		Sample	(C≖comp,	S⇔solid, O≃waste/oil,	eld F	NTPH												
Sample Identification	Sample Date	Time	G≃grab) Preserva	81=Tissue, A=Air) ation Code:		ž A										Special I	nstructions/Note:	
WG- EN-121218	12/12/18	1240	6	Water	fΥ	X												
28-W-4-121218	1	1223	ì	Water		X		T										
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	<u>h</u>	R		Water					-				+-	┼╌╏			<u></u>	
<u>_</u>		$\sim$		Water					+	$\vdash$				+				
Possible Hazard Hentification		<u>ľ</u>			Sa	nole Disc	osal	( A fee	may	be as	sesse	ed if s	ampl	es are	e retai	ined longer than '	1 month)	
Non-Hazard Generation Skin Irritant Poise	on B 🗔 Unki	nown 🗆 H	Radiologica	d .	Ē		To C	lient	Ē	Di	sposa	l By L	.ab		An	chive For	Months	
Deliverable Requested: I, II, III, IV, Other (specify)					Spe	cial Instru	iction	s/QC F	Require	ement	<b>S</b> :							
Empty Kit Relinquished by:		Date:			Time:			`			M	ethod o	f Shipn	nent:				
Relinquished by:	Date/Time:	1801	535	Company	n	Received by	To	mA	San	K	<u>_</u> .	)	Date	/Time: 12/	13/	18 1730	Company S 7/1-5	
Relinquished by:	Date/Time:	<u> </u>		Company		Received by	y.			+-7	5		Date	/Time:	<i>/</i> /		Company	
Relinguished by:	Date/Time:			Company		Received by	y:						Date	/Time:			Company	
													1					

Therm ID: A2 Corr. 0.3 ° Unc. 0.5 ° Cooler Dsc: <u>1, 61, 720</u> , Packing: <u>burb</u> , <u>Fedf.x:</u> Cust. Seal: <u>Ves. Moo</u> UPS: Blue loc, <u>Wet</u> , Dry, None Lab Courr. <u>A</u>	Therm. ID:A.2.Conr.Z.0Unc.2.2.Cooler Dsc.LaBlackFedEx:Packing:LaDTracking:Cust. Seal:VesNoneUnst.Blue feeWei, Dry, NoneOther:	Therm. ID: <u>A. Corr. 1.1 ° Unc. 1.3 °</u> Cooler Dsc: <u>A.a Bhr?</u> FedEx: Packing: <u>bay 6 FedEx:</u> Cust. Seal: <u>Ves Avo</u> 1. PS: Blue Ice, Met. Dry, None Other: <u>A</u>	Therm. ID:    A. C.orr.    0, 8    0. Inc.    1. 0    0      Cooler Dsc:    Log Areland    FedEx:    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0

• l'nc: <u>1, 9 •</u> FedEx: Lab Cour: <u>1</u> Other:	2 • t ne: <u>A A + •</u> - FedEx:	Solution  1 mc:  0.  7    FedEx:	رض tine: <u>ارج</u> ه FedEx: TPS: Lab Cour: Other:	S  Une:  Z. + 0    FedEx:	7  •  1 mc. (, )  •    PedEx:  •  •  •    1 PS:  •  •  •    Other:  •  •  •	0  ('nc: 2,2
D: <u>A2.</u> (or: <u>1, 7</u> se: <u>L5</u> Greezen <u>b-U5</u> d: Jes <u>z</u> No Mei Dry, None	$\frac{\text{ID: } A2  \text{C ior: } \frac{1}{1}\frac{1}{2}}{\text{SUV}}$ Sec: $\underline{L_{A1}} \underline{B}\underline{UV}$ all $\frac{1}{2}\text{es}\underline{X}$ No $\frac{1}{2}\text{es}\underline{V}$ None	10: 42 Cor: 2. Dsc: 1. 1. Blue sel: Yes X'No e. (Yet) Dry, None	h. 11): A.2. Cor: 1 Dsc: 4 B.C. eat: Ves A No eat: Ves A No	. ID: <u>A2</u> Cor: <u>7</u> Dsc: <u>La Rud</u> e: <u>bu b</u> eal: Vee <u>X vo</u> e. Mel Dry, None	1D: A.2. (.or. 1., Dsc: G_1-2 c: f_1 G_1-2 c: br. Vone .((et, Dry, Vone	D: A2 Corr. 2.,
nerm. I ooler D acking: ust. Se Jue Ice	Therm. Sooler J Zacking Cust. Sy Blue Ice	Therm Cooler Packin Cust. 5 Blue Id	Therm Cooler Packir Cust. 5 Blue L	Therm Cooler Packin Cust. S Blue Ic	Fherm. Cooler Packing Just. S	herm. Jooler J acking tust. Se due Ice

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12/31/2018

10

### Client: Farallon Consulting LLC

### Login Number: 82652 List Number: 1 Creator: Gall, Brandon A

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td>Lab does not accept radioactive samples.</td>	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Job Number: 580-82652-1

List Source: TestAmerica Seattle



# **ANALYTICAL REPORT**

### TestAmerica Laboratories, Inc.

TestAmerica Seattle 5755 8th Street East Tacoma, WA 98424 Tel: (253)922-2310

### TestAmerica Job ID: 580-84026-1

Client Project/Site: BNSF Skykomish Ground Water Revision: 1

### For:

Farallon Consulting LLC 975 5th Avenue NW Suite 100 Issaquah, Washington 98027

Attn: Peter Kingston

Knistine D. allen

Authorized for release by: 2/26/2019 4:50:50 PM

Kristine Allen, Manager of Project Management (253)248-4970 kristine.allen@testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

······ Links ······ **Review your project** results through **Total** Access Have a Question? Ask-The Expert Visit us at: www.testamericainc.com

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Receipt Checklists 26	Chain of Custody	25
	Receipt Checklists	26
# Job ID: 580-84026-1

# Laboratory: TestAmerica Seattle

### Narrative

Job Narrative 580-84026-1

## Comments

Report was revised 2-26-19 to correct to sample IDs.

No additional comments.

## Receipt

The samples were received on 2/21/2019 2:45 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 0.1° C, 1.2° C and 1.8° C.

# **Receipt Exceptions**

The container labels for the following sample did not match the information listed on the Chain-of-Custody (COC): GW-2-022019 (580-84026-14). The container labels list the sampling time 13:59, while the COC lists 14:32. The sample is logged in per COC.

## GC Semi VOA

Method(s) NWTPH-Dx: The following samples contained a hydrocarbon pattern in the diesel range; however, the elution pattern was later than the typical diesel fuel pattern used by the laboratory for quantitative purposes: S2-BU-021919 (580-84026-3), WG-WV-021919 (580-84026-5), WG-EV-021919 (580-84026-6) and P2-7S-022019 (580-84026-9).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

## **Organic Prep**

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

# **Definitions/Glossary**

# Client: Farallon Consulting LLC Project/Site: BNSF Skykomish Ground Water

# Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)

TEQ Toxicity Equivalent Quotient (Dioxin)

# Client Sample ID: S2-AU-021919 Date Collected: 02/19/19 13:35 Date Received: 02/21/19 14:45

# Lab Sample ID: 580-84026-1 Matrix: Water

atrix:	Water

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)											
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac		
#2 Diesel (C10-C24)	ND		0.061		mg/L		02/22/19 08:59	02/22/19 19:56	1		
Motor Oil (>C24-C36)	ND		0.091		mg/L		02/22/19 08:59	02/22/19 19:56	1		
Surrogate o-Terphenyl	%Recovery 100	Qualifier	Limits 50 - 150				<b>Prepared</b> 02/22/19 08:59	Analyzed 02/22/19 19:56	Dil Fac		

# Client Sample ID: S2-AD-021919 Date Collected: 02/19/19 13:40 Date Received: 02/21/19 14:45

# Lab Sample ID: 580-84026-2 Matrix: Water

5

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)												
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac			
#2 Diesel (C10-C24)	ND		0.062		mg/L		02/22/19 08:59	02/22/19 20:39	1			
Motor Oil (>C24-C36)	ND		0.091		mg/L		02/22/19 08:59	02/22/19 20:39	1			
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac			
o-Terphenyl	95		50 - 150				02/22/19 08:59	02/22/19 20:39	1			

# **Client Sample Results**

RL

0.061

0.091

Limits

50 - 150

MDL Unit

mg/L

mg/L

D

Prepared

Prepared

Client: Farallon Consulting LLC Project/Site: BNSF Skykomish Ground Water

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

0.29

0.27

%Recovery Qualifier

103

Result Qualifier

TestAmerica Job ID: 580-84026-1

# 24026-1 2026-3 3 Water 4 Dil Fac 1 1

Dil Fac

1

Client Sample ID: S2-BU-021919 Date Collected: 02/19/19 13:50 Date Received: 02/21/19 14:45

Analyte

Surrogate

o-Terphenyl

#2 Diesel (C10-C24)

Motor Oil (>C24-C36)

# Lab Sample ID: 580-84026-3 Matrix: Water

02/22/19 08:59 02/22/19 21:01

02/22/19 08:59 02/22/19 21:01

02/22/19 08:59 02/22/19 21:01

Analyzed

Analyzed

TestAmerica	Seattle
-------------	---------

RL

0.062

0.091

Limits

50 - 150

MDL Unit

mg/L

mg/L

D

Prepared

Prepared

Client: Farallon Consulting LLC Project/Site: BNSF Skykomish Ground Water

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Result Qualifier

ND

ND

%Recovery Qualifier

108

# Client Sample ID: S2-BD-021919 Date Collected: 02/19/19 13:51 Date Received: 02/21/19 14:45

Analyte

Surrogate

o-Terphenyl

#2 Diesel (C10-C24)

Motor Oil (>C24-C36)

# Lab Sample ID: 580-84026-4 Matrix: Water

02/22/19 08:59 02/22/19 21:23

02/22/19 08:59 02/22/19 21:23

02/22/19 08:59 02/22/19 21:23

Analyzed

Analyzed

)26-4 Water	
Dil Fac	5
1 1	
Dil Fac	
	8
	0

Client Sample ID: WG-WV-021919

Date Collected: 02/19/19 15:14

# Lab Sample ID: 580-84026-5 Matrix: Water

Date Received: 02/21/19 14:	ate Received: 02/21/19 14:45												
Method: NWTPH-Dx - Nort	hwest - Semi-V	olatile Pet	roleum Prod	ucts (G	C)								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac				
#2 Diesel (C10-C24)	0.22		0.062		mg/L		02/22/19 08:59	02/22/19 21:44	1				
Motor Oil (>C24-C36)	0.30		0.091		mg/L		02/22/19 08:59	02/22/19 21:44	1				
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac				
o-Terphenyl	98		50 - 150				02/22/19 08:59	02/22/19 21:44	1				

5

TestAmerica Seattle

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Client Sample ID: WG-EV-021919

Date Collected: 02/19/19 15:05

Date Received: 02/21/19 14:45

# Lab Sample ID: 580-84026-6 Matrix: Water

5

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)												
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac			
#2 Diesel (C10-C24)	0.52		0.062		mg/L		02/22/19 08:59	02/22/19 22:06	1			
Motor Oil (>C24-C36)	0.49		0.091		mg/L		02/22/19 08:59	02/22/19 22:06	1			
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac			
o-Terphenyl	84		50 - 150				02/22/19 08:59	02/22/19 22:06	1			

# Client Sample ID: FWG-EV-021919 Date Collected: 02/19/19 15:50 Date Received: 02/21/19 14:45

# Lab Sample ID: 580-84026-7 Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.061		mg/L		02/22/19 08:59	02/22/19 22:28	1
Motor Oil (>C24-C36)	ND		0.091		mg/L		02/22/19 08:59	02/22/19 22:28	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	95		50 - 150				02/22/19 08:59	02/22/19 22:28	1

RL

0.062

0.091

Limits

50 - 150

MDL Unit

mg/L

mg/L

D

Prepared

Prepared

# Client Sample ID: FWG-WV-021919 Date Collected: 02/19/19 15:55 Date Received: 02/21/19 14:45

Analyte

Surrogate

o-Terphenyl

#2 Diesel (C10-C24)

Motor Oil (>C24-C36)

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Result Qualifier

ND

ND

%Recovery Qualifier

98

# Lab Sample ID: 580-84026-8 Matrix: Water

02/22/19 08:59 02/22/19 22:49

02/22/19 08:59 02/22/19 22:49

02/22/19 08:59 02/22/19 22:49

Analyzed

Analyzed

)26-8 Water	
Dil Fac	5
1 1	
Dil Fac	

# Client Sample ID: PZ-7S-022019 Date Collected: 02/20/19 10:07 Date Received: 02/21/19 14:45

# Lab Sample ID: 580-84026-9 Matrix: Water

<b>^</b> .	water	
		i
	Dil Fac	

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)											
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac		
#2 Diesel (C10-C24)	ND		0.062		mg/L		02/22/19 08:59	02/22/19 23:11	1		
Motor Oil (>C24-C36)	0.11		0.091		mg/L		02/22/19 08:59	02/22/19 23:11	1		
Surrogate o-Terphenyl	%Recovery 99	Qualifier	Limits				<b>Prepared</b> 02/22/19 08:59	Analyzed 02/22/19 23:11	Dil Fac		

# Client Sample ID: PZ-8-022019 Date Collected: 02/20/19 10:59 Date Received: 02/21/19 14:45

# Lab Sample ID: 580-84026-10 Matrix: Water

Method: NWTPH-Dx - N	orthwest - Semi-V	olatilo Pot	roleum Produ	ucts (G	(1)				
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062		mg/L		02/22/19 08:59	02/22/19 23:32	1
Motor Oil (>C24-C36)	ND		0.091		mg/L		02/22/19 08:59	02/22/19 23:32	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	97		50 - 150				02/22/19 08:59	02/22/19 23:32	1

5

TestAmerica Job ID: 580-84026-1

# Client Sample ID: EW-1-022019 Date Collected: 02/20/19 11:39 Date Received: 02/21/19 14:45

# Lab Sample ID: 580-84026-11 Matrix: Water

5

Method: NWTPH-Dx - North	hwest - Semi-Volatil	le Petroleum Prod	ucts (GC)				
Analyte	Result Quali	ifier RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND	0.062	mg/L		02/22/19 08:59	02/22/19 23:54	1
Motor Oil (>C24-C36)	ND	0.091	mg/L		02/22/19 08:59	02/22/19 23:54	1
Surrogate	%Recovery Quali	ifier Limits			Prepared	Analyzed	Dil Fac
o-Terphenyl	96	50 - 150			02/22/19 08:59	02/22/19 23:54	1

# Client Sample ID: 5-W-43-022019 Date Collected: 02/20/19 12:21 Date Received: 02/21/19 14:45

# Lab Sample ID: 580-84026-12 Matrix: Water

Method: NWTPH-Dx - No	orthwest - Semi-V	olatile Pet	roleum Prod	ucts (G	C)				
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062		mg/L		02/22/19 08:59	02/23/19 00:37	1
Motor Oil (>C24-C36)	ND		0.091		mg/L		02/22/19 08:59	02/23/19 00:37	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	107		50 - 150				02/22/19 08:59	02/23/19 00:37	1

TestAmerica Job ID: 580-84026-1

# Client Sample ID: GW-1-022019 Date Collected: 02/20/19 13:06 Date Received: 02/21/19 14:45

# Lab Sample ID: 580-84026-13 Matrix: Water

Method: NWTPH-Dx - Northy	vest - Semi-V	olatile Pet	roleum Prod	ucts (G	C)				
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062		mg/L		02/22/19 08:59	02/23/19 00:59	1
Motor Oil (>C24-C36)	ND		0.091		mg/L		02/22/19 08:59	02/23/19 00:59	1
Surrogate		Qualifier	Limits				<b>Prepared</b>	Analyzed	Dil Fac

5

TestAmerica Job ID: 580-84026-1

# Client Sample ID: GW-2-022019 Date Collected: 02/20/19 14:32 Date Received: 02/21/19 14:45

# Lab Sample ID: 580-84026-14 Matrix: Water

watrix: water

Method: NWTPH-Dx - Northw	est - Semi-V	olatile Pet	roleum Prod	ucts (GO	C)				
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062		mg/L		02/22/19 08:59	02/23/19 01:21	1
Motor Oil (>C24-C36)	ND		0.091		mg/L		02/22/19 08:59	02/23/19 01:21	1
Surrogate	%Recovery	Qualifier	Limits				<b>Prepared</b> 02/22/19 08:59	Analyzed 02/23/19 01:21	Dil Fac

RL

0.065

MDL Unit

mg/L

D

Prepared

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

MB MB

ND

Result Qualifier

Lab Sample ID: MB 580-295001/1-A

Matrix: Water

#2 Diesel (C10-C24)

Analyte

Analysis Batch: 295050

**Client Sample ID: Method Blank** 

02/22/19 08:59 02/22/19 16:40

Analyzed

Prep Type: Total/NA

Prep Batch: 295001

Dil Fac

1

# 6 7 8 9

Motor Oil (>C24-C36)		ND		0.096	;	mg/L		02/2	22/19 08:59	02/22/19 16:40	1
		MB	МВ								
Surrogate	%Recov	very	Qualifier	Limits				P	Prepared	Analyzed	Dil Fac
o-Terphenyl		103		50 - 150	-			02/2	22/19 08:59	02/22/19 16:40	1
Lab Sample ID: LCS 580-2	95001/2-A						Clien	t Sa	mple ID:	Lab Control	Sample
Matrix: Water										Prep Type: T	otal/NA
Analysis Batch: 295050										Prep Batch:	295001
-				Spike	LCS	LCS				%Rec.	
Analyte				Added	Result	Qualifier	Unit	D	%Rec	Limits	
#2 Diesel (C10-C24)				0.500	0.479		mg/L		96	50 - 120	
Motor Oil (>C24-C36)				0.500	0.535		mg/L		107	64 - 120	
	LCS	LCS									
Surrogate	%Recovery	Qual	lifier	Limits							
o-Terphenyl	87			50 - 150							
Lab Sample ID: LCSD 580-	295001/3-A					c	Client Sar	nple	ID: Lab	Control Sam	ole Dup
Matrix: Water								÷.,		Prep Type: T	otal/NA
Analysis Batch: 295050										Bron Batch:	205001

Analysis Batch: 295050							Prep Ba	atch: 295001	
	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)	 0.500	0.472		mg/L		94	50 - 120	2	26
Motor Oil (>C24-C36)	0.500	0.521		mg/L		104	64 - 120	2	24

	LUSD LUSD	
Surrogate	%Recovery Qualifier	Limits
o-Terphenyl	88	50 - 150

Dilution

Factor

1

Batch

Number

Prepared

or Analyzed

295001 02/22/19 08:59 KO

295050 02/22/19 19:56 T1W

Analyst

Lab TAL SEA

TAL SEA

Client Sample ID: S2-AU-021919

Batch

Туре

Prep

Client Sample ID: S2-AD-021919

Analysis

Batch

Method

3510C

NWTPH-Dx

Date Collected: 02/19/19 13:35

Date Received: 02/21/19 14:45

Prep Type

Total/NA

Total/NA

# Lab Sample ID: 580-84026-1 Matrix: Water

# ample ID: 580-84026-3

Client Sam Date Collecte	ple ID: S2- d: 02/19/19 1	AD-021919 3:40					Lab S	Sample ID:	: 580-84026-2 Matrix: Water
Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab	
Total/NA Total/NA	Prep Analysis	3510C NWTPH-Dx		1	295001 295050	02/22/19 08:59 02/22/19 20:39	KO T1W	TAL SEA TAL SEA	
Client Sam Date Collecte Date Receive	ple ID: S2- d: 02/19/19 1 d: 02/21/19 1	BU-021919 3:50 4:45					Lab S	Sample ID:	580-84026-3 Matrix: Water
Γ	Batch	Batch	_	Dilution	Batch	Prepared			
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst		
Total/NA	Analysis	NWTPH-Dx		1	295050	02/22/19 08:59	T1W	TAL SEA	

Run

# Client Sample ID: S2-BD-021919 Date Collected: 02/19/19 13:51 Date Received: 02/21/19 14:45

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			295001	02/22/19 08:59	KO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	295050	02/22/19 21:23	T1W	TAL SEA

# Client Sample ID: WG-WV-021919 Date Collected: 02/19/19 15:14 Date Received: 02/21/19 14:45

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C		· ·	295001	02/22/19 08:59	КО	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	295050	02/22/19 21:44	T1W	TAL SEA

# Client Sample ID: WG-EV-021919 Date Collected: 02/19/19 15:05 Date Received: 02/21/19 14:45

_	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			295001	02/22/19 08:59	КО	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	295050	02/22/19 22:06	T1W	TAL SEA

**TestAmerica Seattle** 

# Lab Sample ID: 580-84026-4 Matrix: Water

Lab Sample ID: 580-84026-5 Matrix: Water

Lab Sample ID: 580-84026-6

Matrix: Water

Dilution

Factor

1

Run

Run

Client Sample ID: FWG-EV-021919

Batch

Type

Prep

Analysis

Client Sample ID: FWG-WV-021919

Batch

Туре

Prep

Analysis

Batch

Method

NWTPH-Dx

3510C

Batch

Method

NWTPH-Dx

3510C

Date Collected: 02/19/19 15:50

Date Received: 02/21/19 14:45

Date Collected: 02/19/19 15:55

Date Received: 02/21/19 14:45

Prep Type

Total/NA

Total/NA

Prep Type

Total/NA

Total/NA

Lab Sample ID: 580-84026-7

Lab Sample ID: 580-84026-9

Lab Sample ID: 580-84026-10

Lab Sample ID: 580-84026-11

Lab Sample ID: 580-84026-12

Lab TAL SEA

TAL SEA

Lab	Sample ID: 580-84026-8	
100	TAL SEA	

Matrix: Water

Matrix: Water

Matrix: Water

Matrix: Water

Matrix: Water

Matrix: Water

Dilution	Batch	Prepared		
Factor	Number	or Analyzed	Analyst	Lab
	295001	02/22/19 08:59	КО	TAL SEA
1	295050	02/22/19 22:49	T1W	TAL SEA

Prepared

295001 02/22/19 08:59 KO

295050 02/22/19 22:28 T1W

or Analyzed Analyst

# Client Sample ID: PZ-7S-022019 Date Collected: 02/20/19 10:07 Date Received: 02/21/19 14:45

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			295001	02/22/19 08:59	КО	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	295050	02/22/19 23:11	T1W	TAL SEA

# Client Sample ID: PZ-8-022019 Date Collected: 02/20/19 10:59 Date Received: 02/21/19 14:45

	Batch	Batch		Dilution	Batch	Prepared	A	1
Prep Type	гуре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			295001	02/22/19 08:59	КО	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	295050	02/22/19 23:32	T1W	TAL SEA

# Client Sample ID: EW-1-022019 Date Collected: 02/20/19 11:39

Date Received: 02/21/19 14:45

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			295001	02/22/19 08:59	КО	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	295050	02/22/19 23:54	T1W	TAL SEA

# Client Sample ID: 5-W-43-022019 Date Collected: 02/20/19 12:21 Date Received: 02/21/19 14:45

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			295001	02/22/19 08:59	KO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	295050	02/23/19 00:37	T1W	TAL SEA

**TestAmerica Seattle** 

Batch

Number

Dilution

Dilution

Factor

1

Factor

1

Run

Run

Batch

Number

295001

Batch

Number

295001

295050

Prepared

or Analyzed

02/22/19 08:59

Prepared

or Analyzed

02/22/19 08:59

02/23/19 01:21 T1W

295050 02/23/19 00:59 T1W

Analyst

Analyst

KO

KO

Lab

Lab

TAL SEA

TAL SEA

TAL SEA

TAL SEA

Client Sample ID: GW-1-022019

Batch

Туре

Prep

Client Sample ID: GW-2-022019

Batch

Туре

Prep

Analysis

Date Collected: 02/20/19 14:32

Date Received: 02/21/19 14:45

Analysis

Batch

3510C

Batch

Method

NWTPH-Dx

3510C

Method

NWTPH-Dx

Date Collected: 02/20/19 13:06

Date Received: 02/21/19 14:45

Prep Type

Total/NA

Total/NA

Prep Type

Total/NA

Total/NA

Lab Sample ID: 580-84026-13

Lab Sample ID: 580-84026-14

Matrix: Water

Matrix: Water

# 7

## Laboratory References:

TAL SEA = TestAmerica Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

# Laboratory: TestAmerica Seattle

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Washington Ctata Dragrom 10 CEE2 02 17 20	Authority	Program		EPA Region	Identification N	lumber	Expiration Date
wasnington State Program 10 C553 02-17-20	Washington	State Progra	m	10	C553		02-17-20
The following analytes are included in this report, but the laboratory is not cartified by the governing authority. This list may include analy	The following analytes are	included in this report.	but the laborator	is not cortified by th	o governing outbo	rity Thie	list may include anal
The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analy	The following analytes are	included in this report, I	but the laborator	/ is not certified by th	e governing autho	rity. This	list may include anal
The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analy the agency does not offer certification.	The following analytes are the agency does not offer	included in this report, I certification.	but the laborator	is not certified by th	e governing autho	rity. This	list may include anal

**Client Sample ID** 

S2-AU-021919

S2-AD-021919

S2-BU-021919

S2-BD-021919

WG-WV-021919

WG-EV-021919

FWG-EV-021919 FWG-WV-021919

PZ-7S-022019

PZ-8-022019

EW-1-022019

5-W-43-022019

GW-1-022019

GW-2-022019

Lab Sample ID

580-84026-1

580-84026-2

580-84026-3

580-84026-4

580-84026-5

580-84026-6

580-84026-7

580-84026-8 580-84026-9

580-84026-10

580-84026-11

580-84026-12

580-84026-13

580-84026-14

TestAmerica Job ID: 580-84026-1

Matrix	Collected	Received	
Water	02/19/19 13:35	02/21/19 14:45	
Water	02/19/19 13:40	02/21/19 14:45	
Water	02/19/19 13:50	02/21/19 14:45	E
Water	02/19/19 13:51	02/21/19 14:45	J
Water	02/19/19 15:14	02/21/19 14:45	
Water	02/19/19 15:05	02/21/19 14:45	
Water	02/19/19 15:50	02/21/19 14:45	
Water	02/19/19 15:55	02/21/19 14:45	
Water	02/20/19 10:07	02/21/19 14:45	
Water	02/20/19 10:59	02/21/19 14:45	8
Water	02/20/19 11:39	02/21/19 14:45	_
Water	02/20/19 12:21	02/21/19 14:45	9
Water	02/20/19 13:06	02/21/19 14:45	
Water	02/20/19 14:32	02/21/19 14:45	

					RODA		FORMA				<u></u>
BASE	Laboratory:				ABUKA		FURMA	Project Mana	ager:	······	SHIPMENT INFORMATION
	Address							Phone:			Shipment Method:
	City/State/ZIP:							Fax:			Tracking Number:
BNSE PROJECT INFORMATION	Project State of	Origin: 111 k	-		Γ			ONSULTAN		RMATION	Project Number: 6.83-0(7
BNSF Project Number: C2 - N/7	Project City:	Skikow	ela.		Compan	۲.	- 11.	. /	. 6311	<u>L'a</u>	Project Manager: Ala Lin Ann
BNSE Project Name: 0 A R = 01 A		rycom			Address:	ra	Vano -th	n Lisv	<u>nsm</u>	n ing	Email: 21 Construction
BNSF Contact:	BNSF Work Ore	der No.:			City/State	91) e/ZIP· +z	5	AVEN	NW	2000	Phone: Fax: Fax:
			ſ	] Other De	L		ngu	T W	(A 9	METHODS FOR AN	425-574-4746
			L.		arverable	a r					
1-day Rush	E BNSF St	andard (Level II)	F		-	-					
2-day Rush Standard 10-Day			L	_ EDD Red	ą, Format	?					
X 3-day Rush Other	Level IV							<u>â</u>			
S	AMPLE INFORM						1	E			580-84026 Chain of Custody
Sample Identification	Containers	Samp	le Collection		Filtered	Type (Comp/	Matrix	Ę			
·		Date	Time	Sampler	T/IN	Grab)		Ź			COMMENTS LAB USE
52-AU-021919	2	2/19/19	1335	CiPho	N		Water	×			Therm. ID: IRS Cor: 1.8 . Unc: 1.8
52- AD-021919	j	1	1340	CAAB	1		1	X			Cooler Dsc: $\underline{L_{\mathcal{G}}} \xrightarrow{\mathcal{B}} \underline{L_{\mathcal{G}}} \xrightarrow{\mathcal{B}} \underline{L_{\mathcal{G}}}$
52- BU-021919			1350	١				X			Cust Scale Vac of No. UPS:
52 - BD - 021919			135(					X			Blue Ice, Wet, Dry, None Cotton: X
WG-WV-021919			1514					X			
WG-EV-021919			1505					X			Therm. ID: <u>AZ</u> Cor: <u>0, 1</u> Unc: 0.3
EW 19 - EV - 021919			1550			1	11	X			Cooler Dsc: <u>Lg bruch</u> Packing FedEx:
FWG-WV-021919		1	1955		1			X			Cust. Seal: Yes X No
P7-75-022019		apola	1007	60				X			Blue Ice, Vot, Dry, None Lab Cour:
P7 - 8 -022019		<u>v</u> ∤- p.C. i	1050	60			11-	X			
EWI-1-02-2019			1139	60		[		X			Therm. ID: $\underline{I25}_{Cor:}$ $\underline{I.2}_{\circ}$ Unc: $\underline{I.2}_{\circ}$
E-W-43-022019			1221	60				×			Packing: FedEx:
614-1-012019			1306	60		<u> </u>	+	X			Cust. Seal: Yes X No Lab Court. X
6 2 2 - 022019		1	1.0222	GP							Blue Ice, Dry, None Other:
14 OW-2-ULWIT			1970			<b> </b>					
15 Relinquished By:	Date/Time:	12 aliana	Received By:		أكر		Ł	L	Da	ite/Time:	Comments and Special Analytical Requirements:
Relinquished By:	Date/Time:	120/1994/20	Received By:	١٥٧	د نې ۳	ium	- {}		Da	<u> ~1~1/12 1445</u> de/Time:	2 > DAY triverwould time
Relinquished By:	Date/Time:		Received By:		_ · · · · ·				Da	ite/Time:	- 3- 979 1000000
Received by Laboratory:	Date/Time:		Lab Remarks:						La	b: Custody Intact?	Custody Seal No. BNSF COC No
	1									Yes No	

ORIGINAL - RETURN TO LABORATORY WITH SAMPLES

1

2

3

4

5

10

atom month

# Client: Farallon Consulting LLC

# Login Number: 84026 List Number: 1 Creator: Blankinship, Tom X

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	True	seals present.
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	sampling time on sample -14.
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Job Number: 580-84026-1

List Source: TestAmerica Seattle



# **ANALYTICAL REPORT**

# TestAmerica Laboratories, Inc.

TestAmerica Seattle 5755 8th Street East Tacoma, WA 98424 Tel: (253)922-2310

# TestAmerica Job ID: 580-84844-1 Client Project/Site: BNSF Skykomish Monthly

# For:

Farallon Consulting LLC 975 5th Avenue NW Suite 100 Issaquah, Washington 98027

Attn: Peter Kingston

instère D. allen

Authorized for release by: 3/28/2019 12:14:32 PM

Kristine Allen, Manager of Project Management (253)248-4970 kristine.allen@testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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The

Expert

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Definitions	4
Client Sample Results	5
QC Sample Results	19
Chronicle	21
Certification Summary	24
Sample Summary	25
Chain of Custody	26
Receipt Checklists	27

# Job ID: 580-84844-1

# Laboratory: TestAmerica Seattle

Narrative

Job Narrative 580-84844-1

# Comments

No additional comments.

# Receipt

The samples were received on 3/22/2019 2:53 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 11 coolers at receipt time were 0.3° C, 0.6° C, 1.0° C, 1.0° C, 1.4° C, 1.4° C, 1.5° C, 1.5° C, 2.0° C, 2.6° C and 2.9° C.

# GC Semi VOA

Method(s) NWTPH-Dx: The following samples contained a hydrocarbon pattern in the diesel range; however, the elution pattern was later than the typical diesel fuel pattern used by the laboratory for quantitative purposes: WG-WV-031919 (580-84844-5), S2-BU-031919 (580-84844-6) and WG-EV-031919 (580-84844-12).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

# **Organic Prep**

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

# Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.	4
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis	
%R	Percent Recovery	5
CFL	Contains Free Liquid	J
CNF	Contains No Free Liquid	
DER	Duplicate Error Ratio (normalized absolute difference)	
Dil Fac	Dilution Factor	
DL	Detection Limit (DoD/DOE)	
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample	
DLC	Decision Level Concentration (Radiochemistry)	8
EDL	Estimated Detection Limit (Dioxin)	
LOD	Limit of Detection (DoD/DOE)	9
LOQ	Limit of Quantitation (DoD/DOE)	
MDA	Minimum Detectable Activity (Radiochemistry)	
MDC	Minimum Detectable Concentration (Radiochemistry)	
MDL	Method Detection Limit	
ML	Minimum Level (Dioxin)	
NC	Not Calculated	
ND	Not Detected at the reporting limit (or MDL or EDL if shown)	
PQL	Practical Quantitation Limit	
QC	Quality Control	
RER	Relative Error Ratio (Radiochemistry)	
RL	Reporting Limit or Requested Limit (Radiochemistry)	
RPD	Relative Percent Difference, a measure of the relative difference between two points	
TEF	Toxicity Equivalent Factor (Dioxin)	

TEQ Toxicity Equivalent Quotient (Dioxin)

# Client Sample ID: 5-W-43-031919

Date Collected: 03/19/19 17:07 Date Received: 03/25/19 14:53

# Lab Sample ID: 580-84844-1

Matrix: Water

Method: NWTPH-Dx - Northy Analyte	vest - Semi-Volatile Result	Petroleum Qualifier	Products (GC) RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062	0.062	mg/L		03/26/19 10:36	03/26/19 20:05	1
Motor Oil (>C24-C36)	ND		0.092	0.092	mg/L		03/26/19 10:36	03/26/19 20:05	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	97		50 - 150				03/26/19 10:36	03/26/19 20:05	1

# Client Sample ID: EW-1-031919

Date Collected: 03/19/19 16:36 Date Received: 03/25/19 14:53

# Lab Sample ID: 580-84844-2 Matrix: Water

Method: NWTPH-Dx - Northy	vest - Semi-Volatile Result	Petroleum	Products (GC)	МП	Unit	п	Propared	Analyzed	Dil Eac
		Quanner							
#2 Diesei (C10-C24)	ND		0.062	0.062	mg/L		03/26/19 10:36	03/26/19 20:25	1
Motor Oil (>C24-C36)	ND		0.092	0.092	mg/L		03/26/19 10:36	03/26/19 20:25	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	100		50 - 150				03/26/19 10:36	03/26/19 20:25	1

5

# Client Sample ID: PZ-8-031919

Date Collected: 03/19/19 15:45 Date Received: 03/25/19 14:53

# Lab Sample ID: 580-84844-3 Matrix: Water

5

Method: NWTPH-Dx - Northw	vest - Semi-Volatile	Petroleum	Products (GC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.063	0.063	mg/L		03/26/19 10:36	03/26/19 20:46	1
Motor Oil (>C24-C36)	ND		0.092	0.092	mg/L		03/26/19 10:36	03/26/19 20:46	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	89		50 - 150				03/26/19 10:36	03/26/19 20:46	1

Lab Sample ID: 580-84844-4

Matrix: Water

5

# Client Sample ID: FGW-WV-031919

Date Collected: 03/19/19 15:00 Date Received: 03/25/19 14:53

 Method: NWTPH-Dx - Northwest - S	Semi-Volatile	Petroleum	Products (GC)	1					
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062	0.062	mg/L		03/26/19 10:36	03/26/19 21:06	1
Motor Oil (>C24-C36)	ND		0.092	0.092	mg/L		03/26/19 10:36	03/26/19 21:06	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	103		50 - 150				03/26/19 10:36	03/26/19 21:06	1

Surrogate

o-Terphenyl

Analyzed

03/26/19 21:26

Prepared

03/26/19 10:36

5

Dil Fac

1

### Client Sample ID: WG-WV-031919 Lab Sample ID: 580-84844-5 Date Collected: 03/19/19 14:20 Matrix: Water Date Received: 03/25/19 14:53 Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC) Dil Fac Analyte Result Qualifier MDL Unit D RL Prepared Analyzed #2 Diesel (C10-C24) 0.19 0.062 0.062 mg/L 03/26/19 10:36 03/26/19 21:26 1 03/26/19 10:36 03/26/19 21:26 0.091 0.091 mg/L Motor Oil (>C24-C36) 0.13 1

Limits

50 - 150

%Recovery Qualifier

92

# Client Sample ID: S2-BU-031919

Date Collected: 03/19/19 11:55 Date Received: 03/25/19 14:53

# Lab Sample ID: 580-84844-6

Matrix: Water

5

Method: NWTPH-Dx - North	west - Semi-Volatile	Petroleum	Products (GC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.25		0.062	0.062	mg/L		03/26/19 10:36	03/26/19 21:46	1
Motor Oil (>C24-C36)	0.12		0.091	0.091	mg/L		03/26/19 10:36	03/26/19 21:46	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	84		50 - 150				03/26/19 10:36	03/26/19 21:46	1

# Client Sample ID: S2-AD-031919

Date Collected: 03/19/19 11:40 Date Received: 03/25/19 14:53

# Lab Sample ID: 580-84844-7

Matrix: Water

Method: NWTPH-Dx - North	nwest - Semi-Volatile	Petroleum	Products (GC)	)					
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.063	0.063	mg/L		03/27/19 07:11	03/27/19 18:23	1
Motor Oil (>C24-C36)	ND		0.093	0.093	mg/L		03/27/19 07:11	03/27/19 18:23	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	88		50 - 150				03/27/19 07:11	03/27/19 18:23	1

# Client Sample ID: S2-AU-031919

Date Collected: 03/19/19 11:18 Date Received: 03/25/19 14:53

# Lab Sample ID: 580-84844-8 Matrix: Water

Method: NWTPH-Dx - North	west - Semi-Volatile	Petroleum	Products (GC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062	0.062	mg/L		03/26/19 10:36	03/26/19 22:46	1
Motor Oil (>C24-C36)	ND		0.092	0.092	mg/L		03/26/19 10:36	03/26/19 22:46	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	97		50 - 150				03/26/19 10:36	03/26/19 22:46	1

5
#### Client Sample ID: GW-1-031919

Date Collected: 03/19/19 17:20 Date Received: 03/25/19 14:53

#### Lab Sample ID: 580-84844-9 Matrix: Water

Method: NWTPH-Dx - North	west - Semi-Volatile	Petroleum	Products (GC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062	0.062	mg/L		03/26/19 10:36	03/26/19 23:06	1
Motor Oil (>C24-C36)	ND		0.091	0.091	mg/L		03/26/19 10:36	03/26/19 23:06	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	99		50 - 150				03/26/19 10:36	03/26/19 23:06	1

5

#### Client Sample ID: PZ-75-031919

Date Collected: 03/19/19 16:11 Date Received: 03/25/19 14:53

#### Lab Sample ID: 580-84844-10 Matrix: Water

Method: NWTPH-Dx - North	west - Semi-Volatile	Petroleum	Products (GC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062	0.062	mg/L		03/26/19 10:36	03/26/19 23:26	1
Motor Oil (>C24-C36)	ND		0.091	0.091	mg/L		03/26/19 10:36	03/26/19 23:26	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	93		50 - 150				03/26/19 10:36	03/26/19 23:26	1

#### Client Sample ID: FWG-EV-031919

Date Collected: 03/19/19 14:38 Date Received: 03/25/19 14:53

## Lab Sample ID: 580-84844-11

Matrix: Water

Method: NWTPH-Dx - North	west - Semi-Volatile	e Petroleum	Products (GC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062	0.062	mg/L		03/26/19 10:36	03/26/19 23:47	1
Motor Oil (>C24-C36)	ND		0.091	0.091	mg/L		03/26/19 10:36	03/26/19 23:47	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	100		50 - 150				03/26/19 10:36	03/26/19 23:47	1

#### Client Sample ID: WG-EV-031919 Lab Sample ID: 580-84844-12 Date Collected: 03/19/19 14:25 Date Received: 03/25/19 14:53 Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC) Analyte Result Qualifier MDL Unit D Dil Fac RL Prepared Analyzed 0.062 #2 Diesel (C10-C24) 0.52 0.062 mg/L 03/26/19 10:36 03/27/19 00:07

Motor Oil (>C24-C36)	0.28	0.092	0.092 mg/L	03/26/19 10:36	03/27/19 00:07	1
Surrogate o-Terphenyl		Limits		<b>Prepared</b> 03/26/19 10:36	Analyzed 03/27/19 00:07	Dil Fac

Matrix: Water

5

1

#### Client Sample ID: S2-BD-031919

Date Collected: 03/19/19 12:18 Date Received: 03/25/19 14:53

#### Lab Sample ID: 580-84844-13 Matrix: Water

5

Method: NWTPH-Dx - Northw	est - Semi-Volatile	Petroleum	Products (GC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062	0.062	mg/L		03/26/19 10:36	03/27/19 00:27	1
Motor Oil (>C24-C36)	ND		0.091	0.091	mg/L		03/26/19 10:36	03/27/19 00:27	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	95		50 - 150				03/26/19 10:36	03/27/19 00:27	1

#### Client Sample ID: GW-2-031919

Date Collected: 03/19/19 17:54 Date Received: 03/25/19 14:53

#### Lab Sample ID: 580-84844-14 Matrix: Water

Matrix: Water

5

Method: NWTPH-Dx - Northy	vest - Semi-Volatile	Petroleum	Products (GC)	)					
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062	0.062	mg/L		03/26/19 10:36	03/27/19 00:47	1
Motor Oil (>C24-C36)	0.11		0.091	0.091	mg/L		03/26/19 10:36	03/27/19 00:47	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	107		50 - 150				03/26/19 10:36	03/27/19 00:47	1

**Client Sample ID: Method Blank** 

# 5

6

1	Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)
ſ	_ Lab Sample ID: MB 580-297119/1-A
	Matrix: Water

Matrix: Water										Prep T	ype: To	tal/NA
Analysis Batch: 297203										Prep E	Batch: 2	97119
	ME	B MB										
Analyte	Resul	t Qualifier	RL		MDL	Unit		DI	Prepared	Analyz	ed	Dil Fac
#2 Diesel (C10-C24)	NE	)	0.065	(	0.065	mg/L		03/	26/19 10:36	03/26/19	9:05	1
Motor Oil (>C24-C36)	NE	)	0.096	(	0.096	mg/L		03/	26/19 10:36	03/26/19	9:05	1
	МЕ	B MB										
Surrogate	%Recovery	/ Qualifier	Limits					1	Prepared	Analyz	ed	Dil Fac
o-Terphenyl	100	5	50 - 150					03/	26/19 10:36	03/26/19	19:05	1
Lab Sample ID: LCS 580-297	119/2-A							Clien	t Sample	ID: Lab Co	ontrol S	ample
Matrix: Water										Prep T	vpe: To	tal/NA
Analysis Batch: 297203										Prep E	atch: 2	97119
			Spike	LCS	LCS					%Rec.		
Analyte			Added	Result	Qua	lifier	Unit	D	%Rec	Limits		
#2 Diesel (C10-C24)			0.500	0.425			mg/L		85	50 - 120		
Motor Oil (>C24-C36)			0.500	0.468			mg/L		94	64 _ 120		
	LCS LC	s										
Surrogate	%Recovery Qu	alifier	Limits									
o-Terphenyl	91		50 - 150									
- Lab Sample ID: LCSD 580-29	97119/3-A						Cli	ent Sar	nple ID: L	_ab Contro	I Sampl	e Dup
Matrix: Water									•	Prep T	vpe: To	tal/NA
Analysis Batch: 297203										Prep E	atch: 2	97119
			Spike	LCSD	LCS	D				%Rec.		RPD
Analyte			Added	Result	Qua	lifier	Unit	D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)			0.500	0.396			mg/L		79	50 - 120	7	26
Motor Oil (>C24-C36)			0.500	0.463			mg/L		93	64 - 120	1	24
	LCSD LC	SD										
Surrogate	%Recovery Qu	alifier	Limits									
o-Terphenyl	82		50 - 150									

**QC Sample Results** 

Lab Sample ID: MB 580-297217/1	- <b>A</b>						Client Sa	mple ID: Metho	d Blank
Matrix: Water								Prep Type: I	otal/NA
Analysis Batch: 297262								Prep Batch:	297217
	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.065	0.065	mg/L		03/27/19 07:11	03/27/19 17:16	1
Motor Oil (>C24-C36)	ND		0.096	0.096	mg/L		03/27/19 07:11	03/27/19 17:16	1
	МВ	МВ							
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	103		50 - 150				03/27/19 07:11	03/27/19 17:16	1
- Lab Sample ID: LCS 580-297217/2	2-A					c	lient Sample I	D: Lab Control	Sample
Matrix: Water								Prep Type: T	otal/NA

#### Analysis Batch: 297262 Prep Batch: 297217 Spike LCS LCS %Rec. Added Result Qualifier Analyte Unit D %Rec Limits #2 Diesel (C10-C24) 0.500 0.410 mg/L 82 50 - 120 Motor Oil (>C24-C36) 0.500 0.520 mg/L 104 64 - 120

#### Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: LCS 580-2972 Matrix: Water Analysis Batch: 297262	17/2-A						Client	Sample	ID: Lab Co Prep T Prep I	ontrol Sa ype: To Batch: 2	ample tal/NA 97217
	LCS	LCS									
Surrogate	%Recovery	Qualifier	Limits								
o-Terphenyl	94		50 _ 150								
Lab Sample ID: LCSD 580-297 Matrix: Water Analysis Batch: 297262 Analyte	217/3-A		Spike Added	LCSD Result	LCSD Qualifier	Clie	ent Sam	%Rec	Lab Contro Prep T Prep I %Rec. Limits	Vype: To Batch: 2 RPD	e Dup tal/NA 97217 RPD Limit
#2 Diesel (C10-C24)			0.500	0.458		mg/L		92	50 - 120	11	26
Motor Oil (>C24-C36)			0.500	0.530		mg/L		106	64 _ 120	2	24
Surrogate o-Terphenyl	LCSD %Recovery 93	LCSD Qualifier	Limits								

Dilution

Factor

Dilution

Factor

Dilution

Factor

1

1

1

Run

Run

Run

Batch

Number

297119

297203

Batch

Number

297119

297203

Batch

Number

297119

297203

03/26/

03/26/

03/26/

03/26/

03/26/

03/26/

Client Sample ID: 5-W-43-031919

Batch

Туре

Prep

Client Sample ID: EW-1-031919 Date Collected: 03/19/19 16:36 Date Received: 03/25/19 14:53

Client Sample ID: PZ-8-031919 Date Collected: 03/19/19 15:45 Date Received: 03/25/19 14:53

Analysis

Batch

Туре

Prep

Analysis

Batch

Туре

Prep

Analysis

Batch

Method

3510C

Batch

Method

3510C

Batch

Method

3510C

NWTPH-Dx

NWTPH-Dx

NWTPH-Dx

Date Collected: 03/19/19 17:07 Date Received: 03/25/19 14:53

Prep Type

Total/NA

Total/NA

Prep Type

Total/NA

Total/NA

Prep Type

Total/NA

Total/NA

	b ID: 580-84844-1	estAmerica Jo	Т	
	D: 580-84844-1	ab Sample	La	
	Matrix: Water			
5				Prepared
		Lab	Analyst	or Analyzed
		TAL SEA	КО	3/26/19 10:36
0		TAL SEA	JCM	)3/26/19 20:05
7				
	D: 580-84844-2	ab Sample	La	
8	Matrix: Water			
9				Prepared
		Lab	Analyst	or Analyzed
		TAL SEA	KO	3/26/19 10:36
		TAL SEA	JCM	)3/26/19 20:25
	D: 580-84844-3 Matrix: Water	ab Sample	La	
				Prepared
		Lab	Analyst	or Analyzed
		TAL SEA	KO	3/26/19 10:36
		TAL SEA	JCM	)3/26/19 20:46
	D: 580-84844-4	ab Sample	La	
	Matrix: Water	-		
				Prepared
		Lab	Analyst	or Analyzed
		TAL SEA	КО	3/26/19 10:36
		TAL SEA	JCM	03/26/19 21:06
	D: 580-84844-5 Matrix: Water	ab Sample	La	

## Client Sample ID: FGW-WV-031919

Date Collected:	03/19/19	15:00
Date Received:	03/25/19	14:53

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			297119	03/26/19 10:36	КО	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	297203	03/26/19 21:06	JCM	TAL SEA

#### Client Sample ID: WG-WV-031919 Date Collected: 03/19/19 14:20

Date Received: 03/25/19 14:53

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			297119	03/26/19 10:36	КО	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	297203	03/26/19 21:26	JCM	TAL SEA

#### Client Sample ID: S2-BU-031919 Date Collected: 03/19/19 11:55

Date Received: 03/25/19 14:53

_	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			297119	03/26/19 10:36	KO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	297203	03/26/19 21:46	JCM	TAL SEA

**TestAmerica Seattle** 

Lab Sample ID: 580-84844-6

Matrix: Water

				Lab Chro	nicle				
Client: Farallon Project/Site: BN	Consulting LLC	C Monthly					Т	estAmerica Jo	b ID: 580-84844-1
Client Samp	le ID: S2-AD	-031919					La	ab Sample	D: 580-84844-7
Date Collected: Date Received:	: 03/19/19 11:4 : 03/25/19 14:5	3							Matrix: water
	Batch	Batch		Dilution	Batch	Propared			
Prep Type		Method	Run	Factor	Number	or Analyzed	Analyst	Lab	
Total/NA	Prep	3510C			297217	03/27/19 07:11	KO	TAL SEA	
Total/NA	Analysis	NWTPH-Dx		1	297262	03/27/19 18:23	W1T	TAL SEA	
Client Comp		024040						h Complet	D. 500 04044 0
Client Samp		-031919					Lē	ab Sample	D: 560-64644-6
Date Collected: Date Received:	: 03/19/19 11:1 : 03/25/19 14:5	8 3							Matrix: Water
	Batch	Batch		Dilution	Batch	Prepared			
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab	
Total/NA	Prep	3510C			297119	03/26/19 10:36	KO	TAL SEA	
Total/NA	Analysis	NWTPH-Dx		1	297203	03/26/19 22:46	JCM	TAL SEA	
Client Samp		021010					1.4	ah Sampla I	D: 580 84844 9
Data Collected	10 1D: GVV-1-	031919					Li	ab Sample	D: 300-04044-9 Matrix: Wator
Date Received:	03/25/19 14:5	3							
	Batch	Batch		Dilution	Batch	Prepared			
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab	
Total/NA	Prep	3510C			297119	03/26/19 10:36	КО	TAL SEA	
Total/NA	Analysis	NWTPH-Dx		1	297203	03/26/19 23:06	JCM	TAL SEA	
Client Samp	le ID: PZ-75	-031919					Lal	o Sample IE	): 580-84844-10
Date Collected	: 03/19/19 16:1	1							Matrix: Water
	03/23/19 14.5	3							
	Batch	Batch		Dilution	Batch	Prepared			
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab	
Total/NA	Prep	3510C			297119	03/26/19 10:36	KO	TAL SEA	
I otal/NA	Analysis	NWIPH-DX		1	297203	03/26/19 23:26	JCM	TAL SEA	
Client Samp	le ID: FWG-I	EV-031919					Lal	o Sample IE	): 580-84844-11
Date Collected	: 03/19/19 14:3 03/25/19 14:5	8 3							Matrix: Water
<b>.</b> -	Batch –	Batch	_	Dilution	Batch	Prepared			
	Type		Run	Factor	Number	or Analyzed	Analyst		
	Prep			1	29/119	03/26/19 10:36		TAL SEA	
	Analysis	ΙΝΨΕΓΠ-ΟΧ		I	297203	03120119 23.41	JUIVI	IAL SEA	
Client Samp	le ID: WG-E	V-031919					Lal	o Sample IE	): 580-84844-12
Date Collected	: 03/19/19 14:2	5							Matrix: Water
Date Received:	03/25/19 14:5	3							
Γ	Batch	Batch		Dilution	Batch	Prepared			
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab	
Total/NA	Prep	3510C			297119	03/26/19 10:36	KO	TAL SEA	
Total/NA	Analysis	NWTPH-Dx		1	297203	03/27/19 00:07	JCM	TAL SEA	

Lab Sample ID: 580-84844-13

## 2 3 4 5 6 7 8 9 10 11

#### Client Sample ID: S2-BD-031919

Date Collected Date Received	l: 03/19/19 12:1 : 03/25/19 14:5	8 3							Matrix: Water
	Batch	Batch		Dilution	Batch	Prepared			
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab	
Total/NA	Prep	3510C			297119	03/26/19 10:36	KO	TAL SEA	
Total/NA	Analysis	NWTPH-Dx		1	297203	03/27/19 00:27	JCM	TAL SEA	
Client Samp	le ID: GW-2-	031919					La	b Sample ID	: 580-84844-14
Date Collected	I: 03/19/19 17:5	4							Matrix: Water
Date Received	: 03/25/19 14:5	3							

	Batch	Batch		Dilution	Batch	Prepared		
Ргер Туре	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C	·		297119	03/26/19 10:36	KO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	297203	03/27/19 00:47	JCM	TAL SEA

#### Laboratory References:

TAL SEA = TestAmerica Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

### Accreditation/Certification Summary

Client: Farallon Consulting LLC Project/Site: BNSF Skykomish Monthly TestAmerica Job ID: 580-84844-1

#### Laboratory: TestAmerica Seattle

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska (UST)	State Program	10	17-024	01-19-20
ANAB	DoD / DOE		L2236	01-19-22
ANAB	ISO/IEC 17025		L2236	01-19-22
California	State Program	9	2901	11-05-19
Montana (UST)	State Program	8	N/A	04-30-20
Nevada	State Program	9	WA000502019-1	07-31-19
Oregon	NELAP	10	WA100007	11-05-19
US Fish & Wildlife	Federal		LE058448-0	07-31-19
USDA	Federal		P330-14-00126	02-10-20
Washington	State Program	10	C553	02-17-20

#### **Sample Summary**

Matrix

Water

#### Client: Farallon Consulting LLC Project/Site: BNSF Skykomish Monthly

**Client Sample ID** 

5-W-43-031919

EW-1-031919

PZ-8-031919

FGW-WV-031919

WG-WV-031919

S2-BU-031919

S2-AD-031919

S2-AU-031919

GW-1-031919

PZ-75-031919

FWG-EV-031919

WG-EV-031919

S2-BD-031919

GW-2-031919

Lab Sample ID

580-84844-1

580-84844-2

580-84844-3

580-84844-4

580-84844-5

580-84844-6

580-84844-7

580-84844-8

580-84844-9

580-84844-10

580-84844-11

580-84844-12

580-84844-13

580-84844-14

TestAmerica Job ID: 580-84844-1

Collected

03/19/19 17:07

03/19/19 16:36

03/19/19 15:45

03/19/19 15:00

03/19/19 14:20

03/19/19 11:55

03/19/19 11:40

03/19/19 11:18

03/19/19 17:20

03/19/19 16:11

03/19/19 14:38

03/19/19 14:25

03/19/19 12:18

03/19/19 17:54

9

Received
03/25/19 14:53
03/25/19 14:53
03/25/19 14:53
03/25/19 14:53
03/25/10 14:53
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				LA	BORAT	ORY IN	FORMA	ION				LAB WORK OR	DER: KAVAN	101 8
BNSF	Laboratory:	Laboratory: Project Manager:					ger:	SHIPMENT INFORMATION				ION		
RAILWAY	Address:							Phone:				Shipment Metho	d:	
CHAIN OF CUSTODY	City/State/ZIP. Fax.							Tracking Numbe	r:					
BNSF PROJECT INFORMATION	Project State of	Origin:					C	ONSULTAN	IT INFORMATI	ON		Project Number:	683-067	
3F Project Number: 683-067	Project City:				Company	Fa	valer	n Con	sulting			Project Manager:	Peter kings	kn
JE Project Name: BNSE - Skykomish	Mont	teley			Address:	97.	5 51	4 AVE	NW			Email: pkiny	ston Stavailon is	insulty can
3F Contact:	BNSF Work Ord	ler No.:			City/State	/ZIP:	ssage	with ,	NA			Phone:	Fax:	
TURNAROUND TIME	D	ELIVERABLES	[] OI	her Del	iverables	?	V		METH	IODS FOR A	NALYSIS			
1-day Rush 5- to 8-day Rush	BNSF St	andard (Level II)									1			
2-day Rush Standard 10-Day	Level III		EC	DD Reg.	, Format'	?								
3-day Rush Other	_ Level IV			*****				Á						
SF		TION						H-						
		Samp	ble Collection		Eiltorod	Type								
Sample Identification	Containers	Date	Time Sa	ampler	Y/N	(Comp Grab)	/ Matrix	N					COMMENTS	LADUCE
5-W-43-031919	2	3/19/19	1707 0	В	N	6	Water	x					COMMENTS	LAD USE
EW-1-03/9/9	1	1	1636 C	B	۱	1	1	X						
PZ-8-031919			1545 C	B	1			X'						
FGW-WV-031919			1500 C	B				K						
WG-WV-031919			1420 C	B				X					······································	
52-BU-031919			1155 C	B				R						
52-AB-031919			1140 C	B	1		1	X						
52 - 40 -031919			1118 0	33				X						
GW-1-03/9/9			1720 6	ρ				X						
PZ-75-031919			1611 6	SP				x			·			1
FWG-EV-031919			1438 6	Sp	1			X						
WG-EV-031919			1425 6	P				X						
52-BD-02/9/9			1214 6	ρ	1	$\neg$		X						
GW-2- 03/9/9	1	ل <i>ــ</i>	1754 6	2	1	1		X				580-8484	4 Chain of Custody	
				·										
iquished By:	Date/Time:	122/19	Received By:	Inc	r P	21	L.T	1.1	Date/Jipre	22/19 0	1 Comme	nts and Specia	Analytical Requirements	:
iquished BC. The De La	Date/Time:	0/134	Received By:	Jan A	Ã	S.	nt	un	Date/Time:	40 14 5	(*)			
iquished By:	Date Time:	1145	Received By:		ŧĈ	<u> </u>			Date/Time:	H	-			
aived by Laboratory:	Date/Time:		Lab Remarks:						Lab: Custod	iy Intact?	Custody S	eal No.	BNSF COC No	

**ORIGINAL - RETURN TO LABORATORY WITH SAMPLES** 

Page 26 of 27

TAL-1001 (0912)

3/28/2019

#### Client: Farallon Consulting LLC

#### Login Number: 84844

List Number: 1 Creator: Luna, Francisco J

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Job Number: 580-84844-1

List Source: TestAmerica Seattle

# 🛟 eurofins

## Environment Testing TestAmerica

## **ANALYTICAL REPORT**

Eurofins TestAmerica, Seattle 5755 8th Street East Tacoma, WA 98424 Tel: (253)922-2310

#### Laboratory Job ID: 580-85506-1

Client Project/Site: BNSF Skykomish Ground Water Sampling Event: Skykomish HCC System

### For:

Farallon Consulting LLC 975 5th Avenue NW Suite 100 Issaquah, Washington 98027

Attn: Peter Kingston

Knistine D. allen

Authorized for release by: 4/25/2019 4:05:45 PM

Kristine Allen, Manager of Project Management (253)248-4970 kristine.allen@testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Expert

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#### Job ID: 580-85506-1

#### Laboratory: Eurofins TestAmerica, Seattle

Narrative

Job Narrative 580-85506-1

**Case Narrative** 

#### Comments

No additional comments.

#### Receipt

The samples were received on 4/17/2019 1:05 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were -0.1° C, 0.1° C and 1.4° C.

#### GC Semi VOA

Method(s) NWTPH-Dx: The following sample contained a hydrocarbon pattern in the diesel range; however, the elution pattern was later than the typical diesel fuel pattern used by the laboratory for quantitative purposes: PZ-7S-041619 (580-85506-13).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### **Organic Prep**

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

## **Definitions/Glossary**

#### Client: Farallon Consulting LLC Project/Site: BNSF Skykomish Ground Water

Job ID: 580-85506-1

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Glossary	
Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

#### Client Sample ID: S2-BU-041619 Date Collected: 04/16/19 10:30

Date Received: 04/17/19 13:05

Method: NWTPH-Dx - North	west - Semi-Volatile	Petroleum	Products (GC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.38		0.062	0.062	mg/L		04/22/19 09:30	04/22/19 23:02	1
Motor Oil (>C24-C36)	0.38		0.091	0.091	mg/L		04/22/19 09:30	04/22/19 23:02	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	94		50 _ 150				04/22/19 09:30	04/22/19 23:02	1

Lab Sample ID: 580-85506-1

Matrix: Water

Job ID: 580-85506-1

#### Client Sample ID: S2-BD-041619 Date Collected: 04/16/19 10:30

Date Received: 04/17/19 13:05

Method: NWTPH-Dx - North	west - Semi-Volatile	Petroleum	Products (GC)	1					
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062	0.062	mg/L		04/22/19 09:30	04/22/19 23:24	1
Motor Oil (>C24-C36)	ND		0.092	0.092	mg/L		04/22/19 09:30	04/22/19 23:24	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	88		50 - 150				04/22/19 09:30	04/22/19 23:24	1

Job ID: 580-85506-1

Lab Sample ID: 580-85506-2

5

Matrix: Water

#### Client Sample ID: S2-AU-041619 Date Collected: 04/16/19 10:40

Date Received: 04/17/19 13:05

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062	0.062	mg/L		04/22/19 09:30	04/22/19 23:46	1
Motor Oil (>C24-C36)	ND		0.091	0.091	mg/L		04/22/19 09:30	04/22/19 23:46	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	94		50 - 150				04/22/19 09:30	04/22/19 23:46	1

Lab Sample ID: 580-85506-3

Matrix: Water

Job ID: 580-85506-1

#### Client Sample ID: S2-AD-041619 Date Collected: 04/16/19 11:03

Date Received: 04/17/19 13:05

- Method: NWTPH-Dx - North	nwest - Semi-Volatile	e Petroleum	Products (GC)	)					
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062	0.062	mg/L		04/22/19 09:30	04/23/19 00:07	1
Motor Oil (>C24-C36)	ND		0.092	0.092	mg/L		04/22/19 09:30	04/23/19 00:07	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenvl	86		50 - 150				04/22/19 09:30	04/23/19 00:07	1

Job ID: 580-85506-1

Matrix: Water

Lab Sample ID: 580-85506-4

# 5

#### Client Sample ID: WG-EV-041619 Date Collected: 04/16/19 11:10

Date Received: 04/17/19 13:05

Analyte	Result	Oualifier	Products (GC)	мы	Unit	п	Prepared	Analyzed	Dil Fac
								Analyzeu	
#2 Diesel (C10-C24)	0.50		0.062	0.062	mg/L		04/22/19 09:30	04/23/19 00:29	1
Motor Oil (>C24-C36)	0.50		0.092	0.092	mg/L		04/22/19 09:30	04/23/19 00:29	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	85		50 - 150				04/22/19 09:30	04/23/19 00:29	1

Job ID: 580-85506-1

Lab Sample ID: 580-85506-5 Matrix: Water

Eurofins TestAmerica, Seattle

#### Client Sample ID: WG-WV-041619 Date Collected: 04/16/19 11:25

Date Received: 04/17/19 13:05

Method: NWTPH-Dx - Northwest -	Semi-Volatile	Petroleum	Products (G	C)				
Analyte	Result	Qualifier	RL	MDL	Unit	ļ	D	
								_

o-Terphenyl	90		50 - 150		04/22/19 09:30	04/23/19 00:51	1
Surrogate	%Recovery Qu	ualifier	Limits		Prepared	Analyzed	Dil Fac
Motor Oil (>C24-C36)	0.25		0.092	0.092 mg/L	04/22/19 09:30	04/23/19 00:51	1
#2 Diesel (C10-C24)	0.17		0.062	0.062 mg/L	04/22/19 09:30	04/23/19 00:51	1

_

Job ID: 580-85506-1

Lab Sample ID: 580-85506-6

Analyzed

Prepared

DID: 580-85506-1

Matrix: Water

Dil Fac

5

#### Client Sample ID: FWG-EV-041619 Date Collected: 04/16/19 12:00

Date Received: 04/17/19 13:05

#### Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062	0.062	mg/L		04/22/19 09:30	04/23/19 01:13	1
Motor Oil (>C24-C36)	ND		0.091	0.091	mg/L		04/22/19 09:30	04/23/19 01:13	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	92		50 - 150				04/22/19 09:30	04/23/19 01:13	1

Lab Sample ID: 580-85506-7 Matrix: Water

Job ID: 580-85506-1

Job ID: 580-85506-1

#### Client Sample ID: FWG-WV-041619 Date Collected: 04/16/19 12:05

Date Received: 04/17/19 13:05

#### Lab Sample ID: 580-85506-8 Matrix: Water

Watrix. Water

5

Method: NWTPH-Dx - Northwes	t - Semi-Volatile	e Petroleum	Products (GC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.065	0.065	mg/L		04/22/19 09:30	04/23/19 01:57	1
Motor Oil (>C24-C36)	ND		0.096	0.096	mg/L		04/22/19 09:30	04/23/19 01:57	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	86		50 - 150				04/22/19 09:30	04/23/19 01:57	1

#### Client Sample ID: 5-W-43-041619 Date Collected: 04/16/19 13:54

Date Received: 04/17/19 13:05

#### Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062	0.062	mg/L		04/22/19 09:30	04/23/19 02:18	1
Motor Oil (>C24-C36)	ND		0.091	0.091	mg/L		04/22/19 09:30	04/23/19 02:18	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	91		50 - 150				04/22/19 09:30	04/23/19 02:18	1

## Lab Sample ID: 580-85506-9

Job ID: 580-85506-1

Matrix: Water

#### Client Sample ID: EW-1-041619 Date Collected: 04/16/19 14:07

Date Received: 04/17/19 13:05

#### Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062	0.062	mg/L		04/24/19 10:53	04/24/19 17:48	1
Motor Oil (>C24-C36)	ND		0.091	0.091	mg/L		04/24/19 10:53	04/24/19 17:48	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	94		50 - 150				04/24/19 10:53	04/24/19 17:48	1

Job ID: 580-85506-1

Matrix: Water

Lab Sample ID: 580-85506-10

#### Client Sample ID: PZ-8-041619 Date Collected: 04/16/19 14:35

Date Received: 04/17/19 13:05

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062	0.062	mg/L		04/24/19 10:53	04/24/19 18:09	1
Motor Oil (>C24-C36)	ND		0.091	0.091	mg/L		04/24/19 10:53	04/24/19 18:09	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	93		50 - 150				04/24/19 10:53	04/24/19 18:09	1

Lab Sample ID: 580-85506-11

Matrix: Water

Job ID: 580-85506-1

#### Client Sample ID: GW-1-041619 Date Collected: 04/16/19 14:46

Date Received: 04/17/19 13:05

#### Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062	0.062	mg/L		04/24/19 10:53	04/24/19 18:31	1
Motor Oil (>C24-C36)	ND		0.091	0.091	mg/L		04/24/19 10:53	04/24/19 18:31	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	93		50 - 150				04/24/19 10:53	04/24/19 18:31	1

Job ID: 580-85506-1 5

Lab Sample ID: 580-85506-12 Matrix: Water

Matrix: Water

5

Lab Sample ID: 580-85506-13

#### Client Sample ID: PZ-7S-041619 Date Collected: 04/16/19 15:24

Date Received: 04/17/19 13:05

_ Method: NWTPH-Dx - Northwe	st - Semi-Volatile	e Petroleum	Products (GC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.092		0.062	0.062	mg/L		04/24/19 10:53	04/24/19 18:54	1
Motor Oil (>C24-C36)	0.18		0.091	0.091	mg/L		04/24/19 10:53	04/24/19 18:54	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	97		50 - 150				04/24/19 10:53	04/24/19 18:54	1

#### Client Sample ID: GW-2-041619 Date Collected: 04/16/19 15:40

Date Received: 04/17/19 13:05

#### Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062	0.062	mg/L		04/24/19 10:53	04/24/19 19:15	1
Motor Oil (>C24-C36)	ND		0.091	0.091	mg/L		04/24/19 10:53	04/24/19 19:15	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	96		50 - 150				04/24/19 10:53	04/24/19 19:15	1

Lab Sample ID: 580-85506-14

Matrix: Water

Job ID: 580-85506-1

Lab Sample ID: MB 580-299050/1-A

Matrix: Water

#2 Diesel (C10-C24)

Analyte

Analysis Batch: 299039

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

MB MB

ND

Result Qualifier

RL

0.065

MDL Unit

0.065 mg/L

Prep Type: Total/NA

Prep Batch: 299050

Dil Fac

1

6

19 09:30	04/22/19 21:57	1	
pared	Analyzed	Dil Fac	
19 09:30	04/22/19 21:57	1	
ample II	D: Lab Control	Sample	
	Prep Type: T	'otal/NA	
	Prep Batch:	299050	
	%Rec.		

**Client Sample ID: Method Blank** 

Analyzed

04/22/19 21:57

Prepared

04/22/19 09:30

D

Motor Oil (>C24-C36)	Ν	ND	0.096	(	0.096 mg/L		04/2	2/19 09:30	04/22/19 2	21:57	1
	N	NB MB									
Surrogate	%Recove	ery Qualifier	Limits				F	repared	Analyz	ed	Dil Fac
o-Terphenyl	1	01	50 - 150				04/2	2/19 09:30	04/22/19 2	21:57	1
- Lab Sample ID: LCS 580-299	050/2-A						Client	Sample	ID: Lab Co	ontrol S	Sample
Matrix: Water									Prep T	ype: To	otal/NA
Analysis Batch: 299039									Prep E	Batch:	299050
-			Spike	LCS	LCS				%Rec.		
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits		
#2 Diesel (C10-C24)			0.500	0.460		mg/L		92	50 - 120		
Motor Oil (>C24-C36)			0.500	0.471		mg/L		94	64 - 120		
	LCS L	cs									
Surrogate	%Recovery Q	ualifier	Limits								
o-Terphenyl	88		50 - 150								
- Lab Sample ID: LCSD 580-29	99050/3-A					CI	ient San	nple ID: I	_ab Contro	l Samp	le Dup
Matrix: Water								· · · ·	Prep T	ype: To	otal/NA
Analysis Batch: 299039									Prep E	Batch:	299050
			Spike	LCSD	LCSD				%Rec.		RPD
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)			0.500	0.451		mg/L		90	50 - 120	2	26
Motor Oil (>C24-C36)			0.500	0.499		mg/L		100	64 - 120	6	24

	LCSD I	LCSD	
Surrogate	%Recovery (	Qualifier	Limits
o-Terphenyl	89		50 - 150

Lab Sample ID: MB 580-299241/1-A										<b>Client Sa</b>	ample ID: Met	nod Blank
Matrix: Water											Prep Type	: Total/NA
Analysis Batch: 299301											Prep Bato	h: 299241
	MB	MB										
Analyte	Result	Qualifier	RL		MDL	Unit		D	P	repared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.065	(	0.065	mg/L		_	04/2	4/19 10:53	04/24/19 16:42	2 1
Motor Oil (>C24-C36)	ND		0.096	(	0.096	mg/L			04/2	4/19 10:53	04/24/19 16:42	2 1
	МВ	МВ										
Surrogate	%Recovery	Qualifier	Limits						P	repared	Analyzed	Dil Fac
o-Terphenyl	96		50 - 150						04/2	4/19 10:53	04/24/19 16:42	2 1
_ Lab Sample ID: LCS 580-299241/2-A								С	lient	Sample	ID: Lab Contr	ol Sample
Matrix: Water											Prep Type	: Total/NA
Analysis Batch: 299301											Prep Bato	h: 299241
-			Spike	LCS	LCS						%Rec.	
Analyte			Added	Result	Qua	lifier	Unit		D	%Rec	Limits	
#2 Diesel (C10-C24)			0.500	0.451			mg/L		_	90	50 - 120	
Motor Oil (>C24-C36)			0.500	0.460			mg/L			92	64 - 120	

#### Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC) (Continued) Lab Sample ID: LCS 580-299241/2-A **Client Sample ID: Lab Control Sample** Matrix: Water Prep Type: Total/NA Prep Batch: 299241 Analysis Batch: 299301 LCS LCS Limits Surrogate %Recovery Qualifier 6 50 - 150 o-Terphenyl 92 Lab Sample ID: LCSD 580-299241/3-A Client Sample ID: Lab Control Sample Dup Matrix: Water Prep Type: Total/NA Prep Batch: 299241 Analysis Batch: 299301 LCSD LCSD Spike %Rec. RPD Analyte Added Result Qualifier RPD Limit D %Rec Limits Unit #2 Diesel (C10-C24) 0.500 26 0.417 83 50 - 120 8 mg/L Motor Oil (>C24-C36) 0.500 0.465 93 64 - 120 24 mg/L 1

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
o-Terphenyl	92		50 - 150

<b>Client Sample</b>	e ID: S2-BU	-041619					La	ab Sample I	D: 580-85506-1
Date Collected:	04/16/19 10:30	0							Matrix: Water
Date Received:	04/17/19 13:05	5							
	Batch	Batch		Dilution	Batch	Prepared			
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab	
Total/NA	Prep	3510C			299050	04/22/19 09:30	КО	TAL SEA	
Total/NA	Analysis	NWTPH-Dx		1	299039	04/22/19 23:02	CJ	TAL SEA	
<b>Client Sample</b>	e ID: S2-BD	-041619					La	ab Sample I	D: 580-85506-2
Date Collected:	04/16/19 10:30	0							Matrix: Water
Date Received:	04/17/19 13:05	5							
Γ	Batch	Batch		Dilution	Batch	Prepared			
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab	
Total/NA	Prep	3510C			299050	04/22/19 09:30	КО	TAL SEA	
Total/NA	Analysis	NWTPH-Dx		1	299039	04/22/19 23:24	CJ	TAL SEA	
<b>Client Sample</b>	e ID: S2-AU	-041619					La	ab Sample I	D: 580-85506-3
Date Collected:	04/16/19 10:40	0							Matrix: Water
Date Received:	04/17/19 13:05	5							
	Batch	Batch		Dilution	Batch	Prepared			
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab	
Total/NA	Prep	3510C			299050	04/22/19 09:30	КО	TAL SEA	
Total/NA	Analysis	NWTPH-Dx		1	299039	04/22/19 23:46	CJ	TAL SEA	
Client Sample	e ID: S2-AD	-041619					La	ab Sample I	D: 580-85506-4
Date Collected:	04/16/19 11:03	3						-	Matrix: Water
Date Received:	04/17/19 13:05	5							
Γ	Batch	Batch		Dilution	Batch	Prepared			
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab	
Total/NA	Prep	3510C			299050	04/22/19 09:30	KO	TAL SEA	
Total/NA	Analysis	NWTPH-Dx		1	299039	04/23/19 00:07	CJ	TAL SEA	
Client Sample	e ID: WG-E\	/-041619					La	ab Sample I	D: 580-85506-5
Date Collected:	04/16/19 11:10	0							Matrix: Water
Date Received:	04/17/19 13:05	5							
Γ	Batch	Batch		Dilution	Batch	Prepared			
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab	
Total/NA	Prep	3510C			299050	04/22/19 09:30	КО	TAL SEA	
Total/NA	Analysis	NWTPH-Dx		1	299039	04/23/19 00:29	CJ	TAL SEA	
Client Sample	e ID: WG-W	V-041619					La	ab Sample I	D: 580-85506-6
Date Collected:	04/16/19 11:2	5							Matrix: Water
Date Received:	04/17/19 13:05	5							
Γ	Batch	Batch		Dilution	Batch	Prepared			
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab	
Total/NA	Prep	3510C			299050	04/22/19 09:30	КО	TAL SEA	
Total/NA	Analysis	NWTPH-Dx		1	299039	04/23/19 00:51	CJ	TAL SEA	
Lab Sample ID: 580-85506-7 Client Sample ID: FWG-EV-041619 Date Collected: 04/16/19 12:00 Matrix: Water Date Received: 04/17/19 13:05 Batch Batch Dilution Batch Prepared Prep Type Туре Method Run Factor or Analyzed Number Analyst Lab Total/NA Prep 3510C 299050 04/22/19 09:30 кo TAL SEA Total/NA NWTPH-Dx 299039 04/23/19 01:13 CJ TAL SEA Analysis 1 Client Sample ID: FWG-WV-041619 Lab Sample ID: 580-85506-8 Date Collected: 04/16/19 12:05 Matrix: Water Date Received: 04/17/19 13:05 Batch Batch Dilution Batch Prepared Method Number Lab Prep Type Туре Run Factor or Analyzed Analyst Total/NA TAL SEA Prep 3510C 299050 04/22/19 09:30 кo Total/NA Analysis NWTPH-Dx 299039 04/23/19 01:57 CJ TAL SEA 1 Client Sample ID: 5-W-43-041619 Lab Sample ID: 580-85506-9 Date Collected: 04/16/19 13:54 Matrix: Water Date Received: 04/17/19 13:05 Batch Batch Dilution Batch Prepared Method Prep Type Туре Run Factor Number or Analyzed Lab Analyst 299050 TAL SEA Total/NA Prep 3510C 04/22/19 09:30 KO Total/NA Analysis NWTPH-Dx 299039 04/23/19 02:18 CJ TAL SEA 1 Client Sample ID: EW-1-041619 Lab Sample ID: 580-85506-10 Date Collected: 04/16/19 14:07 Matrix: Water Date Received: 04/17/19 13:05 Batch Batch Dilution Batch Prepared Prep Type Туре Method Run Factor Number or Analyzed Analyst Lab Prep Total/NA 3510C KO TAL SEA 299241 04/24/19 10:53 TAL SEA Total/NA Analysis NWTPH-Dx 1 299301 04/24/19 17:48 ERZ Client Sample ID: PZ-8-041619 Lab Sample ID: 580-85506-11 Date Collected: 04/16/19 14:35 Matrix: Water Date Received: 04/17/19 13:05 Batch Batch Dilution Batch Prepared Prep Type Type Method Run Factor Number or Analyzed Analyst Lab 3510C 299241 KO TAL SEA Total/NA Prep 04/24/19 10:53 Total/NA Analysis NWTPH-Dx 299301 04/24/19 18:09 ERZ TAL SEA 1 Client Sample ID: GW-1-041619 Lab Sample ID: 580-85506-12 Date Collected: 04/16/19 14:46 Matrix: Water Date Received: 04/17/19 13:05 Batch Batch Dilution Batch Prepared Prep Type Туре Method Run Factor Number or Analyzed Analyst Lab Prep Total/NA 3510C 299241 04/24/19 10:53 кo TAL SEA Total/NA Analysis NWTPH-Dx 299301 04/24/19 18:31 ERZ TAL SEA 1

Dilution

Factor

1

Batch

Number

299241

299301

Prepared

or Analyzed

04/24/19 10:53

04/24/19 18:54

Analyst

ко

ERZ

Lab

TAL SEA

TAL SEA

Lab Sample ID: 580-85506-14

Batch

Туре

Prep

Analysis

Batch

Method

3510C

NWTPH-Dx

Client Sample ID: PZ-7S-041619

Date Collected: 04/16/19 15:24

Date Received: 04/17/19 13:05

Prep Type

Total/NA

Total/NA

Matrix: Water

# 7

Lab Sample ID: 580-85506-13 Matrix: Water

# Client Sample ID: GW-2-041619 Date Collected: 04/16/19 15:40 Date Received: 04/17/19 13:05

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			299241	04/24/19 10:53	КО	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	299301	04/24/19 19:15	ERZ	TAL SEA

Run

### Laboratory References:

TAL SEA = Eurofins TestAmerica, Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

# Accreditation/Certification Summary

Client: Farallon Consulting LLC Project/Site: BNSF Skykomish Ground Water

# Job ID: 580-85506-1

# Laboratory: Eurofins TestAmerica, Seattle

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska (UST)	State Program	10	17-024	01-19-20
ANAB	DoD / DOE		L2236	01-19-22
ANAB	ISO/IEC 17025		L2236	01-19-22
California	State Program	9	2901	11-05-19
Montana (UST)	State Program	8	N/A	04-30-20
Oregon	NELAP	10	WA100007	11-05-19
US Fish & Wildlife	Federal		LE058448-0	07-31-19
USDA	Federal		P330-14-00126	02-10-20
Washington	State Program	10	C553	02-17-20

# Client: Farallon Consulting LLC Project/Site: BNSF Skykomish Ground Water

Lab Sample ID Client Sample ID		Matrix	Collected	Received	
580-85506-1	S2-BU-041619	Water	04/16/19 10:30	04/17/19 13:05	
580-85506-2	S2-BD-041619	Water	04/16/19 10:30	04/17/19 13:05	
580-85506-3	S2-AU-041619	Water	04/16/19 10:40	04/17/19 13:05	
580-85506-4	S2-AD-041619	Water	04/16/19 11:03	04/17/19 13:05	
580-85506-5	WG-EV-041619	Water	04/16/19 11:10	04/17/19 13:05	
580-85506-6	WG-WV-041619	Water	04/16/19 11:25	04/17/19 13:05	
580-85506-7	FWG-EV-041619	Water	04/16/19 12:00	04/17/19 13:05	
580-85506-8	FWG-WV-041619	Water	04/16/19 12:05	04/17/19 13:05	
580-85506-9	5-W-43-041619	Water	04/16/19 13:54	04/17/19 13:05	
580-85506-10	EW-1-041619	Water	04/16/19 14:07	04/17/19 13:05	
580-85506-11	PZ-8-041619	Water	04/16/19 14:35	04/17/19 13:05	
580-85506-12	GW-1-041619	Water	04/16/19 14:46	04/17/19 13:05	
580-85506-13	PZ-7S-041619	Water	04/16/19 15:24	04/17/19 13:05	
580-85506-14	GW-2-041619	Water	04/16/19 15:40	04/17/19 13:05	

Job ID: 580-85506-1

F	1			TION			855C	>6	1
BNSF	Laboratory:			Project Manager:			SHIPMENT INFORMATIC	)N	
RAILWAY	Address:			Phone:		Shipment	Method:		
CHAIN OF CUSTODY	City/State/ZIP:			Fax:		Tracking I	Number:		
BNSF PROJECT INFORMATION	Project State of Origin:	A	c	ONSULTANT IN	FORMATION	Project Nur	noer 693-067	-	
BNSF Project Number: 683-067	Project City: SKYK	SMISH	Company: Fac	Mon	Martin	Project Mar	nager: Peter Kings	toΛ	4
BNSF Project Name: SKYKOMISH - MI	xithly	······	Address: 97-5	5th a	STNW	Email: Ph	4nuston@Farallon	mouting	0.24 5
BNSF Contact:	BNSF Work Server No.:		City/State/ZiP: 15	saach	In WA 98	WIT Phone 4	25)295-08adax	<u>a looning c</u>	U/ (·
TURNAROUND TIME	DELIVERABLES	Other De	eliverables?	TV	METHODS FOR A	NALYSIS			
1-day Rush 5- to 8-day Rush	BNSF Standard (Level II)								
2-day Rush Standard 10-Day	Level II	EDD Re	q, Format?						
3-day Rush Other	Level IV			1					8
SAN	IPLE INFORMATION			E		58	0-85506 Chain of Custody		0
	San	ple Collection	Filtered Type	13					9
Sample Identification	Date	Time Sampler	Y/N (Comp/ Matrix Grab)	1Z			COMMENTS		10
52-BU-041619	2 04/16/19	1030 GP	NGW	X			Thomas HDr. A.2. Con 7/	 γ ∘ L'ne Ū.	3 0
· 52-BD -041619	1	1030 CB		1			Cooler Dsc: <u>by Blud</u>		11
\$2-AU-041619		1040 GP					Packing: Bubbly	UPS:	
52-AD-041619		1103 CB					- Cust. Seal: Yes <u>No @</u> Blue Ice X@ Dry None	<ul> <li>Lab Cour:</li> <li>Othere</li> </ul>	<u> </u>
· WG-EV-041619		1110 GP					, mai ne, gea, ma, ma	Other:	
WG-WV-041619		112500					Therm. ID: <u>AZ</u> Cor:_C	2.1 º Une: 0.	. <b>5</b> 。
FWG-EV-041619		1200 GP					Cooler Dsc: LL Blue		
FWG-WEV-041619		1205 CR					<ul> <li>Packing: <u>System 18 2</u></li> <li>Cust. Seal: Ves No</li> </ul>		
5-W-45-041619		1354 GP					Blue Ice, Wet, Dry, None	<ul> <li>Lab Cour:</li> <li>Other:</li> </ul>	<u>×</u>
EW = 1 - 041619		1407 CB							
1 P7-9-041619		143500				r	Therm. ID: <u>Al</u> Cor: <u>}</u>	<u>4 °</u> Unc: 1. Ø	<u>'                                     </u>
· GW-7-041619		1446 GP					Packing: Bubble	FedEx:	
p P7 - 75-041619		1524 CR					Cust. Seal: YesNo	TUPS: Lab Cour:	
$\frac{1}{10}$ $\frac{1}{100}$ $\frac{1}{200}$ $\frac{1}{$		154067	シシン	-			Blue Ice, Wet, Dry, None	Other:	
15						Contest			and an and a second
Relinquished By:	Date/Time: 4/1/7/19	Received By:	Black	·	Date/Time/ 4/17/19 1105	Comments and Sp	pecial Analytical Requirements:		
Relinquished By:	Date/Time:	Received By:		~~	Date/Time:				Constant of Second
Relinquished By:	Date/Time:	Received By:			Date/Time:				
Received by Laboratory:	Date/Time:	Lab Remarks:	*****************		Lab: Custody Intact?	Custody Seal No.	BNSF COC No		source for party dates of

ORIGINAL - RETURN TO LABORATORY WITH SAMPLES

DUPLICATE - CONSULTANT

TAL-1001 (0912)

Client: Farallon Consulting LLC

# Login Number: 85506 List Number: 1

Creator: Blankinship, Tom X

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	False	Insufficient volume received for MS/MSD.
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

List Source: Eurofins TestAmerica, Seattle

# 🛟 eurofins

# Environment Testing TestAmerica

# **ANALYTICAL REPORT**

# Eurofins TestAmerica, Seattle 5755 8th Street East Tacoma, WA 98424 Tel: (253)922-2310

# Laboratory Job ID: 580-86180-1

Client Project/Site: BNSF Skykomish Ground Water

# For:

Farallon Consulting LLC 975 5th Avenue NW Suite 100 Issaquah, Washington 98027

Attn: Peter Kingston

Knitche D. allen

Authorized for release by: 5/20/2019 10:37:55 AM

Kristine Allen, Manager of Project Management (253)248-4970 kristine.allen@testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



# **Table of Contents**

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Sample Summary	24
Chain of Custody	25
Receipt Checklists	26

# Job ID: 580-86180-1

# Laboratory: Eurofins TestAmerica, Seattle

Narrative

Job Narrative 580-86180-1

**Case Narrative** 

# Comments

No additional comments.

### Receipt

The samples were received on 5/15/2019 1:30 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 0.8° C, 0.8° C and 0.8° C.

### GC Semi VOA

Method(s) NWTPH-Dx: The following samples contained a hydrocarbon pattern in the diesel range; however, the elution pattern was later than the typical diesel fuel pattern used by the laboratory for quantitative purposes: S2-BU-051419 (580-86180-3), WG-EV-051419 (580-86180-6) and WG-WV-051419 (580-86180-7).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

### **Organic Prep**

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

# **Definitions/Glossary**

# Client: Farallon Consulting LLC Project/Site: BNSF Skykomish Ground Water

Job ID: 580-86180-1

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Glossary	
Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

# Client Sample ID: S2-BD-051419 Date Collected: 05/14/19 09:40

Date Received: 05/15/19 13:30

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)
----------------------------------------------------------------------

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062	0.062	mg/L		05/19/19 10:12	05/19/19 16:03	1
Motor Oil (>C24-C36)	ND		0.091	0.091	mg/L		05/19/19 10:12	05/19/19 16:03	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	92		50 - 150				05/19/19 10:12	05/19/19 16:03	1

Lab Sample ID: 580-86180-1

Matrix: Water

Job ID: 580-86180-1

# Client Sample ID: GW-2-051419 Date Collected: 05/14/19 09:52

Date Received: 05/15/19 13:30

# Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062	0.062	mg/L		05/19/19 10:12	05/19/19 16:23	1
Motor Oil (>C24-C36)	ND		0.091	0.091	mg/L		05/19/19 10:12	05/19/19 16:23	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	96		50 _ 150				05/19/19 10:12	05/19/19 16:23	1

Lab Sample ID: 580-86180-2

Matrix: Water

5

Eurofins TestAmerica, Seattle

Job ID: 580-86180-1

# Client Sample ID: S2-BU-051419 Date Collected: 05/14/19 10:15

Date Received: 05/15/19 13:30

Method: NWTPH-Dx - North	west - Semi-Volatile	Petroleum	Products (GC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.28		0.061	0.061	mg/L		05/19/19 10:12	05/19/19 16:44	1
Motor Oil (>C24-C36)	0.13		0.091	0.091	mg/L		05/19/19 10:12	05/19/19 16:44	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	97		50 - 150				05/19/19 10:12	05/19/19 16:44	1

Job ID: 580-86180-1

Matrix: Water

Lab Sample ID: 580-86180-3

# Client Sample ID: S2-AD-051419 Date Collected: 05/14/19 10:30

Date Received: 05/15/19 13:30

Method: NWTPH-Dx - Northw	est - Semi-Volatile	Petroleum	Products (GC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062	0.062	mg/L		05/19/19 10:12	05/19/19 17:04	1
Motor Oil (>C24-C36)	ND		0.091	0.091	mg/L		05/19/19 10:12	05/19/19 17:04	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	102		50 - 150				05/19/19 10:12	05/19/19 17:04	1

Job ID: 580-86180-1

Matrix: Water

Lab Sample ID: 580-86180-4

# Client Sample ID: S2-AU-051419 Date Collected: 05/14/19 10:50

Date Received: 05/15/19 13:30

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)	
----------------------------------------------------------------------	--

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062	0.062	mg/L		05/19/19 10:12	05/19/19 17:24	1
Motor Oil (>C24-C36)	ND		0.091	0.091	mg/L		05/19/19 10:12	05/19/19 17:24	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	105		50 - 150				05/19/19 10:12	05/19/19 17:24	1

Lab Sample ID: 580-86180-5

Job ID: 580-86180-1

Matrix: Water

# Client Sample ID: WG-EV-051419 Date Collected: 05/14/19 11:26

Date Received: 05/15/19 13:30

Method: NWTPH-Dx - North	west - Semi-Volatile	Petroleum	Products (GC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.52		0.062	0.062	mg/L		05/19/19 10:12	05/19/19 17:44	1
Motor Oil (>C24-C36)	0.31		0.091	0.091	mg/L		05/19/19 10:12	05/19/19 17:44	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	103		50 - 150				05/19/19 10:12	05/19/19 17:44	1

Matrix: Water

5

Lab Sample ID: 580-86180-6

# Client Sample ID: WG-WV-051419 Date Collected: 05/14/19 11:26

Date Received: 05/15/19 13:30

Method: NWTPH-Dx - Northwest Analyte	- Semi-Volatile Result	Petroleum Qualifier	Products (GC) RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.22		0.062	0.062	mg/L		05/19/19 10:12	05/19/19 18:04	1
Motor Oil (>C24-C36)	0.21		0.091	0.091	mg/L		05/19/19 10:12	05/19/19 18:04	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	89		50 - 150				05/19/19 10:12	05/19/19 18:04	1

Job ID: 580-86180-1

Matrix: Water

# Client Sample ID: P2-7S-051419 Date Collected: 05/14/19 12:42

Date Received: 05/15/19 13:30

# Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062	0.062	mg/L		05/19/19 10:12	05/19/19 18:44	1
Motor Oil (>C24-C36)	ND		0.091	0.091	mg/L		05/19/19 10:12	05/19/19 18:44	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	99		50 - 150				05/19/19 10:12	05/19/19 18:44	1

Matrix: Water

Eurofins TestAmerica, Seattle

Job ID: 580-86180-1

# Lab Sample ID: 580-86180-8

Job ID: 580-86180-1

# Client Sample ID: FWG-WV-051419 Date Collected: 05/14/19 13:40

Date Received: 05/15/19 13:30

# Lab Sample ID: 580-86180-9 Matrix: Water

Method: NWTPH-Dx - Northw	vest - Semi-Volatile	Petroleum	Products (GC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062	0.062	mg/L		05/19/19 10:12	05/19/19 19:05	1
Motor Oil (>C24-C36)	ND		0.091	0.091	mg/L		05/19/19 10:12	05/19/19 19:05	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	96		50 - 150				05/19/19 10:12	05/19/19 19:05	1

Job ID: 580-86180-1

Matrix: Water

Lab Sample ID: 580-86180-10

# Client Sample ID: FWG-EV-051419 Date Collected: 05/14/19 13:40

Date Received: 05/15/19 13:30

# Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062	0.062	mg/L		05/19/19 10:12	05/19/19 19:25	1
Motor Oil (>C24-C36)	ND		0.091	0.091	mg/L		05/19/19 10:12	05/19/19 19:25	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	102		50 _ 150				05/19/19 10:12	05/19/19 19:25	1

Eurofins TestAmerica, Seattle

# Client Sample ID: P2-8-051419 Date Collected: 05/14/19 14:39

Date Received: 05/15/19 13:30

# Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062	0.062	mg/L		05/19/19 10:12	05/19/19 19:45	1
Motor Oil (>C24-C36)	ND		0.091	0.091	mg/L		05/19/19 10:12	05/19/19 19:45	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	103		50 - 150				05/19/19 10:12	05/19/19 19:45	1

Lab Sample ID: 580-86180-11 Matrix: Water

ix: Water

Job ID: 580-86180-1

# Client Sample ID: EW-1-051419 Date Collected: 05/14/19 15:04

Date Received: 05/15/19 13:30

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062	0.062	mg/L		05/19/19 10:12	05/19/19 20:05	1
Motor Oil (>C24-C36)	ND		0.091	0.091	mg/L		05/19/19 10:12	05/19/19 20:05	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	91		50 - 150				05/19/19 10:12	05/19/19 20:05	1

Lab Sample ID: 580-86180-12 Matrix: Water

Matrix: Water

Job ID: 580-86180-1

# Client Sample ID: 5-W-43-051419 Date Collected: 05/14/19 15:49

Date Received: 05/15/19 13:30

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)
----------------------------------------------------------------------

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062	0.062	mg/L		05/19/19 10:12	05/19/19 20:25	1
Motor Oil (>C24-C36)	ND		0.091	0.091	mg/L		05/19/19 10:12	05/19/19 20:25	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	101		50 - 150				05/19/19 10:12	05/19/19 20:25	1

Lab Sample ID: 580-86180-13

Job ID: 580-86180-1

Matrix: Water

# Client Sample ID: GW-1-051419 Date Collected: 05/14/19 16:26

Date Received: 05/15/19 13:30

# Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062	0.062	mg/L		05/19/19 10:12	05/19/19 20:45	1
Motor Oil (>C24-C36)	ND		0.091	0.091	mg/L		05/19/19 10:12	05/19/19 20:45	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	103		50 - 150				05/19/19 10:12	05/19/19 20:45	1

Job ID: 580-86180-1

Lab Sample ID: 580-86180-14

# 0-80180-1

5

Matrix: Water

Lab Sample ID: MB 580-301025/1-A

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Client Sample ID: Method Blank	
Prep Type: Total/NA	
Prep Batch: 301025	

Matrix: Water												Prep 1	Type: T	otal/NA
Analysis Batch: 301027												Prep	Batch:	301025
		MB	MB											
Analyte	Re	esult	Qualifier	R	L	MDL	Unit		D	Р	repared	Analy	zed	Dil Fac
#2 Diesel (C10-C24)		ND		0.06	5	0.065	mg/L			05/1	9/19 10:12	05/19/19	15:03	1
Motor Oil (>C24-C36)		ND		0.09	6	0.096	mg/L			05/1	9/19 10:12	05/19/19	15:03	1
		MB	МВ											
Surrogate	%Reco	very	Qualifier	Limits						P	repared	Analy	zed	Dil Fac
o-Terphenyl		102		50 - 150	_					05/1	9/19 10:12	05/19/19	15:03	1
Lab Sample ID: LCS 580-301	025/2-A								C	lient	Sample	ID: Lab C	ontrol	Sample
Matrix: Water												Prep 1	Type: T	otal/NA
Analysis Batch: 301027												Prep	Batch:	301025
-				Spike	LCS	LCS						%Rec.		
Analyte				Added	Result	Qua	lifier	Unit		D	%Rec	Limits		
#2 Diesel (C10-C24)				0.500	0.459			mg/L		_	92	50 - 120		
Motor Oil (>C24-C36)				0.500	0.495			mg/L			99	64 _ 120		
	LCS	LCS												
Surrogate	%Recovery	Qual	lifier	Limits										
o-Terphenyl	84			50 - 150										
Lab Sample ID: LCSD 580-30	1025/3-A							C	lient	Sam	ple ID: L	ab Contro	ol Samp	ole Dup
Matrix: Water											- -	Prep 1	ype: T	otal/NA
Analysis Batch: 301027												Prep	Batch:	301025
-				Spike	LCSD	LCS	D					%Rec.		RPD
Analyte				Added	Result	Qua	lifier	Unit		D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)		-		0.500	0.456			mg/L		_	91	50 - 120	0	26
Motor Oil (>C24-C36)				0.500	0.472			mg/L			94	64 - 120	5	24
	LCSD	LCS	D											
Surrogate	%Recovery	Qua	lifier	Limits										

Surrogate	%Recovery	Qualifier	Limits
o-Terphenyl	85		50 - 150

Batch

Туре

Prep

Analysis

Batch

Method

3510C

NWTPH-Dx

Client Sample ID: S2-BD-051419

Date Collected: 05/14/19 09:40

Date Received: 05/15/19 13:30

Prep Type

Total/NA

Total/NA

Lab Sample ID: 580-86180-1

Lab Sample ID: 580-86180-2

Lab Sample ID: 580-86180-4

Lab Sample ID: 580-86180-5

Lab Sample ID: 580-86180-6

Matrix: Water

Matrix: Water

Matrix: Water

Matrix: Water

Matrix: Water

# Client Sample ID: GW-2-051419 Date Collected: 05/14/19 09:52 Date Received: 05/15/19 13:30

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			301025	05/19/19 10:12	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	301027	05/19/19 16:23	W1T	TAL SEA

Dilution

Factor

1

Run

Batch

Number

301025

301027

Prepared

or Analyzed

05/19/19 10:12

05/19/19 16:03

# Client Sample ID: S2-BU-051419

Lab Sample ID: 580-86180-3 Matrix: Water

Analyst

JCM

W1T

Lab

TAL SEA

TAL SEA

### Date Collected: 05/14/19 10:15 Date Received: 05/15/19 13:30

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C		·	301025	05/19/19 10:12	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	301027	05/19/19 16:44	W1T	TAL SEA

# Client Sample ID: S2-AD-051419

Date Collected: 05/14/19 10:30 Date Received: 05/15/19 13:30

Γ	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			301025	05/19/19 10:12	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	301027	05/19/19 17:04	W1T	TAL SEA

# Client Sample ID: S2-AU-051419

Date Collected: 05/14/19 10:50 Date Received: 05/15/19 13:30

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			301025	05/19/19 10:12	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	301027	05/19/19 17:24	W1T	TAL SEA

# Client Sample ID: WG-EV-051419 Date Collected: 05/14/19 11:26 Date Received: 05/15/19 13:30

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			301025	05/19/19 10:12	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	301027	05/19/19 17:44	W1T	TAL SEA

Lab Sample ID: 580-86180-7

Lab Sample ID: 580-86180-8

Lab Sample ID: 580-86180-9

Lab Sample ID: 580-86180-10

Lab Sample ID: 580-86180-11

Lab Sample ID: 580-86180-12

Matrix: Water

Matrix: Water

Matrix: Water

Matrix: Water

Matrix: Water

Matrix: Water

# Date Collected: 05/14/19 11:26 Date Received: 05/15/19 13:30 Batch Batch

Client Sample ID: WG-WV-051419

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			301025	05/19/19 10:12	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	301027	05/19/19 18:04	W1T	TAL SEA

# Client Sample ID: P2-7S-051419 Date Collected: 05/14/19 12:42 Date Received: 05/15/19 13:30

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			301025	05/19/19 10:12	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	301027	05/19/19 18:44	W1T	TAL SEA

# Client Sample ID: FWG-WV-051419

Date Collected: 05/14/19 13:40

Date Received: 05/15/19 13:30

—	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			301025	05/19/19 10:12	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	301027	05/19/19 19:05	W1T	TAL SEA

# Client Sample ID: FWG-EV-051419

Date Collected: 05/14/19 13:40

Date Received: 05/15/19 13:30

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			301025	05/19/19 10:12	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	301027	05/19/19 19:25	W1T	TAL SEA

# Client Sample ID: P2-8-051419

Date Collected: 05/14/19 14:39 Date Received: 05/15/19 13:30

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			301025	05/19/19 10:12	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	301027	05/19/19 19:45	W1T	TAL SEA

# Client Sample ID: EW-1-051419 Date Collected: 05/14/19 15:04 Date Received: 05/15/19 13:30

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			301025	05/19/19 10:12	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	301027	05/19/19 20:05	W1T	TAL SEA

Matrix: Water

Matrix: Water

Lab Sample ID: 580-86180-13

Lab Sample ID: 580-86180-14

# 5 7

# Client Sample ID: 5-W-43-051419 Date Collected: 05/14/19 15:49 Date Received: 05/15/19 13:30

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			301025	05/19/19 10:12	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	301027	05/19/19 20:25	W1T	TAL SEA

# Client Sample ID: GW-1-051419 Date Collected: 05/14/19 16:26 Date Received: 05/15/19 13:30

_	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			301025	05/19/19 10:12	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	301027	05/19/19 20:45	W1T	TAL SEA

### Laboratory References:

TAL SEA = Eurofins TestAmerica, Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

# Accreditation/Certification Summary

Client: Farallon Consulting LLC Project/Site: BNSF Skykomish Ground Water

# Job ID: 580-86180-1

# Laboratory: Eurofins TestAmerica, Seattle

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska (UST)	State Program	10	17-024	01-19-20
ANAB	DoD		L2236	01-19-22
ANAB	ISO/IEC 17025		L2236	01-19-22
California	State Program	9	2901	11-05-19
Montana (UST)	State Program	8	N/A	04-30-20
Oregon	NELAP	10	WA100007	11-05-19
US Fish & Wildlife	Federal		LE058448-0	07-31-19
USDA	Federal		P330-14-00126	02-10-20
Washington	State Program	10	C553	02-17-20

# Client: Farallon Consulting LLC Project/Site: BNSF Skykomish Ground Water

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-86180-1	S2-BD-051419	Water	05/14/19 09:40	05/15/19 13:30
580-86180-2	GW-2-051419	Water	05/14/19 09:52	05/15/19 13:30
580-86180-3	S2-BU-051419	Water	05/14/19 10:15	05/15/19 13:30
580-86180-4	S2-AD-051419	Water	05/14/19 10:30	05/15/19 13:30
580-86180-5	S2-AU-051419	Water	05/14/19 10:50	05/15/19 13:30
580-86180-6	WG-EV-051419	Water	05/14/19 11:26	05/15/19 13:30
580-86180-7	WG-WV-051419	Water	05/14/19 11:26	05/15/19 13:30
580-86180-8	P2-7S-051419	Water	05/14/19 12:42	05/15/19 13:30
580-86180-9	FWG-WV-051419	Water	05/14/19 13:40	05/15/19 13:30
580-86180-10	FWG-EV-051419	Water	05/14/19 13:40	05/15/19 13:30
580-86180-11	P2-8-051419	Water	05/14/19 14:39	05/15/19 13:30
580-86180-12	EW-1-051419	Water	05/14/19 15:04	05/15/19 13:30
580-86180-13	5-W-43-051419	Water	05/14/19 15:49	05/15/19 13:30
580-86180-14	GW-1-051419	Water	05/14/19 16:26	05/15/19 13:30

Job ID: 580-86180-1

Bits         Description         Description           RAILWAY         Intervent         Production         Bits					L	ABORA	TORY IN	FORMAT	ION			LA	B WORK O	rder: 05-21	03
Construction         Prove	BRISF	Laboratory:							Project Manag	jer.			SHIPMENT INFORMATION		ON
CHAIN OF CUSTODY         Production         Product P	RAILWAY	Address:	*****						Phone:			Sh	Shipment Method:		
BNSE PROJECT INFORMATION         Provide Based of Super Under King from Consultant INFORMATION         Provide Super Vision Consultant INFORMATION         Provide Sup	CHAIN OF CUSTODY	City/State/ZIP							Fax:			Tra	acking Numb	per:	, ,, , , , , , , , , , , , , , , , , ,
Interference         SAL point SAL         Private Pr	BNSF PROJECT INFORMATION	BNSF PROJECT INFORMATION Project State of Origin:			***	T		с	ONSULTAN		TION	Pro	ject Number:		
Interformation         BATSF         Skylpannik         Muschily         Interformation           Weit Score         Interformation         Interformat	BNSF Project Number: 683-667	Project Cily:	ect City: Skiekowsh Cor			Compan	mpany: myslon Consulting					Pro	Project Manager: Poker Kington		
Intel Conset         Intel Weak dura flow         Description         Hold Mark 10         Hold M	BNSF Project Name: BNSF Skykomile	Mout	lly			Address	9	75	5th M	E N	Ŵ	Em	ait Plan	ston aburellnin	setting com
TURNAROUND TWE         DELIVERABLES         O'ree Concessays         METHODS FOR ANALYSIS           1 - day Rush         0: to: 6-day Rush         DELIVERABLES         O'ree Concessays         METHODS FOR ANALYSIS           2 - day Rush         0: to: 6-day Rush         DELIVERABLES         O'ree Concessays         METHODS FOR ANALYSIS         D           2 - day Rush         0: to: 6-day Rush         Deliver Standard Level II;         Excell V         D           Sample Identification         Containers         Date         Tree         Secret V         D           52 - BD - OSIU19         2         5///1/19         QH52         1         Y         D           52 - BD - OSIU19         1         QH52         1         Y         D         D         D           52 - AD - OSIU19         1         QH52         1         Y         D         D         D         D         D         D         D         D         D         D         D         D         D         D         D         D         D         D         D         D         D         D         D         D         D         D         D         D         D         D         D         D         D         D         D	BNSF Contact:	BNSF Work O	rder No.:			City/Stat	e/ZIP:	Issay	lach	LAA	98027	Pho	me: 425	- 295-0800 Fax:	4
I - day Plack       IS INST Standard Level II         I - day Plack       IS INST Standard Level II         I - day Plack       Is and and 10 Day         I - day Plack       Is and and 10 Day         I - day Plack       Is and and 10 Day         I - day Plack       Is and and 10 Day         I - day Plack       Is and and 10 Day         I - day Plack       Is and and 10 Day         I - day Plack       Date	TURNAROUND TIME	I	DELIVERABLES		] Other D	eliverable	s?	1	I	MET	HODS FOR AN	ALYSIS			
2-duy Plant       Baseneed 10 Day       Level II       EDD Reg. Fermal?         Bit Joby Runk       Other       Contaction       France       Tope       France       Tope       Contaction       Contac	1-day Rush 5- to 8-day Rush	BNSF S	tandard (Level II)												
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	2-day Rush Standard 10-Day	Level III			] EDD Re	q, Format	17								
SAMPLE INFORMATION           Burgle identification         Containers         Fallered Date         Fallered Time         Fallered Sample         Time         Sample         Fallered Company         Time         Fallered Company         Time         Sample         Containers         Lab Use           52-BD - 051419         2         51/4[19         0940         6P         X         G         X         X         Image         Containers         Lab Use         Containers         Lab Use           52-BD - 051419         1         0452         1         1         Therm ID: Â2 Cor:         0.5 ° Unc: 1.2 °         Content Use:         Lab Use           52-AD - 051419         1030         1         0200         1         Content Use:         Lab Cour:	3-day Rush Other	_ Level IV							q						
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	SA	MPLE INFORM	ATION						E						
$\begin{array}{c c c c c c c c c c c c c c c c c c c $			Sam	ple Collection		Filtered	Туре		15						
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Sample identification	Containers	Date	Time	Sample	r Y/N	(Comp/ Grab)	Matrix	ź					COMMENTS	LAB USE
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	52-131) - 051419	2	5/14/19	0940	68	$\sim$	6	W	X						
\$ \$2~BU - 051419       1015       Coder Dec: Lo Blue Coder Dec: Lo Coder Dec: Lo Blue Coder Dec: Lo Coder Dec: Lo Coder Dec: Lo Blue Coder Dec: Dec Dec: Lo Blue Coder Dec: Dec: Dec Dec: Lo Coder Dec: Dec: Dec Dec: Dec: Dec Dec: Dec Dec: Dec:	2 GW-2 - 051419	)	1	0452	1	1	١	١	ł		Thorn I	D. A2	·	8 ° 1 mar 1, 2, °	
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	, S2-BU-051414			1015							Cooler D	sc: <u>La 1</u> 3	102	<u> </u>	
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	152-AD-051419			1030							Packing:	but	<u>&gt;</u>	FedEx:	
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	52-AU-056419			1050							Cust. Sea	l: Yes <u>X</u> No 10 A Day N	·	Lab Cour:	
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	WG-EV-DS1419			1126							plue ice,	in the basis of	one	Other: $r_{c_1} c_2 $	
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	- ING - WV -051419			1126							Therm.	<b>b</b> : A2 с	ior: 0	8 <u>•</u> t'nc: <u>1, 2 •</u>	
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	PZ-78-051419			1242	1.						Cooler I	sc: hg	Reit	FedEx:	
$\frac{10 FWG - EV - 051419}{1 P2 - 8 - 051419}$ $\frac{1340}{1 P2 - 8 - 051419}$ $\frac{1}{2} \frac{1}{2} \frac{1}{2} \frac{1}{3} \frac{1}{3} \frac{1}{2} \frac{1}{3} $	. FWG-WV-051419			1340							Packing:	BUD	0	- UPS:	
$\frac{1}{10} \frac{1}{10} \frac$	======================================			1340		1					Blue Ice.	Wet Dry, 1	None	Lab Cour: Other:	
$\frac{12}{12} = \frac{13}{12} = 13$	1 PZ-8-051419			1429										,	
$\frac{13}{5} - W - \frac{43}{3} - \frac{13}{5} - \frac{13}{4} - \frac{13}{5} - \frac{13}{4} - \frac{13}{4} - \frac{13}{5} - \frac{13}{4} - \frac{13}{4} - \frac{13}{5} - \frac{13}{4} - \frac{13}$	·· EW-1-051419			1504							<ul> <li>Therm. II</li> <li>Cooler Description</li> </ul>	): <u>4% (</u> )	or: $O_{2}$	$\frac{1}{2}$ tine: $\frac{1}{2}$	
Image: Solution of the soluti	5-W-43-051419			1544							Packing:_	in E	120	FedEx:	
Image: Second and the second distribution of the second di	- Gul-1-051419			1626							Cust. Seal	: Yes X No		UPS: Lab Cour:	
Relinquished By: Relinquished By: Relinquished By: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time:		- J		10- 5							– Blue Ice, (	Vet, Dry, No	one	Other:	
Relinquished By: Date/Time: Received By: Date/Time:	Relinquished By:	Date/Time:	114/10/2010	Received By:	L	Time	RI.	K		Date/Time	1/17 1221	C.			
	Relinquished By:	Date/Time:		Received By:				- V	6	Date/Time	<u>, , , , , , , , , , , , , , , , , , , </u>				
Received By: Date/Time: Date/Time:	Relinquished By:	Date/Time:		Received By:						Date/Time					
Received by Laboratory. Date/Time: Lab Remarks: Lab: Custody Intact? Cu	Received by Laboratory:	Date/Time:		Lab Remarks:			·····			Lab: Custo	dy Intact?	^{cu} _580	-86180 C	hain of Custody	

ORIGINAL - RETURN TO LABORATORY WITH SAMPLES

DUPLICATE - CONSULTANT

TAL-1001 (0912)

Client: Farallon Consulting LLC

# Login Number: 86180 List Number: 1

Creator: Vallelunga, Diana L

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td></td>	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Job Number: 580-86180-1

List Source: Eurofins TestAmerica, Seattle

# 🛟 eurofins

# Environment Testing TestAmerica

# **ANALYTICAL REPORT**

# Eurofins TestAmerica, Seattle 5755 8th Street East Tacoma, WA 98424 Tel: (253)922-2310

# Laboratory Job ID: 580-87060-1

Client Project/Site: BNSF Skykomish Monthly

# For:

..... Links

Review your project results through

**Total** Access

**Have a Question?** 

Ask-

The

www.testamericainc.com

Visit us at:

Expert

Farallon Consulting LLC 975 5th Avenue NW Suite 100 Issaquah, Washington 98027

Attn: Peter Kingston

Knitche D. allen

Authorized for release by: 7/3/2019 10:21:09 AM

Kristine Allen, Manager of Project Management (253)248-4970 kristine.allen@testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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# Job ID: 580-87060-1

# Laboratory: Eurofins TestAmerica, Seattle

Narrative

Job Narrative 580-87060-1

# Comments

No additional comments.

### Receipt

The samples were received on 6/20/2019 2:05 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 0.2° C, 1.4° C and 3.7° C.

### GC Semi VOA

Method(s) NWTPH-Dx: The following samples contained a hydrocarbon pattern in the diesel range; however, the elution pattern was later than the typical diesel fuel pattern used by the laboratory for quantitative purposes: S2-BU-061819 (580-87060-10), WG-WV-061819 (580-87060-12), WG-EV-061819 (580-87060-13) and FWG-EV-061819 (580-87060-14).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

### **Organic Prep**

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

# **Definitions/Glossary**

These commonly used abbreviations may or may not be present in this report. Listed under the "D" column to designate that the result is reported on a dry weight basis

Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample

# Client: Farallon Consulting LLC Project/Site: BNSF Skykomish Monthly

Percent Recovery

**Dilution Factor** 

**Contains Free Liquid** 

Contains No Free Liquid

Detection Limit (DoD/DOE)

Estimated Detection Limit (Dioxin)

Limit of Detection (DoD/DOE)

Method Detection Limit Minimum Level (Dioxin)

Practical Quantitation Limit

Relative Error Ratio (Radiochemistry)

Toxicity Equivalent Factor (Dioxin)

Toxicity Equivalent Quotient (Dioxin)

Not Calculated

Quality Control

Limit of Quantitation (DoD/DOE)

Duplicate Error Ratio (normalized absolute difference)

Decision Level Concentration (Radiochemistry)

Minimum Detectable Activity (Radiochemistry) Minimum Detectable Concentration (Radiochemistry)

Not Detected at the reporting limit (or MDL or EDL if shown)

Relative Percent Difference, a measure of the relative difference between two points

Reporting Limit or Requested Limit (Radiochemistry)

Glossary Abbreviation

¤ %R

CFL

CNF

DER

DL

DLC

EDL

LOD

100

MDA

MDC MDL

ML NC

ND

PQL

QC

RER RL

RPD TEF

TEQ

Dil Fac

DL, RA, RE, IN

4
5
8

7/3/2019
# Client Sample ID: GW-1-061819 Date Collected: 06/18/19 09:51

Date Received: 06/20/19 14:05

# Lab Sample ID: 580-87060-1 Matrix: Water

Method: NWTPH-Dx - North	west - Semi-Volatile	Petroleum	Products (GC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062		mg/L		07/01/19 15:37	07/02/19 16:26	1
Motor Oil (>C24-C36)	ND		0.091		mg/L		07/01/19 15:37	07/02/19 16:26	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	92		50 - 150				07/01/19 15:37	07/02/19 16:26	1

# Client Sample ID: PZ-7S-061819 Date Collected: 06/18/19 10:00

Date Received: 06/20/19 14:05

# Lab Sample ID: 580-87060-2 Matrix: Water

Method: NWTPH-Dx - Northw	vest - Semi-Volatile	Petroleum	Products (GC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.063		mg/L		07/01/19 15:37	07/02/19 16:48	1
Motor Oil (>C24-C36)	ND		0.092		mg/L		07/01/19 15:37	07/02/19 16:48	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	100		50 - 150				07/01/19 15:37	07/02/19 16:48	1

#### Job ID: 580-87060-1

#### Client Sample ID: PZ-8-061819 Date Collected: 06/18/19 11:15 Date Received: 06/20/19 14:05

# Lab Sample ID: 580-87060-3 Matrix: Water

Matrix. Walter

Method: NWTPH-Dx - Northw	vest - Semi-Volatile	Petroleum	Products (GC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062		mg/L		07/01/19 15:37	07/02/19 17:10	1
Motor Oil (>C24-C36)	ND		0.091		mg/L		07/01/19 15:37	07/02/19 17:10	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	96		50 - 150				07/01/19 15:37	07/02/19 17:10	1

# Client Sample ID: S-W-43-061819 Date Collected: 06/18/19 11:16

Date Received: 06/20/19 14:05

# Lab Sample ID: 580-87060-4 Matrix: Water

Method: NWTPH-Dx - Northwest -	Semi-Volatile	Petroleum	<b>Products (GC)</b>						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062		mg/L		07/01/19 15:37	07/02/19 17:32	1
Motor Oil (>C24-C36)	ND		0.091		mg/L		07/01/19 15:37	07/02/19 17:32	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	91		50 - 150				07/01/19 15:37	07/02/19 17:32	1

#### Job ID: 580-87060-1

#### Client Sample ID: EW-1-061819 Date Collected: 06/18/19 14:18 Date Received: 06/20/19 14:05

# Lab Sample ID: 580-87060-5 Matrix: Water

Watrix. Water

Method: NWTPH-Dx - Northwest	- Semi-Volatile	e Petroleum	Products (GC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062		mg/L		07/01/19 15:37	07/02/19 17:53	1
Motor Oil (>C24-C36)	ND		0.091		mg/L		07/01/19 15:37	07/02/19 17:53	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	93		50 - 150				07/01/19 15:37	07/02/19 17:53	1

# Client Sample ID: GW-2-061819 Date Collected: 06/18/19 14:35

Date Received: 06/20/19 14:05

-				
Method: NWTPH-Dx	- Northwest - Semi	-Volatile Petroleum	Products (GC)	

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.063		mg/L		07/01/19 15:37	07/02/19 18:15	1
Motor Oil (>C24-C36)	ND		0.093		mg/L		07/01/19 15:37	07/02/19 18:15	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	88		50 - 150				07/01/19 15:37	07/02/19 18:15	1

Job ID: 580-87060-1

# Lab Sample ID: 580-87060-6 Matrix: Water

5

# Client Sample ID: GW-20-061819 Date Collected: 06/18/19 14:45

Date Received: 06/20/19 14:05

#### -Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
ND		0.062		mg/L		07/01/19 15:37	07/02/19 18:37	1
ND		0.092		mg/L		07/01/19 15:37	07/02/19 18:37	1
%Recovery	Qualifier	Limits				Prenared	Analyzod	Dil Eac
Junceovery	Quanner	Emits				Treparea	Analyzea	Diride
91		50 - 150				07/01/19 15:37	07/02/19 18:37	1
	Result ND ND %Recovery 91	Result Qualifier   ND ND   %Recovery Qualifier   91 91	Result ND     Qualifier     RL       ND     0.062       ND     0.092       %Recovery 91     Qualifier     Limits       50 - 150	ResultQualifierRLMDLND0.0620.092ND0.092%RecoveryQualifierLimits9150 - 150	Result ND     Qualifier     RL 0.062     MDL mg/L     Unit mg/L       ND     0.092     mg/L       %Recovery 91     Qualifier     Limits 50 - 150	Result Qualifier RL MDL Unit D   ND 0.062 mg/L mg/L   ND 0.092 mg/L   %Recovery Qualifier Limits   91 50 - 150	Result ND     Qualifier     RL     MDL     Unit mg/L     D     Prepared       ND     0.062     mg/L     07/01/19 15:37       ND     0.092     mg/L     07/01/19 15:37       %Recovery 91     Qualifier     Limits 50 - 150     Prepared	Result ND     Qualifier     RL 0.062     MDL mg/L     Unit mg/L     D     Prepared 07/01/19 15:37     Analyzed 07/02/19 18:37       ND     0.092     mg/L     07/01/19 15:37     07/02/19 18:37       %Recovery 91     Qualifier     Limits 50 - 150     Prepared     Analyzed

Lab Sample ID: 580-87060-7 Matrix: Water

# Client Sample ID: S2-BD-061819 Date Collected: 06/18/19 14:57

Date Received: 06/20/19 14:05

# Lab Sample ID: 580-87060-8 Matrix: Water

Method: NWTPH-Dx - Northwe	st - Semi-Volatile	Petroleum	Products (GC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062		mg/L		07/01/19 15:37	07/02/19 19:21	1
Motor Oil (>C24-C36)	ND		0.091		mg/L		07/01/19 15:37	07/02/19 19:21	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	94		50 - 150				07/01/19 15:37	07/02/19 19:21	1

# Lab Sample ID: 580-87060-9 Matrix: Water

Wallix. Walei

5

Method: NWTPH-Dx - Northwest -	Semi-Volatile	Petroleum	Products (GC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.064		mg/L		07/01/19 15:37	07/02/19 19:43	1
Motor Oil (>C24-C36)	ND		0.095		mg/L		07/01/19 15:37	07/02/19 19:43	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o- i erpnenyi	82		50 - 150				07/01/19 15:37	07/02/19 19:43	7

# Client Sample ID: S2-BU-061819 Date Collected: 06/18/19 15:30

Date Received: 06/20/19 14:05

### Lab Sample ID: 580-87060-10 Matrix: Water

matrix. Water

Method: NWTPH-Dx - Northw	vest - Semi-Volatile	Petroleum	Products (GC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.19		0.062		mg/L		07/01/19 15:37	07/02/19 20:05	1
Motor Oil (>C24-C36)	0.16		0.091		mg/L		07/01/19 15:37	07/02/19 20:05	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	79		50 - 150				07/01/19 15:37	07/02/19 20:05	1

# Client Sample ID: S2-AD-061819 Date Collected: 06/18/19 15:39

Date Received: 06/20/19 14:05

### Lab Sample ID: 580-87060-11 Matrix: Water

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)											
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac	5	
#2 Diesel (C10-C24)	ND		0.062		mg/L		07/01/19 15:37	07/02/19 20:27	1		
Motor Oil (>C24-C36)	ND		0.092		mg/L		07/01/19 15:37	07/02/19 20:27	1		
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac		
o-Terphenyl	96		50 - 150				07/01/19 15:37	07/02/19 20:27	1		

Job ID: 580-87060-1

# Client Sample ID: WG-WV-061819 Date Collected: 06/18/19 16:05

Date Received: 06/20/19 14:05

### Lab Sample ID: 580-87060-12 Matrix: Water

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)												
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac	5		
#2 Diesel (C10-C24)	ND		0.062		mg/L		07/01/19 15:37	07/02/19 20:49	1			
Motor Oil (>C24-C36)	0.099		0.091		mg/L		07/01/19 15:37	07/02/19 20:49	1			
Surrogate o-Terphenyl	%Recovery 83	Qualifier	Limits				Prepared 07/01/19 15:37	Analyzed 07/02/19 20:49	Dil Fac			

# Client Sample ID: WG-EV-061819 Date Collected: 06/18/19 16:10

Date Received: 06/20/19 14:05

### Lab Sample ID: 580-87060-13 Matrix: Water

Watrix. Water

Method: NWTPH-Dx - Northw	vest - Semi-Volatile	Petroleum	Products (GC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.39		0.063		mg/L		07/01/19 15:37	07/02/19 21:11	1
Motor Oil (>C24-C36)	0.34		0.092		mg/L		07/01/19 15:37	07/02/19 21:11	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	82		50 - 150				07/01/19 15:37	07/02/19 21:11	1

Job ID: 580-87060-1

Matrix: Water

Lab Sample ID: 580-87060-14

# Client Sample ID: FWG-EV-061819 Date Collected: 06/18/19 16:48

Date Received: 06/20/19 14:05

#### -Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.068		0.062		mg/L		07/01/19 15:37	07/02/19 21:33	1
Motor Oil (>C24-C36)	0.20		0.092		mg/L		07/01/19 15:37	07/02/19 21:33	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	88		50 - 150				07/01/19 15:37	07/02/19 21:33	1

# Client Sample ID: FWG-WV-061819 Date Collected: 06/18/19 16:52

Date Received: 06/20/19 14:05

### Lab Sample ID: 580-87060-15 Matrix: Water

Method: NWTPH-Dx - Northy	west - Semi-Volatile	Petroleum	Products (GC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062		mg/L		07/01/19 15:37	07/02/19 21:55	1
Motor Oil (>C24-C36)	ND		0.092		mg/L		07/01/19 15:37	07/02/19 21:55	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	88		50 - 150				07/01/19 15:37	07/02/19 21:55	1

Lab Sample ID: MB 580-304552/1-A

Matrix: Water

Analysis Batch: 304632

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Job ID: 580-87060-1

Client Sample ID: Method Blank	
Sherit Sample ID. Method Blank	
Prep Type: Total/NA	
Prep Batch: 304552	
Prep Type: Total/NA Prep Batch: 304552	4

Ň	IB MB											
Analyte Res	ult Qualifier	RL		MDL	Unit		D	P	repared	Analyze	ed	Dil Fac
#2 Diesel (C10-C24)	ND	0.065			mg/L			07/0	1/19 15:37	07/02/19 1	5:20	1
Motor Oil (>C24-C36)	ND	0.096			mg/L			07/0	1/19 15:37	07/02/19 1	5:20	1
N Surrogato % Pacove	no wo	Limite						D	roparad	Analyz	nd	Dil Eac
	80						-	07/0	1/10 15:37	07/02/19 1	5·20 -	1
	03	50 - 150						01/0	1/19 10.01	01/02/19 1	0.20	'
Lab Sample ID: LCS 580-304552/2-A							CI	ient	Sample	ID: Lab Co	ntrol S	ample
Matrix: Water										Prep Ty	pe: To	tal/NA
Analysis Batch: 304632										Prep B	atch: 3	04552
		Spike	LCS	LCS						%Rec.		
Analyte		Added	Result	Quali	ifier	Unit		D	%Rec	Limits		
#2 Diesel (C10-C24)		0.500	0.408			mg/L		_	82	50 - 120		
Motor Oil (>C24-C36)		0.500	0.483			mg/L			97	64 - 120		
	cs											
Surrogate %Recovery G	) Dualifier	Limits										
o-Terphenyl 90		50 - 150										
Lab Sample ID: LCSD 580-304552/3-A						CI	ient S	Sam	ple ID: L	ab Contro	Samp	e Dup
Matrix: Water										Prep Ty	ype: To	tal/NA
Analysis Batch: 304632										Prep E	Batch: 3	04552
		Spike	LCSD	LCSE	)					%Rec.		RPD
Analyte		Added	Result	Quali	ifier	Unit		D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)		0.500	0.374			mg/L			75	50 - 120	9	26
Motor Oil (>C24-C36)		0.500	0.462			mg/L			92	64 - 120	5	24
LCSD L	CSD											
Surrogate %Recovery G	Qualifier	Limits										
o-Terphenyl 104		50 - 150										

Prep Type

Total/NA

Total/NA

Batch

Туре

Prep

Client Sample ID: PZ-7S-061819

Analysis

Batch

Method

3510C

NWTPH-Dx

Matrix: Water

Matrix: Water

Matrix: Water

Matrix: Water

Matrix: Water

Lab Sample ID: 580-87060-1

Lab Sample ID: 580-87060-3

Lab Sample ID: 580-87060-4

Lab Sample ID: 580-87060-5

Lab Sample ID: 580-87060-6

# Lab Sample ID: 580-87060-2 Matrix: Water

Date Collected:	: 06/18/19 10:0	0							Matrix			
Date Received: 06/20/19 14:05												
	Batch	Batch		Dilution	Batch	Prepared						
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab				
Total/NA	Prep	3510C			304552	07/01/19 15:37	N1C	TAL SEA				
Total/NA	Analysis	NWTPH-Dx		1	304632	07/02/19 16:48	T1W	TAL SEA				

Dilution

Factor

1

Run

Batch

Number

304552

Prepared

or Analyzed

07/01/19 15:37

304632 07/02/19 16:26

Analyst

N1C

T1W

Lab

TAL SEA

TAL SEA

# Client Sample ID: PZ-8-061819

Date Collected: 06/18/19 11:15

Date	Received:	06/20/19	14:05

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			304552	07/01/19 15:37	N1C	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	304632	07/02/19 17:10	T1W	TAL SEA

# Client Sample ID: S-W-43-061819

Date Collected: 06/18/19 11:16

Date Received: 06/20/19 14:05

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			304552	07/01/19 15:37	N1C	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	304632	07/02/19 17:32	T1W	TAL SEA

# Client Sample ID: EW-1-061819

Date Collected: 06/18/19 14:18 Date Received: 06/20/19 14:05

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			304552	07/01/19 15:37	N1C	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	304632	07/02/19 17:53	T1W	TAL SEA

#### Client Sample ID: GW-2-061819 Date Collected: 06/18/19 14:35 Date Received: 06/20/19 14:05

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			304552	07/01/19 15:37	N1C	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	304632	07/02/19 18:15	T1W	TAL SEA

Matrix: Water

Matrix: Water

Matrix: Water

Matrix: Water

Lab Sample ID: 580-87060-7 Matrix: Water

Lab Sample ID: 580-87060-8

Lab Sample ID: 580-87060-10

Lab Sample ID: 580-87060-11

Lab Sample ID: 580-87060-12

#### Client Sample ID: GW-20-061819 Date Collected: 06/18/19 14:45 Date Received: 06/20/19 14:05

	Batch	Batch	_	Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			304552	07/01/19 15:37	N1C	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	304632	07/02/19 18:37	T1W	TAL SEA

#### Client Sample ID: S2-BD-061819 Date Collected: 06/18/19 14:57 Date Received: 06/20/19 14:05

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			304552	07/01/19 15:37	N1C	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	304632	07/02/19 19:21	T1W	TAL SEA

# Client Sample ID: S2-AU-061819

Lab Sample ID: 580-87060-9 Matrix: Water

#### Date Collected: 06/18/19 15:12 Date Received: 06/20/19 14:05

Γ	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			304552	07/01/19 15:37	N1C	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	304632	07/02/19 19:43	T1W	TAL SEA

# Client Sample ID: S2-BU-061819

Date Collected: 06/18/19 15:30

Date Received: 06/20/19 14:05

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			304552	07/01/19 15:37	N1C	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	304632	07/02/19 20:05	T1W	TAL SEA

# Client Sample ID: S2-AD-061819

Date Collected: 06/18/19 15:39 Date Received: 06/20/19 14:05

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			304552	07/01/19 15:37	N1C	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	304632	07/02/19 20:27	T1W	TAL SEA

#### Client Sample ID: WG-WV-061819 Date Collected: 06/18/19 16:05 Date Received: 06/20/19 14:05

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			304552	07/01/19 15:37	N1C	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	304632	07/02/19 20:49	T1W	TAL SEA

Matrix: Water

Matrix: Water

Lab Sample ID: 580-87060-13

Lab Sample ID: 580-87060-14

# 2 3 4 5 6 7 8

#### Client Sample ID: WG-EV-061819 Date Collected: 06/18/19 16:10 Date Received: 06/20/19 14:05

Г								
	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			304552	07/01/19 15:37	N1C	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	304632	07/02/19 21:11	T1W	TAL SEA

#### Client Sample ID: FWG-EV-061819 Date Collected: 06/18/19 16:48 Date Received: 06/20/19 14:05

Γ	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			304552	07/01/19 15:37	N1C	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	304632	07/02/19 21:33	T1W	TAL SEA

### Client Sample ID: FWG-WV-061819

Lab Sample ID: 580-87060-15 Matrix: Water

Date Collected: 06/18/19 16:52 Date Received: 06/20/19 14:05

_	Batch	Batch		Dilution	Batch	Prepared		
Ргер Туре	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			304552	07/01/19 15:37	N1C	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	304632	07/02/19 21:55	T1W	TAL SEA

#### Laboratory References:

TAL SEA = Eurofins TestAmerica, Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

5

**8** 9

#### Laboratory: Eurofins TestAmerica, Seattle Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below. Authority Program EPA Region Identification Number **Expiration Date** Washington State Program 10 C553 02-17-20 The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification. Matrix Analysis Method Prep Method Analyte

# Sample Summary

#### Client: Farallon Consulting LLC Project/Site: BNSF Skykomish Monthly

		Sample Sum	imary			
Client: Farallor Project/Site: Bl	I Consulting LLC				Job ID: 580-87060-1	2
Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID	
580-87060-1		Water	06/18/19 09:51	06/20/19 14:05		
580-87060-2	PZ-7S-061819	Water	06/18/19 10:00	06/20/19 14:05		
580-87060-3	PZ-8-061819	Water	06/18/19 11:15	06/20/19 14:05		-
580-87060-4	S-W-43-061819	Water	06/18/19 11:16	06/20/19 14:05		5
580-87060-5	EW-1-061819	Water	06/18/19 14:18	06/20/19 14:05		
580-87060-6	GW-2-061819	Water	06/18/19 14:35	06/20/19 14:05		
580-87060-7	GW-20-061819	Water	06/18/19 14:45	06/20/19 14:05		
580-87060-8	S2-BD-061819	Water	06/18/19 14:57	06/20/19 14:05		
580-87060-9	S2-AU-061819	Water	06/18/19 15:12	06/20/19 14:05		
580-87060-10	S2-BU-061819	Water	06/18/19 15:30	06/20/19 14:05		8
580-87060-11	S2-AD-061819	Water	06/18/19 15:39	06/20/19 14:05		
580-87060-12	WG-WV-061819	Water	06/18/19 16:05	06/20/19 14:05		9
580-87060-13	WG-EV-061819	Water	06/18/19 16:10	06/20/19 14:05		
580-87060-14	FWG-EV-061819	Water	06/18/19 16:48	06/20/19 14:05		
580-87060-15	FWG-WV-061819	Water	06/18/19 16:52	06/20/19 14:05		

				L	ABORA	FORY IN	FORMAT	ION		E	LAB WORK ORDER: $87060$		
BASF	Laboratory:							Project Manage	36		SHIPMENT INFORMATION		
RAILWAY	Address:							Phone:		s	Shipment Method:		
CHAIN OF CUSTODY	City/State/ZIP:							Fax:		1	Tracking Number:		
BNSF PROJECT INFORMATION	Project State o	of Origin:	hinaton				С	ONSULTANT	INFORMATION	P	Project Number:		
SNSF Project Number: 683-067	Project City:	Styteomis	sh		Company	Fai	valler	(BASI	alting	P	Project Manager: Porte Lincoston		
SNSF Project Name: BNSF Skykomith N	Northly				Address:	975	549	AUE NA	<u> </u>	E	mail: Orivertan about the const		
NSF Contact:	BNSF Work Or	rder No.:	· · · · · · · · · · · · · · · · · · ·		City/State	JZIP: 15		h . 1.14	2 9K097	P	the Has -395 -250 Fax:		
TURNAROUND TIME	C	ELIVERABLES	Ľ	] Other De	eliverable	5?			METHODS FOR A	NALYSIS			
1-day Rush 5- to 8-day Rush	BNSF S	landard (Level II)											
2-day Rush Standard 10-Day	Levei III		Г	EDD Red	ą, Format	?							
🗙 3-day Rush 🔄 Other	Level IV		_	_				ž					
S	AMPLE INFORM	ATION						Ĩ		97 			
*******		Sam	uple Collection		1	Type	1	dL			580-87060 Chain of Custody		
Sample Identification	Containers	Date	Time	Samuler	Filtered Y/N	(Comp/	Matrix	3					
Child - acisia		The ho			• 1	1		< 12			COMMENTS LAB USE		
6W-1-001817		6/18/19	0151	64	$\sim$	6	Werker	X					
<u>72-13-061819</u>	i		1000					X			Therm. ID: <u>42</u> Cor: <u>1.4</u> ° Unc: <u>1.7</u>		
12-8-061819			1115	41				<u>x</u>			Packing: Arbhitz FedEx:		
3-W-43-061019		<b> </b>	116	67	<b></b>		<b> </b>	X			Cust. Seal: Yes KNO		
CW-1-061819		<u>                                     </u>	1418	6P				X			Blue Ice, Wet, Dry, None Other:		
GW-2-061819			1435	GT				K			<b>I I I</b>		
GW-20-061819			1445	LT				X			Therm. ID: $\frac{1}{2}$ Cor: $\frac{5}{2}$ $\frac{1}{2}$ Unc: $\frac{1}{2}$		
S2-BD-061819			1457	6P				X			Cooler Dsc: <u>US ØNG C</u> FedEx: Packing: Bubbl C FedEx:		
S2-AU-061819			1512	LT				X			Cust. Seal: Yes <u>Y</u> No Lab Cour: <u>Y</u>		
52- 30-061819			1530	6P				X			Blue Ice, Vet, Dry, None Other:		
52- AD - 061819			1539	LT				X					
WG-WV-061819			1605	GP				X			Therm. ID: $\underline{A2}$ Cor: $\underline{U}, \underline{U} \circ$ Unc: $\underline{U}, \underline{Y}$		
WG-EV-061819			1610	LT				X			Packing: Bubble FedEx:		
FWG - EV-061819			1648	GP				X			Cust. Seal: Yes <u>V</u> No Lab Cour: <u>X</u>		
FWG-WY-961819	4		1652	LT		L	上	X			Blue Ice, Wet, Dry, None Other:		
nquished By:	Date/Time:	9/19/054	Received By:	26		<u></u>			Date/Time:	Comments	and Special Analytical Requirements:		
inquished By:	Date/Time:	//·/·	Received By:						Date/Time:				
nquished By:	Date/Time:		Received By:						Date/Time:	-			
eived by Laboratory:	Date/Time:		Lab Remarks:						Lab: Custody Intact?	Custody Seal N	No. BNSF COC No		
			<u> </u>						L Yes No				

**ORIGINAL - RETURN TO LABORATORY WITH SAMPLES** 

DUPLICATE - CONSULTANT

TAL-1001 (0912)

e.

Client: Farallon Consulting LLC

#### Login Number: 87060 List Number: 1

Creator: Blankinship, Tom X

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Job Number: 580-87060-1

List Source: Eurofins TestAmerica, Seattle

# 🛟 eurofins

# Environment Testing TestAmerica

# **ANALYTICAL REPORT**

Eurofins TestAmerica, Seattle 5755 8th Street East Tacoma, WA 98424 Tel: (253)922-2310

Laboratory Job ID: 580-87965-1 Client Project/Site: BNSF-Skykomish

For: Farallon Consulting LLC 975 5th Avenue NW Suite 100 Issaquah, Washington 98027

Attn: Peter Kingston

Knittene D. allen

Authorized for release by: 8/9/2019 2:07:01 PM

Kristine Allen, Manager of Project Management (253)248-4970 kristine.allen@testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

LINKS Review your project results through Total Access Have a Question?

PAsk-The Expert

Visit us at: www.testamericainc.com

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Sample Summary	25
Chain of Custody	26
Receipt Checklists	27

# Job ID: 580-87965-1

#### Laboratory: Eurofins TestAmerica, Seattle

Narrative

Job Narrative 580-87965-1

#### Comments

No additional comments.

#### Receipt

The samples were received on 7/27/2019 10:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 1.2° C, 4.5° C and 4.6° C.

#### GC Semi VOA

Method(s) NWTPH-Dx: The following samples contained a hydrocarbon pattern in the diesel range; however, the elution pattern was later than the typical diesel fuel pattern used by the laboratory for quantitative purposes: S2-BU-072519 (580-87965-8), WG-EV-072519 (580-87965-9) and WG-WV-072519 (580-87965-12).

Method(s) NWTPH-Dx: Surrogate recovery for the following sample was outside control limits: FWG-WV-072519 (580-87965-14). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

4

# Qualifiers

GC Semi VC Qualifier	OA Qualifier Description	
X	Surrogate is outside control limits	
Glossary		

		-
Glossary		5
Abbreviation	These commonly used abbreviations may or may not be present in this report.	
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis	
%R	Percent Recovery	
CFL	Contains Free Liquid	
CNF	Contains No Free Liquid	
DER	Duplicate Error Ratio (normalized absolute difference)	ð
Dil Fac	Dilution Factor	
DL	Detection Limit (DoD/DOE)	9
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample	
DLC	Decision Level Concentration (Radiochemistry)	
EDL	Estimated Detection Limit (Dioxin)	
LOD	Limit of Detection (DoD/DOE)	
LOQ	Limit of Quantitation (DoD/DOE)	
MDA	Minimum Detectable Activity (Radiochemistry)	
MDC	Minimum Detectable Concentration (Radiochemistry)	
MDL	Method Detection Limit	
ML	Minimum Level (Dioxin)	
NC	Not Calculated	
ND	Not Detected at the reporting limit (or MDL or EDL if shown)	
PQL	Practical Quantitation Limit	
QC	Quality Control	
RER	Relative Error Ratio (Radiochemistry)	
RL	Reporting Limit or Requested Limit (Radiochemistry)	
RPD	Relative Percent Difference, a measure of the relative difference between two points	
TEF	Toxicity Equivalent Factor (Dioxin)	
TEQ	Toxicity Equivalent Quotient (Dioxin)	

#### Job ID: 580-87965-1

# Client Sample ID: S-W-43-072519

Date Collected: 07/25/19 11:25 Date Received: 07/27/19 10:00

### Lab Sample ID: 580-87965-1 Matrix: Water

Method: NWTPH-Dx - Northy	vest - Semi-Volatile	e Petroleum	<b>Products (GC)</b>						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.061		mg/L		08/06/19 13:29	08/08/19 14:16	1
Motor Oil (>C24-C36)	ND		0.090		mg/L		08/06/19 13:29	08/08/19 14:16	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	90		50 - 150				08/06/19 13:29	08/08/19 14:16	1

# Client Sample ID: EW-1-072519

Date Collected: 07/25/19 11:30 Date Received: 07/27/19 10:00

# Lab Sample ID: 580-87965-2 Matrix: Water

5

Method: NWTPH-Dx - Northw	est - Semi-Volatile	Petroleum	<b>Products (GC)</b>						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062		mg/L		08/06/19 13:29	08/08/19 14:37	1
Motor Oil (>C24-C36)	ND		0.092		mg/L		08/06/19 13:29	08/08/19 14:37	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	101		50 - 150				08/06/19 13:29	08/08/19 14:37	1

#### Job ID: 580-87965-1

# Client Sample ID: GW-1-072519

Date Collected: 07/25/19 12:20 Date Received: 07/27/19 10:00

### Lab Sample ID: 580-87965-3 Matrix: Water

5

Method: NWTPH-Dx - Northwest -	Semi-Volatile	Petroleum	Products (GC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.061		mg/L		08/06/19 13:29	08/08/19 14:57	1
Motor Oil (>C24-C36)	ND		0.091		mg/L		08/06/19 13:29	08/08/19 14:57	1
Surrogate o-Terphenyl	%Recovery	Qualifier	Limits				Prepared	Analyzed 08/08/19 14:57	Dil Fac

# Client Sample ID: PZ-8-072519

Date Collected: 07/25/19 12:30 Date Received: 07/27/19 10:00

# Lab Sample ID: 580-87965-4 Matrix: Water

5

Method: NWTPH-Dx - Northw	vest - Semi-Volatile	Petroleum	Products (GC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.063		mg/L		08/06/19 13:29	08/08/19 15:17	1
Motor Oil (>C24-C36)	ND		0.092		mg/L		08/06/19 13:29	08/08/19 15:17	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	93		50 - 150				08/06/19 13:29	08/08/19 15:17	1

# Client Sample ID: GW-2-072519

Date Collected: 07/25/19 13:12 Date Received: 07/27/19 10:00

# Lab Sample ID: 580-87965-5 Matrix: Water

5

Method: NWTPH-Dx - Northwe	st - Semi-Volatile	Petroleum	Products (GC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062		mg/L		08/06/19 13:29	08/08/19 15:37	1
Motor Oil (>C24-C36)	ND		0.091		mg/L		08/06/19 13:29	08/08/19 15:37	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	101		50 - 150				08/06/19 13:29	08/08/19 15:37	1

# Job ID: 580-87965-1

# Client Sample ID: PZ-7S-072519

Date Collected: 07/25/19 13:22 Date Received: 07/27/19 10:00

# Lab Sample ID: 580-87965-6 Matrix: Water

5

Method: NWTPH-Dx - Northwe	st - Semi-Volatile	Petroleum	<b>Products (GC)</b>						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.061		mg/L		08/06/19 13:29	08/08/19 16:17	1
Motor Oil (>C24-C36)	ND		0.091		mg/L		08/06/19 13:29	08/08/19 16:17	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	100		50 - 150				08/06/19 13:29	08/08/19 16:17	1

#### Job ID: 580-87965-1

# Client Sample ID: S2-BD-072519

Date Collected: 07/25/19 14:35 Date Received: 07/27/19 10:00

# Lab Sample ID: 580-87965-7 Matrix: Water

5

Method: NWTPH-Dx - Northwest -	Semi-Volatile	Petroleum	Products (GC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.065		mg/L		08/06/19 13:29	08/08/19 16:38	1
Motor Oil (>C24-C36)	ND		0.096		mg/L		08/06/19 13:29	08/08/19 16:38	1
Surrogate o-Terphenyl	%Recovery 94	Qualifier	Limits				Prepared 08/06/19 13:29	Analyzed 08/08/19 16:38	Dil Fac

# Client Sample ID: S2-BU-072519

Date Collected: 07/25/19 14:42 Date Received: 07/27/19 10:00

# Lab Sample ID: 580-87965-8 Matrix: Water

Method: NWTPH-Dx - Northwe	est - Semi-Volatile	Petroleum	Products (GC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.19		0.062		mg/L		08/07/19 09:57	08/08/19 17:58	1
Motor Oil (>C24-C36)	0.13		0.092		mg/L		08/07/19 09:57	08/08/19 17:58	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	103		50 - 150				08/07/19 09:57	08/08/19 17:58	1

# Client Sample ID: WG-EV-072519

Date Collected: 07/25/19 14:35 Date Received: 07/27/19 10:00

# Lab Sample ID: 580-87965-9 Matrix: Water

Method: NWTPH-Dx - Northwest	- Semi-Volatile	Petroleum	<b>Products (GC)</b>						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.38		0.062		mg/L		08/07/19 09:57	08/08/19 18:18	1
Motor Oil (>C24-C36)	0.26		0.091		mg/L		08/07/19 09:57	08/08/19 18:18	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	55		50 - 150				08/07/19 09:57	08/08/19 18:18	1
#### Job ID: 580-87965-1

# Client Sample ID: S2-AD-072519

Date Collected: 07/25/19 15:04 Date Received: 07/27/19 10:00

#### Lab Sample ID: 580-87965-10 Matrix: Water

Method: NWTPH-Dx - Northw	est - Semi-Volatile	Petroleum	<b>Products (GC)</b>						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062		mg/L		08/07/19 09:57	08/08/19 18:39	1
Motor Oil (>C24-C36)	ND		0.092		mg/L		08/07/19 09:57	08/08/19 18:39	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	100		50 - 150				08/07/19 09:57	08/08/19 18:39	1

#### Job ID: 580-87965-1

# Client Sample ID: S2-AU-072519

Date Collected: 07/25/19 15:05 Date Received: 07/27/19 10:00

#### Lab Sample ID: 580-87965-11 Matrix: Water

Method: NWTPH-Dx - Northwe	est - Semi-Volatile	Petroleum	<b>Products (GC)</b>						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062		mg/L		08/07/19 09:57	08/08/19 18:59	1
Motor Oil (>C24-C36)	ND		0.091		mg/L		08/07/19 09:57	08/08/19 18:59	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	73		50 - 150				08/07/19 09:57	08/08/19 18:59	1

#### Job ID: 580-87965-1

#### Client Sample ID: WG-WV-072519

Date Collected: 07/25/19 15:13 Date Received: 07/27/19 10:00

#### Lab Sample ID: 580-87965-12 Matrix: Water

Method: NWTPH-Dx - Northwest -	Semi-Volatile	e Petroleum	<b>Products (GC</b>	)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac	5
#2 Diesel (C10-C24)	ND		0.062		mg/L		08/07/19 09:57	08/08/19 19:19	1	
Motor Oil (>C24-C36)	0.098		0.091		mg/L		08/07/19 09:57	08/08/19 19:19	1	
Surrogate o-Terphenyl	%Recovery 106	Qualifier	Limits				Prepared	Analyzed 08/08/19 19:19	Dil Fac	

# Client Sample ID: FWG-EV-072519

Date Collected: 07/25/19 15:33 Date Received: 07/27/19 10:00

Job ID: 580-87965-1

#### Lab Sample ID: 580-87965-13 Matrix: Water

Method: NWTPH-Dx - Northwest	Semi-Volatile	Petroleum	<b>Products (GC)</b>						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062		mg/L		08/07/19 09:57	08/08/19 19:59	1
Motor Oil (>C24-C36)	ND		0.092		mg/L		08/07/19 09:57	08/08/19 19:59	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	111		50 - 150				08/07/19 09:57	08/08/19 19:59	1

#### Client Sample ID: FWG-WV-072519

Date Collected: 07/25/19 15:38 Date Received: 07/27/19 10:00

# Job ID: 580-87965-1

#### Lab Sample ID: 580-87965-14 Matrix: Water

Method: NWTPH-Dx - Northwest	Semi-Volatile	e Petroleum	Products (GC	;)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac	5
#2 Diesel (C10-C24)	ND		0.062		mg/L		08/07/19 09:57	08/08/19 20:19	1	
Motor Oil (>C24-C36)	ND		0.092		mg/L		08/07/19 09:57	08/08/19 20:19	1	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac	
o-Terphenyl	39	X	50 - 150				08/07/19 09:57	08/08/19 20:19	1	

Analysis Batch: 307877

Matrix: Water

Motor Oil (>C24-C36)

Lab Sample ID: MB 580-307650/1-A

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

MR MR

Job ID: 580-87965-1

Prep Type: Total/NA

Prep Batch: 307650

**Client Sample ID: Method Blank** 

Analyte	Re	sult	Qualifier	I	RL		MDL	Unit		D	Р	repared	Analyzed		Dil Fac
#2 Diesel (C10-C24)		ND		0.0	65			mg/L		_	08/0	6/19 13:29	08/08/19 12:3	36	1
Motor Oil (>C24-C36)		ND		0.0	96			mg/L			08/0	6/19 13:29	08/08/19 12:3	36	1
		ΜВ	МВ												
Surrogate	%Recov	verv	Qualifier	Limits							P	repared	Analyzed		Dil Fac
o-Terphenyl		92		50 - 150	0						08/0	6/19 13:29	08/08/19 12:3	36	1
- - 										~	liant	Comple			
Lab Sample ID. LCS 560-307	050/2-A									U	nent	Sample	Drop Tup	101 3	
Matrix. Water														9. TO	
Analysis Batch: 30/8//				Spiko		1.09	1.09							cn: 3	0/650
Amelyta				Spike		Decult	0.00		11		~	% Dee	/orrec.		
						Result	Qua	inter	Unit ma/l			%Rec			
#2 Diesei (C10-C24)				0.500		0.398			mg/L			80	50 - 120		
Motor Oil (>C24-C36)				0.500		0.521			mg/L			104	64 - 120		
	LCS	LCS													
Surrogate	%Recoverv	Qua	lifier	Limits											
o-Terphenyl	94			50 - 150											
Lab Sample ID: LCSD 580-30	07650/3-4								C	iont	Sam		ah Control S	amni	
Matrix: Water									01	iem	oun		Bron Typ		
Analysia Databy 207977													Drop Bot	5. 10 abi 2	07650
Analysis Batch. 307677				Spike		1.060	1.00	n						cn. s	0/030
Amelyta				Spike		Desult	0.00	U lifian	11		~	% Dee	%Rec.		
				Added		Result	Qua	inter	Unit			%Rec			
#2 Diesei (C10-C24)				0.500		0.388			mg/L			78	50 - 120	3	26
Motor Oil (>C24-C36)				0.500		0.507			mg/L			101	64 - 120	3	24
	LCSD	LCS	D												
Surrogate	%Recovery	Qua	lifier	Limits											
o-Terphenyl	91			50 - 150											
- - 	731/1-1											Client Sa	mplo ID: Mo	thod	Blank
Matrix: Water	<b>13111</b>											onent oc	Bron Tyn		
Matrix. Water													Prep Typ	8. 10 ab. 2	07724
Analysis Batch: 307877		мр	MD										Ргер Ба	cn: 3	07734
Amelyte	De		Qualifian		וח		MDI	11		-		u a u a u a d	Analyzad		
	Ke	ND	Quaimer				WDL	ma/l		_		7/10.00/57			
#2 Dieser (C10-C24)				0.0	00			mg/L			06/0	7/19/09.57	08/08/19 16.	-0	1
Motor OII (>C24-C38)		ND		0.0	90			mg/L			06/0	//19/09.57	06/06/19 10.5	0	1
		ΜВ	МВ												
Surrogate	%Recov	/ery	Qualifier	Limits							Р	repared	Analyzed		Dil Fac
o-Terphenyl		111		50 - 150	0						08/0	7/19 09:57	08/08/19 16:	58 -	1
-										-					
Lab Sample ID: LCS 580-307	(734/2-A									C	lient	Sample	ID: Lab Cont	rol S	ample
Matrix: Water													Ргер Тур	e: To	tal/NA
Analysis Batch: 307877													Prep Bat	ch: 3	07734
				Spike		LCS	LCS						%Rec.		
Analyte				Added		Result	Qua	lifier	Unit		<u>D</u>	%Rec	Limits		
#2 Diesel (C10-C24)				0.500		0.371			mg/L			74	50 - 120		

64 - 120

99

0.493

mg/L

0.500

6

#### Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC) (Continued) Lab Sample ID: LCS 580-307734/2-A **Client Sample ID: Lab Control Sample** Matrix: Water Prep Type: Total/NA Prep Batch: 307734 Analysis Batch: 307877 LCS LCS Limits Surrogate %Recovery Qualifier 50 - 150 o-Terphenyl 93 Lab Sample ID: LCSD 580-307734/3-A Client Sample ID: Lab Control Sample Dup Matrix: Water Prep Type: Total/NA Prep Batch: 307734 Analysis Batch: 307877 Spike LCSD LCSD %Rec. RPD Analyte Added Result Qualifier RPD Limit D %Rec Limits Unit #2 Diesel (C10-C24) 0.500 26 0.377 75 50 - 120 2 mg/L Motor Oil (>C24-C36) 0.500 0.509 102 64 - 120 3 24 mg/L

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
o-Terphenyl	89		50 - 150

#### Client Sample ID: S-W-43-072519 Date Collected: 07/25/19 11:25 Date Received: 07/27/19 10:00

d: 07/27/19	10:00					
Batch	Batch		Dilution	Batch	Prepared	
Туре	Method	Run	Factor	Number	or Analyzed	Α

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			307650	08/06/19 13:29	N1C	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	307877	08/08/19 14:16	T1W	TAL SEA

#### Client Sample ID: EW-1-072519 Date Collected: 07/25/19 11:30 Date Received: 07/27/19 10:00

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			307650	08/06/19 13:29	N1C	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	307877	08/08/19 14:37	T1W	TAL SEA

#### Client Sample ID: GW-1-072519

Date Collected: 07/25/19 12:20

Date Received: 07/27/19 10:00

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			307650	08/06/19 13:29	N1C	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	307877	08/08/19 14:57	T1W	TAL SEA

### Client Sample ID: PZ-8-072519

Date Collected: 07/25/19 12:30

Date Received: 07/27/19 10:00

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			307650	08/06/19 13:29	N1C	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	307877	08/08/19 15:17	T1W	TAL SEA

# Client Sample ID: GW-2-072519

Date Collected: 07/25/19 13:12 Date Received: 07/27/19 10:00

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			307650	08/06/19 13:29	N1C	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	307877	08/08/19 15:37	T1W	TAL SEA

#### Client Sample ID: PZ-7S-072519 Date Collected: 07/25/19 13:22 Date Received: 07/27/19 10:00

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			307650	08/06/19 13:29	N1C	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	307877	08/08/19 16:17	T1W	TAL SEA

Job ID: 580-87965-1

Matrix: Water

Matrix: Water

Matrix: Water

Matrix: Water

Matrix: Water

Lab Sample ID: 580-87965-2

Lab Sample ID: 580-87965-3

Lab Sample ID: 580-87965-4

Lab Sample ID: 580-87965-5

Lab Sample ID: 580-87965-6

#### Client Sample ID: S2-BD-072519 Date Collected: 07/25/19 14:35

Date Received: 07/27/19 10:00

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			307650	08/06/19 13:29	N1C	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	307877	08/08/19 16:38	T1W	TAL SEA

#### Client Sample ID: S2-BU-072519 Date Collected: 07/25/19 14:42 Date Received: 07/27/19 10:00

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			307734	08/07/19 09:57	PRO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	307877	08/08/19 17:58	T1W	TAL SEA

#### Client Sample ID: WG-EV-072519

Lab Sample ID: 580-87965-9 Matrix: Water

Date Collected: 07/25/19 14:35 Date Received: 07/27/19 10:00

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			307734	08/07/19 09:57	PRO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	307877	08/08/19 18:18	T1W	TAL SEA

### Client Sample ID: S2-AD-072519

Date Collected: 07/25/19 15:04 Date Received: 07/27/19 10:00

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			307734	08/07/19 09:57	PRO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	307877	08/08/19 18:39	T1W	TAL SEA

# Client Sample ID: S2-AU-072519

Date Collected: 07/25/19 15:05 Date Received: 07/27/19 10:00

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			307734	08/07/19 09:57	PRO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	307877	08/08/19 18:59	T1W	TAL SEA

#### Client Sample ID: WG-WV-072519 Date Collected: 07/25/19 15:13 Date Received: 07/27/19 10:00

_	Batch	Batch		Dilution	Batch	Prepared		
Ргер Туре	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			307734	08/07/19 09:57	PRO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	307877	08/08/19 19:19	T1W	TAL SEA

Job ID: 580-87965-1

Matrix: Water

Matrix: Water

Matrix: Water

Matrix: Water

Matrix: Water

Lab Sample ID: 580-87965-7

Lab Sample ID: 580-87965-8

Lab Sample ID: 580-87965-10

Lab Sample ID: 580-87965-11

Lab Sample ID: 580-87965-12

#### Client Sample ID: FWG-EV-072519 Date Collected: 07/25/19 15:33 Date Received: 07/27/19 10:00

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			307734	08/07/19 09:57	PRO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	307877	08/08/19 19:59	T1W	TAL SEA

#### Client Sample ID: FWG-WV-072519 Date Collected: 07/25/19 15:38 Date Received: 07/27/19 10:00

_	Batch	Batch		Dilution	Batch	Prepared		
Prep Туре	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			307734	08/07/19 09:57	PRO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	307877	08/08/19 20:19	T1W	TAL SEA

#### Laboratory References:

TAL SEA = Eurofins TestAmerica, Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Job ID: 580-87965-1

# Lab Sample ID: 580-87965-13 Matrix: Water 5 Lab Sample ID: 580-87965-14 7 Matrix: Water

# Accreditation/Certification Summary

Client: Farallon Consulting LLC Project/Site: BNSF-Skykomish

#### Laboratory: Eurofins TestAmerica, Seattle

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Vashington	State Program	10	C553	02-17-20
The following analytes a	re included in this report, but the laboratory i	not certified by the gover	ning authority. This list may	include analytes for which
The following analytes a the agency does not off	re included in this report, but the laboratory i r certification.	not certified by the gover	ning authority. This list may	include analytes for which

# Sample Summary

Client: Farallon Consulting LLC Project/Site: BNSF-Skykomish

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-87965-1	S-W-43-072519	Water	07/25/19 11:25	07/27/19 10:00
580-87965-2	EW-1-072519	Water	07/25/19 11:30	07/27/19 10:00
580-87965-3	GW-1-072519	Water	07/25/19 12:20	07/27/19 10:00
580-87965-4	PZ-8-072519	Water	07/25/19 12:30	07/27/19 10:00
580-87965-5	GW-2-072519	Water	07/25/19 13:12	07/27/19 10:00
580-87965-6	PZ-7S-072519	Water	07/25/19 13:22	07/27/19 10:00
580-87965-7	S2-BD-072519	Water	07/25/19 14:35	07/27/19 10:00
580-87965-8	S2-BU-072519	Water	07/25/19 14:42	07/27/19 10:00
580-87965-9	WG-EV-072519	Water	07/25/19 14:35	07/27/19 10:00
580-87965-10	S2-AD-072519	Water	07/25/19 15:04	07/27/19 10:00
580-87965-11	S2-AU-072519	Water	07/25/19 15:05	07/27/19 10:00
580-87965-12	WG-WV-072519	Water	07/25/19 15:13	07/27/19 10:00
580-87965-13	FWG-EV-072519	Water	07/25/19 15:33	07/27/19 10:00
580-87965-14	FWG-WV-072519	Water	07/25/19 15:38	07/27/19 10:00

	1			LA	BORAT	ORY IN	ORMAT	ON				LAB	VORK OR	DER:	Loc: 580
BNSF	Laboratory:							Project Ma	anager:					SHIPMENT INFORM	87965
RAILWAY	Address:							Phone:				Shipn	ient Metho	d:	•
CHAIN OF CUSTODY	City/State/ZiP:							Fax:				Track	ing Numbe	r:	_
BNSF PROJECT INFORMATION	Project State of	l Origin:					C	ONSULT	ANT INF	ORMATIO	N	Projec	i Number:	683-067	
BNSF Project Number: 683-067	Project City:	Skykom	ish		Сотралу	Fa	val	3 M I	(on:	Sulling	γ	Projec	t Manager:	Pote Kalyston	1
BNSF Project Name: BNSF-SKLAKOWS	, Л				Address:	G-	15 5	14 A	UE ,	NW		Email:	Phing	stonefunction	ensylling.com
BNSF Contact:	BNSF Work Ore	der No.:			City/Slate	^{ZIP:}	5500	iwh	(WA	F- 6	98027	Phone	425	-295-0820 Fax	
TURNAROUND TIME	a	ELIVERABLES	[	Other De	liverabies	?				METHO	DDS FOR /	' VSIS			
1-day Rush 5- to 8-day Rush	BNSF St	andard (Level II)										herm ID: 5		1	
2-day Rush Standard 10-Day	t.evel III			EDD Rec	ą. Formati	,					' Pac	hing	Z Cor:	4.5	
🔀 3-day Rush 🔄 Olher	Level IV							X			Cust Riv	Seal: 1	7	" Unc: 4 C	
SAN	WPLE INFORM	ATION						Ψ.				ce, Ce, De	io-	FedEx:	~ ~
		Samp	le Collection		Filtered	Туре		4					one	Lab Con	-1
Sample Identification	Containers	Date	Time	Sampler	Y/N	(Comp/ Grab)	Matrix	N N						Other:	LAB USE
5-W-43- 072519	2	7/25/19	u25		N	6	W	×.							
EW-1-072519	r	ſ	1130		ſ	(	1	X			Th	erm. ID: 5	Cor	12:	
6W-1-072519			1220					K			Co	oler Dsc:	5	Unc: [-5	
P7-8-072519			1230					X			Cus	st. Seal: Ves	<u> </u>	FedEx: UPS:	·
GW-2-072519			1312					X			Blue	e Ice, Key Dry	. <u>None</u>	Lab Cour:	·
P2-75-072519			1222					X						Other: C.D	
52- AD-072519			1435					X							
52-AU-072519			1442					X			— Thern Cooler	$\frac{1111}{1000} \frac{1}{2}$	Cor: <u>4</u> .	<u>6</u> Unc: <u>4-7</u>	0
WG-EV-072519			1435					X			Packin	ıg: <u>177</u>	······	FedEx:	
1 32- AD-072519			1504					X			Cust. 8	eal: YesNo		UPS:	
- 52-AU-072519			1505		1			X			- Ditte Ici	e, Wet, Dry, N	one	Other:	-
" W/3-WV-072519			1513		1			X		$\mathbb{Z}$					
5 FW3-EV-072519			1533					X							······································
4 EWG-WV-072319	L		1538		1	T		Ŕ						E 1 jaho kan mani ang kan mangangan kana kana kan	A A A A A A A A A A A A A A A A A A A A
15															
Relinquished By:	Date/Time:	7/25/190150	Received By:					• •		Date/Time:		Comments ar	- -		
Relinquished By:	Date/Time:	27/100100	Repeived By:	Att	tes					727.	19 1000	기	5	530-87965 Chain of C	ustody
Relinquished By:	Date/Time:	-// -//	Received By	1	<del> </del>	·				Date/Time:					
Received by Laboratory:	Date/Time:		Lab Remarks:							Lab: Custody	Intact?	Custody Seal No.		BNSF COC 1	10

8

9

Client: Farallon Consulting LLC

#### Login Number: 87965 List Number: 1

Creator: Hobbs, Kenneth F

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td></td>	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Job Number: 580-87965-1

List Source: Eurofins TestAmerica, Seattle

# 🛟 eurofins

# Environment Testing TestAmerica

# **ANALYTICAL REPORT**

### Eurofins TestAmerica, Seattle 5755 8th Street East Tacoma, WA 98424 Tel: (253)922-2310

# Laboratory Job ID: 580-88597-1

Client Project/Site: BNSF Skykomish Ground Water

# For:

Farallon Consulting LLC 975 5th Avenue NW Suite 100 Issaquah, Washington 98027

Attn: Peter Kingston

Knitche D. allen

Authorized for release by: 8/30/2019 5:12:16 PM

Kristine Allen, Manager of Project Management (253)248-4970 kristine.allen@testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



# **Table of Contents**

Cover Page	1
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Client Sample Results	5
QC Sample Results	19
Chronicle	20
Certification Summary	23
Sample Summary	24
Chain of Custody	25
Receipt Checklists	26

#### Job ID: 580-88597-1

#### Laboratory: Eurofins TestAmerica, Seattle

Narrative

Job Narrative 580-88597-1

**Case Narrative** 

#### Comments

No additional comments.

#### Receipt

The samples were received on 8/21/2019 12:50 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 0.5° C, 0.6° C and 2.0° C.

#### **Receipt Exceptions**

The container labels for the following sample did not match the information listed on the Chain-of-Custody (COC): PZ-8-082019 (580-88597-8). The container labels list the sampling time 12:28, while the COC lists 11:50. The sample is logged in per COC.

One hydrochloric acid preserved amber for the following sample was received broken: PZ-8-082019 (580-88597-8).

#### GC Semi VOA

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

#### **Organic Prep**

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

# **Definitions/Glossary**

#### Client: Farallon Consulting LLC Project/Site: BNSF Skykomish Ground Water

Glossary

Job ID: 580-88597-1

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10

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

# Client Sample ID: S2-BD-082019

Date Collected: 08/20/19 10:36 Date Received: 08/21/19 12:50

– Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)											
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac		
#2 Diesel (C10-C24)	ND		0.062	0.062	mg/L		08/28/19 10:15	08/29/19 13:52	1		
Motor Oil (>C24-C36)	ND		0.091	0.091	mg/L		08/28/19 10:15	08/29/19 13:52	1		
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac		
o-Terphenyl	97		50 - 150				08/28/19 10:15	08/29/19 13:52	1		

Job ID: 580-88597-1

Lab Sample ID: 580-88597-1

Matrix: Water

5

# Client Sample ID: S2-BU-082019

Date Collected: 08/20/19 11:05 Date Received: 08/21/19 12:50

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac		
#2 Diesel (C10-C24)	0.098		0.062	0.062	mg/L		08/28/19 10:15	08/29/19 14:12	1		
Motor Oil (>C24-C36)	ND		0.091	0.091	mg/L		08/28/19 10:15	08/29/19 14:12	1		
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac		
o-Terphenyl	108		50 - 150				08/28/19 10:15	08/29/19 14:12	1		

8/30/2019

#### Lab Sample ID: 580-88597-2 Matrix: Water

Matrix. Water

#### Client Sample ID: EW1-082019 Date Collected: 08/20/19 11:15

Date Received: 08/21/19 12:50

- Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)												
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac			
#2 Diesel (C10-C24)	ND		0.062	0.062	mg/L		08/28/19 10:15	08/29/19 14:32	1			
Motor Oil (>C24-C36)	ND		0.091	0.091	mg/L		08/28/19 10:15	08/29/19 14:32	1			
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac			
o-Terphenyl	102		50 - 150				08/28/19 10:15	08/29/19 14:32	1			

Matrix: Water

Job ID: 580-88597-1

Lab Sample ID: 580-88597-3

#### Client Sample ID: 5-W-43-082019 Date Collected: 08/20/19 11:18

Date Received: 08/21/19 12:50

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)												
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed				
#2 Diesel (C10-C24)	ND		0.062	0.062	mg/L		08/28/19 10:15	08/29/19 14:53				

o-Terphenyl	97	50 - 150		08/28/19 10:15	08/29/19 14:53	1
Surrogate	%Recovery Qualifier	Limits		Prepared	Analyzed	Dil Fac
Motor Oil (>C24-C36)	ND	0.091	0.091 mg/L	08/28/19 10:15	08/29/19 14:53	1
	NB	0.002	0.002 mg/E	00/20/10 10.10	00/20/10 11:00	

Lab Sample ID: 580-88597-4 Matrix: Water

Job ID: 580-88597-1

Dil Fac

1 1

# Client Sample ID: S2-AD-082019

Date Collected: 08/20/19 11:35 Date Received: 08/21/19 12:50

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)											
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac		
#2 Diesel (C10-C24)	ND		0.062	0.062	mg/L		08/28/19 10:15	08/29/19 15:13	1		
Motor Oil (>C24-C36)	ND		0.091	0.091	mg/L		08/28/19 10:15	08/29/19 15:13	1		
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac		
o-Terphenyl	107		50 - 150				08/28/19 10:15	08/29/19 15:13	1		

Job ID: 580-88597-1

Lab Sample ID: 580-88597-5

5

Matrix: Water

# Client Sample ID: S2-AU-082019

Date Collected: 08/20/19 12:05 Date Received: 08/21/19 12:50

- Method: NWTPH-Dx - North	west - Semi-Volatile	Petroleum	Products (GC)	)					
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062	0.062	mg/L		08/28/19 10:15	08/29/19 15:33	1
Motor Oil (>C24-C36)	ND		0.091	0.091	mg/L		08/28/19 10:15	08/29/19 15:33	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	99		50 - 150				08/28/19 10:15	08/29/19 15:33	1

8/30/2019

Eurofins TestAmerica, Seattle

Matrix: Water

Job ID: 580-88597-1

Lab Sample ID: 580-88597-6

#### Client Sample ID: GW-1-082019 Date Collected: 08/20/19 12:17

Date Received: 08/21/19 12:50

Method: NWTPH-Dx - North	west - Semi-Volatile	Petroleum	Products (GC)	1					
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062	0.062	mg/L		08/28/19 10:15	08/29/19 15:53	1
Motor Oil (>C24-C36)	ND		0.091	0.091	mg/L		08/28/19 10:15	08/29/19 15:53	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	104		50 - 150				08/28/19 10:15	08/29/19 15:53	1

Job ID: 580-88597-1

Lab Sample ID: 580-88597-7

#### Client Sample ID: PZ-8-082019 Date Collected: 08/20/19 11:50

Date Received: 08/21/19 12:50

Method: NWTPH-Dx - Nort	hwest - Semi-Volatile	Petroleum	Products (GC)	)		_			
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062	0.062	mg/L		08/28/19 10:15	08/29/19 16:33	1
Motor Oil (>C24-C36)	ND		0.091	0.091	mg/L		08/28/19 10:15	08/29/19 16:33	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	99		50 - 150				08/28/19 10:15	08/29/19 16:33	1

Job ID: 580-88597-1 Lab Sample ID: 580-88597-8

1

Matrix: Water

#### Client Sample ID: WG-EV-082019 Date Collected: 08/20/19 14:05

Date Received: 08/21/19 12:50

Method: NWTPH-Dx - Northwest - Analyte	Semi-Volatile Result	Petroleum Qualifier	Products (GC) RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.39		0.062	0.062	mg/L		08/28/19 10:15	08/29/19 16:54	1
Motor Oil (>C24-C36)	0.23		0.091	0.091	mg/L		08/28/19 10:15	08/29/19 16:54	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	95		50 - 150				08/28/19 10:15	08/29/19 16:54	1

Lab Sample ID: 580-88597-9

Job ID: 580-88597-1

Matrix: Water

Date Received: 08/21/19 12:50

Method: NWTPH-Dx - North	west - Semi-Volatile	Petroleum	<b>Products (GC)</b>	1					
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.27		0.062	0.062	mg/L		08/28/19 10:15	08/29/19 17:14	1
Motor Oil (>C24-C36)	0.50		0.091	0.091	mg/L		08/28/19 10:15	08/29/19 17:14	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	81		50 - 150				08/28/19 10:15	08/29/19 17:14	1

Lab Sample ID: 580-88597-10

Matrix: Water

5

Job ID: 580-88597-1

#### Client Sample ID: PZ-7S-082019 Date Collected: 08/20/19 14:29

Date Received: 08/21/19 12:50

Method: NWTPH-Dx - North	west - Semi-Volatile	Petroleum	Products (GC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062	0.062	mg/L		08/28/19 10:15	08/29/19 17:34	1
Motor Oil (>C24-C36)	0.12		0.091	0.091	mg/L		08/28/19 10:15	08/29/19 17:34	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	100		50 _ 150				08/28/19 10:15	08/29/19 17:34	1

300 ID. 300-00397

Matrix: Water

5

Lab Sample ID: 580-88597-11

#### Client Sample ID: GW-2-082019 Date Collected: 08/20/19 14:30

Date Received: 08/21/19 12:50

Method: NWTPH-Dx - Northwest -	Semi-Volatile	Petroleu	m Products (O	SC)			
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared
#2 Diesel (C10-C24)	ND		0.063	0.063	mg/L		08/28/19 10:15

#2 Diesel (C10-C24) Motor Oil (>C24-C36)	ND ND	0.063 0.093	0.063 0.093	mg/L mg/L	08/28/19 10:15 08/28/19 10:15	08/29/19 17:54 08/29/19 17:54	1 1
Surrogate o-Terphenyl	%Recovery Qualifier 95	Limits			Prepared 08/28/19 10:15	Analyzed 08/29/19 17:54	Dil Fac

5

Job ID: 580-88597-1

Matrix: Water

Dil Fac

Lab Sample ID: 580-88597-12

Analyzed

8/30/2019

### Client Sample ID: FWG-EV-082019 Date Collected: 08/20/19 15:08

Date Received: 08/21/19 12:50

Method: NWTPH-Dx - Northwe	est - Semi-Volatile Result	Petroleum Qualifier	Products (GC) RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.073		0.062	0.062	mg/L		08/28/19 10:15	08/29/19 18:14	1
Motor Oil (>C24-C36)	0.15		0.091	0.091	mg/L		08/28/19 10:15	08/29/19 18:14	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	99		50 - 150				08/28/19 10:15	08/29/19 18:14	1

Job ID: 580-88597-1

Lab Sample ID: 580-88597-13

Matrix: Water

Job ID: 580-88597-1

### Client Sample ID: FWG-WV-082019 Date Collected: 08/20/19 15:09

Date Received: 08/21/19 12:50

#### Lab Sample ID: 580-88597-14 Matrix: Water

Method: NWTPH-Dx - Northy	vest - Semi-Volatile	Petroleum	Products (GC)	)					
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062	0.062	mg/L		08/28/19 10:15	08/29/19 18:34	1
Motor Oil (>C24-C36)	0.11		0.091	0.091	mg/L		08/28/19 10:15	08/29/19 18:34	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	93		50 - 150				08/28/19 10:15	08/29/19 18:34	1

Lab Sample ID: MB 580-309550/1-A

Matrix: Water

Analysis Batch: 309725

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

# Client Sample ID: Method Blank Prep Type: Total/NA Prep Batch: 309550 5 repared Analyzed Dil Fac

-	м	в мв										
Analyte	Resu	It Qualifier	RL		MDL	Unit		D	Prepared	Analyze	ed	Dil Fac
#2 Diesel (C10-C24)	N	D	0.065	(	0.065	mg/L		08	/28/19 10:14	08/29/19 1	2:52	1
Motor Oil (>C24-C36)	Ν	D	0.096	(	0.096	mg/L		80	/28/19 10:14	08/29/19 1	2:52	1
	м	B MB										
Surrogate	%Recover	ry Qualifier	Limits						Prepared	Analyze	ed	Dil Fac
o-Terphenyl	<u>c</u>	98	50 - 150					08	8/28/19 10:14	08/29/19 1	12:52	1
Lab Sample ID: LCS 580-3095	50/2-A							Clie	nt Sample	ID: Lab Co	ontrol S	ample
Matrix: Water										Prep Ty	ype: To	otal/NA
Analysis Batch: 309725										Prep B	atch: 3	309550
-			Spike	LCS	LCS					%Rec.		
Analyte			Added	Result	Qua	lifier	Unit		%Rec	Limits		
#2 Diesel (C10-C24)	·		0.500	0.437			mg/L		87	50 - 120		
Motor Oil (>C24-C36)			0.500	0.569			mg/L		114	64 ₋ 120		
	LCS LO	cs										
Surrogate	%Recovery Q	ualifier	Limits									
o-Terphenyl	91		50 - 150									
Lab Sample ID: LCSD 580-309	9550/3-A						Cli	ient Sa	mple ID: I	ab Control	Samp	le Dup
Matrix: Water										Prep Ty	ype: To	tal/NA
Analysis Batch: 309725										Prep E	Batch: 3	309550
-			Spike	LCSD	LCS	D				%Rec.		RPD
Analyte			Added	Result	Qua	lifier	Unit	0	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)			0.500	0.410			mg/L		82	50 ₋ 120	6	26
Motor Oil (>C24-C36)			0.500	0.544			mg/L		109	64 - 120	5	24
	LCSD LO	CSD										
Surrogate	%Recovery Q	ualifier	Limits									
o-Terphenyl	89		50 - 150									

Matrix: Water

Matrix: Water

Matrix: Water

Matrix: Water

Matrix: Water

Lab Sample ID: 580-88597-1

Lab Sample ID: 580-88597-3

Lab Sample ID: 580-88597-4

Lab Sample ID: 580-88597-5

Lab Sample ID: 580-88597-6

Client Sample ID: S2-BD-082019 Date Collected: 08/20/19 10:36 Date Received: 08/21/19 12:50

Batch	Batch		Dilution	Batch	Prepared		
Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Prep	3510C			309550	08/28/19 10:15	T1L	TAL SEA
Analysis	NWTPH-Dx		1	309725	08/29/19 13:52	JCM	TAL SEA
le ID: S2-BU	-082019					L	ab Sample ID: 580-88597
	Type Prep Analysis	Batch Batch   Type Method   Prep 3510C   Analysis NWTPH-Dx	Batch Batch   Type Method   Prep 3510C   Analysis NWTPH-Dx	Figure Method Run Factor   Prep 3510C 1   Analysis NWTPH-Dx 1	Free Method Run Factor Number   Analysis NWTPH-Dx 1 309725	BatchBatchDilutionBatchPreparedTypeMethodRunFactorNumberor AnalyzedPrep3510C30955008/28/19 10:15AnalysisNWTPH-Dx130972508/29/19 13:52Ie ID: S2-BU-082019	FigureMethodRunFactorNumberor AnalyzedAnalystPrep3510C130955008/28/19 10:15T1LAnalysisNWTPH-Dx130972508/29/19 13:52JCMIe ID: S2-BU-082019

#### Date Collected: 08/20/19 11:05 Date Received: 08/21/19 12:50

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			309550	08/28/19 10:15	T1L	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	309725	08/29/19 14:12	JCM	TAL SEA

#### Client Sample ID: EW1-082019

Date Collected: 08/20/19 11:15

Date Received: 08/21/19 12:50

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			309550	08/28/19 10:15	T1L	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	309725	08/29/19 14:32	JCM	TAL SEA

#### Client Sample ID: 5-W-43-082019

Date Collected: 08/20/19 11:18

Date Received: 08/21/19 12:50

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C	·		309550	08/28/19 10:15	T1L	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	309725	08/29/19 14:53	JCM	TAL SEA

# Client Sample ID: S2-AD-082019

Date Collected: 08/20/19 11:35 Date Received: 08/21/19 12:50

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			309550	08/28/19 10:15	T1L	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	309725	08/29/19 15:13	JCM	TAL SEA

#### Client Sample ID: S2-AU-082019 Date Collected: 08/20/19 12:05 Date Received: 08/21/19 12:50

	Batch	Batch		Dilution	Batch	Prepared		
Ргер Туре	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			309550	08/28/19 10:15	T1L	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	309725	08/29/19 15:33	JCM	TAL SEA

Dilution

Factor

Dilution

Factor

1

1

Run

Run

Batch

Number

309550

309725

Batch

Number

309550

309725

Prepared

or Analyzed

08/28/19 10:15

08/29/19 15:53

Prepared

or Analyzed

08/28/19 10:15

08/29/19 16:33

Analyst

Analyst

T1L

JCM

T1L

JCM

Lab

TAL SEA

TAL SEA

Batch

Туре

Prep

Analysis

Batch

Туре

Prep

Analysis

Batch

Method

3510C

Batch

Method

3510C

NWTPH-Dx

NWTPH-Dx

Client Sample ID: GW-1-082019

Client Sample ID: PZ-8-082019

Date Collected: 08/20/19 11:50

Date Received: 08/21/19 12:50

Date Collected: 08/20/19 12:17

Date Received: 08/21/19 12:50

Prep Type

Total/NA

Total/NA

Prep Type

Total/NA

Total/NA

Matrix: Water

Lab Sample ID: 580-88597-7

# Lab Sample ID: 580-88597-8 Matrix: Water t Lab TAL SEA TAL SEA Lab Sample ID: 580-88597-9 Matrix: Water

Lab Sample ID: 580-88597-10

Lab Sample ID: 580-88597-11

Lab Sample ID: 580-88597-12

Matrix: Water

Matrix: Water

Matrix: Water

Date Collected: 08/20/19 14:05

Client Sample ID: WG-EV-082019

Date	Rece	ived:	08/21/	/ <b>19</b> ·	12:50

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			309550	08/28/19 10:15	T1L	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	309725	08/29/19 16:54	JCM	TAL SEA

#### Client Sample ID: WG-WV-082019

Date Collected: 08/20/19 14:35

Date Received: 08/21/19 12:50

	Batch	Batch		Dilution	Batch	Prepared		
Ргер Туре	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			309550	08/28/19 10:15	T1L	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	309725	08/29/19 17:14	JCM	TAL SEA

#### Client Sample ID: PZ-7S-082019 Date Collected: 08/20/19 14:29

Date Received: 08/21/19 12:50

_	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			309550	08/28/19 10:15	T1L	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	309725	08/29/19 17:34	JCM	TAL SEA

#### Client Sample ID: GW-2-082019 Date Collected: 08/20/19 14:30 Date Received: 08/21/19 12:50

_	Batch	Batch		Dilution	Batch	Prepared		
Ргер Туре	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			309550	08/28/19 10:15	T1L	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	309725	08/29/19 17:54	JCM	TAL SEA

# 2 3 4 5 6 7 8

Matrix: Water

#### Lab Sample ID: 580-88597-14 Matrix: Water

Lab Sample ID: 580-88597-13

#### Client Sample ID: FWG-EV-082019 Date Collected: 08/20/19 15:08 Date Received: 08/21/19 12:50

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			309550	08/28/19 10:15	T1L	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	309725	08/29/19 18:14	JCM	TAL SEA

#### Client Sample ID: FWG-WV-082019 Date Collected: 08/20/19 15:09 Date Received: 08/21/19 12:50

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			309550	08/28/19 10:15	T1L	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	309725	08/29/19 18:34	JCM	TAL SEA

#### Laboratory References:

TAL SEA = Eurofins TestAmerica, Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310
## **Accreditation/Certification Summary**

Client: Farallon Consulting LLC Project/Site: BNSF Skykomish Ground Water

#### Job ID: 580-88597-1

#### Laboratory: Eurofins TestAmerica, Seattle

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-024	01-19-22
Alaska (UST)	State Program	17-024	01-19-20
ANAB	Dept. of Defense ELAP	L2236	01-19-22
ANAB	DoD	L2236	01-19-22
ANAB	ISO/IEC 17025	L2236	01-19-22
ANAB	ISO/IEC 17025	L2236	01-19-22
California	State	2901	11-05-19
California	State Program	2901	11-05-19
Montana (UST)	State	NA	04-13-21
Montana (UST)	State Program	N/A	04-30-20
Oregon	NELAP	WA100007	11-05-19
Oregon	NELAP	WA100007	11-05-19
US Fish & Wildlife	Federal	LE058448-0	07-31-20
US Fish & Wildlife	US Federal Programs	058448	07-31-20
USDA	Federal	P330-14-00126	02-10-20
USDA	US Federal Programs	P330-17-00039	02-10-20
Washington	State	C553	02-17-20
Washington	State Program	C553	02-17-20

## Sample Summary

#### Client: Farallon Consulting LLC Project/Site: BNSF Skykomish Ground Water

Job	ID:	580-88597-1
000	·D.	000 00007 1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-88597-1	S2-BD-082019	Water	08/20/19 10:36	08/21/19 12:50
580-88597-2	S2-BU-082019	Water	08/20/19 11:05	08/21/19 12:50
580-88597-3	EW1-082019	Water	08/20/19 11:15	08/21/19 12:50
580-88597-4	5-W-43-082019	Water	08/20/19 11:18	08/21/19 12:50
580-88597-5	S2-AD-082019	Water	08/20/19 11:35	08/21/19 12:50
580-88597-6	S2-AU-082019	Water	08/20/19 12:05	08/21/19 12:50
580-88597-7	GW-1-082019	Water	08/20/19 12:17	08/21/19 12:50
580-88597-8	PZ-8-082019	Water	08/20/19 11:50	08/21/19 12:50
580-88597-9	WG-EV-082019	Water	08/20/19 14:05	08/21/19 12:50
580-88597-10	WG-WV-082019	Water	08/20/19 14:35	08/21/19 12:50
580-88597-11	PZ-7S-082019	Water	08/20/19 14:29	08/21/19 12:50
580-88597-12	GW-2-082019	Water	08/20/19 14:30	08/21/19 12:50
580-88597-13	FWG-EV-082019	Water	08/20/19 15:08	08/21/19 12:50
580-88597-14	FWG-WV-082019	Water	08/20/19 15:09	08/21/19 12:50

	Laboratory			Ĺ	ABORA	TORY I	NFORMA	TION				LAB WORK ORDER: 88574		
BNSF	Addronau	Antrose Antrope Antrose Antrope Antrop					Project Manag	er:			SHIPMENT INFORMATION			
RAILWAY	Address:	Phone:								Shipment Method:				
CHAIN OF CUSTODY	City/State/2IF	City/State/ZIP:					Fax:				Tracking Number:			
BNSF PROJECT INFORMATION	Project State	Project State of Origin:					(	CONSULTANT	INFORMAT	ION		Project Number: 683-667		
NSF Project Number: 683-067	Project City:	Skykomi	54		Compai	ny: Far	allow	Consug	413			Project Manager: Peter Kingston		
NSF Project Name: BNSF Skykomish Mo	nthly				Address	975	5 574	AUE N	w			Email: Plingston & farally consulting		
ISF Contact:	BNSF Work C	Order No.:			City/Sta	ile/ZIP: 7	55 294	ah in.	4 95	027		Phone: 425 295_0800 Fax:		
TURNAROUND TIME		DELIVERABLES		Other D	eliverable	∋s?			MET	HODS FOR A	NALYSIS			
1-day Rush 5- to 8-day Rush	BNSF (	Standard (Level II)												
2-day Rush Standard 10-Day	Level II	I		EDD Re	eq, Forma	it?								
3-day Rush [ Other	Level IV	/						×				530, 88597, Chain of Custody		
S,	AMPLE INFORM	ATION												
Semple Identification	Containers	Sam	ole Collection		Filtered	Type								
	Containers	Date	Time	Sampler	r Y/N	(Comp Grab)	Matrix	MN						
52-BD-052019	2	8/20/19	1036	GP	N	6	W	X				CONIMENTS LADUS		
52-BU-082019	2	6/20/19	1105	6P	N	6	14	x						
EW1-082019	2	8/20/19	115		N	6	W	K						
5-W-43-082019	2	8/20/19	1000		Ň	6	W	$\frac{1}{x}$						
52-4D-082019	2	0/20/19	1135		N	6	W	X						
2-20-082019	2	8/20/19	1205		N	6	W	x						
SW-1-082019	2	8/20/19	1217		N	6	W	X						
P2-8-082019	2	8/20/19	1150		N	G	w.	x				T25 0.6 . 100 0.5		
WG-EV-082019	z	5/2019	1405		~	6	in/	N N			-	Therm. ID: + S Cor: Cite.		
WG-WV-082019	2	6100/19	1435	1	N	6	14/	x				Packing: 3.6bb FedEx:		
PZ-75-082019	2	8/m/ia	1429		N	6	w/	~				Cust. Seal: Yes No Lab Cour: Z		
GW-2-082019	2	8/20/18	1420	-	· \rightarrow ·	6	1.1	X				Blue Ice Wet Dry, None Other:		
FWG-EV-082019	2	sholia	1508		N	6	141	<del>x</del>						
FWG - WV-082019	2	8/20/19	1509	1	N	6	11/	X				Therm. ID. 18 Cor: 0.3 ° Unc:		
						<u> </u>						Cooler Dsc: FedEx: FedEx:		
iquished By:	Date/Time:	to 119/2 11.nn	Referred By:	Loll	L	SEM	The		Date/Time:	a 1257	Commer	nts ar Cust. Seal: Yes No Lab Cour:		
iquished By:	Date/Time:	× 1.1~ 1000	Received By:						Date/Time:	1 1230		Blue Ice, CD, Dry, None Other:		
quished By:	Date/Tane:		Received By:						Date/Time:		-			
sived by Laboratory.	Date/Time:	·····	Lab Remarks	<u></u>					Lab: Custod	ly Intact?	Custody Se	BINO. Therm. ID: 385 Cor: 2.0 ° Unc		
				DU					Yes	5 Ll No		Cooler Dsc: Log Birth FodEx:		

Client: Farallon Consulting LLC

#### Login Number: 88597 List Number: 1

Creator: Blankinship, Tom X

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	Refer to Job Narrative for details.
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	False	Refer to Job Narrative for details.
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Job Number: 580-88597-1

List Source: Eurofins TestAmerica, Seattle

# 🛟 eurofins

# Environment Testing TestAmerica

## **ANALYTICAL REPORT**

### Eurofins TestAmerica, Seattle 5755 8th Street East Tacoma, WA 98424 Tel: (253)922-2310

## Laboratory Job ID: 580-89413-1

Client Project/Site: BNSF Skykomish Ground Water

## For:

..... Links

Review your project results through

**Total** Access

**Have a Question?** 

Ask-

The

www.testamericainc.com

Visit us at:

Expert

Farallon Consulting LLC 975 5th Avenue NW Suite 100 Issaquah, Washington 98027

Attn: Peter Kingston

Knittene D. allen

Authorized for release by: 10/4/2019 4:29:57 PM

Kristine Allen, Manager of Project Management (253)248-4970 kristine.allen@testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

# **Table of Contents**

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### Job ID: 580-89413-1

#### Laboratory: Eurofins TestAmerica, Seattle

#### Narrative

Job Narrative 580-89413-1

**Case Narrative** 

#### Comments

No additional comments.

#### Receipt

The samples were received on 9/20/2019 2:15 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were -0.2° C and 1.0° C.

#### **Receipt Exceptions**

The container label for Sample 580-89413-6 did not match the information listed on the Chain-of-Custody (COC): The Sample label listed EW-100-091919, while the COC listed EW-10-091919.

#### GC Semi VOA

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

#### **Organic Prep**

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

## **Definitions/Glossary**

#### Client: Farallon Consulting LLC Project/Site: BNSF Skykomish Ground Water

Percent Recovery

Glossary Abbreviation

¤ %R Job ID: 580-89413-1

2 3 4 5 6 7 8 9	
3 4 5 6 7 8 9	
4 5 6 7 8 9	
5 6 7 8 9	4
6 7 8 9	5
7 8 9	
8 9	
9	8
	9

Eurofins TestAmerica, Seattle

Contains Free Liquid
Contains No Free Liquid
Duplicate Error Ratio (normalized absolute difference)
Dilution Factor
Detection Limit (DoD/DOE)
Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
Decision Level Concentration (Radiochemistry)
Estimated Detection Limit (Dioxin)
Limit of Detection (DoD/DOE)
Limit of Quantitation (DoD/DOE)
Minimum Detectable Activity (Radiochemistry)
Minimum Detectable Concentration (Radiochemistry)
Method Detection Limit
Minimum Level (Dioxin)
Not Calculated
Not Detected at the reporting limit (or MDL or EDL if shown)
Practical Quantitation Limit
Quality Control
Relative Error Ratio (Radiochemistry)
Reporting Limit or Requested Limit (Radiochemistry)
Relative Percent Difference, a measure of the relative difference between two points
Toxicity Equivalent Factor (Dioxin)
Toxicity Equivalent Quotient (Dioxin)

These commonly used abbreviations may or may not be present in this report. Listed under the "D" column to designate that the result is reported on a dry weight basis

#### Client Sample ID: GW-1-091919 Date Collected: 09/19/19 08:20

Date Received: 09/20/19 14:15

Method: NWTPH-Dx - Northwest -	Semi-Volatile Petro	eleum Products (	GC)		
Analyte	Result Qualif	er RL	MDL	Unit	D

#2 Diesel (C10-C24)	ND	0.062	0.062 mg/L	10/02/19 12:48	10/03/19 15:37	1
Motor Oil (>C24-C36)	ND	0.091	0.091 mg/L	10/02/19 12:48	10/03/19 15:37	1
Surrogate	%Recovery Qualifier	Limits		Prepared	Analyzed	Dil Fac

Lab Sample ID: 580-89413-1 Matrix: Water

Dil Fac

Job ID: 580-89413-1

Analyzed

Prepared

Eurofins TestAmerica, Seattle

#### Client Sample ID: 5-W-43-091919 Date Collected: 09/19/19 08:22

Date Received: 09/20/19 14:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062	0.062	mg/L		10/02/19 12:48	10/03/19 15:57	1
Motor Oil (>C24-C36)	ND		0.092	0.092	mg/L		10/02/19 12:48	10/03/19 15:57	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	83		50 - 150				10/02/19 12:48	10/03/19 15:57	1

Job ID: 580-89413-1

#### Lab Sample ID: 580-89413-2 Matrix: Water

vialrix. vvaler

5

#### Client Sample ID: PZ-75-091919 Date Collected: 09/19/19 08:24

Date Received: 09/20/19 14:15

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)
----------------------------------------------------------------------

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062	0.062	mg/L		10/02/19 12:48	10/03/19 16:17	1
Motor Oil (>C24-C36)	ND		0.091	0.091	mg/L		10/02/19 12:48	10/03/19 16:17	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	59		50 - 150				10/02/19 12:48	10/03/19 16:17	1

Job ID: 580-89413-1

Matrix: Water

Lab Sample ID: 580-89413-3

#### Client Sample ID: PZ-8-091919 Date Collected: 09/19/19 09:20

Date Received: 09/20/19 14:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062	0.062	mg/L		10/02/19 12:48	10/03/19 16:37	1
Motor Oil (>C24-C36)	ND		0.091	0.091	mg/L		10/02/19 12:48	10/03/19 16:37	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	73		50 - 150				10/02/19 12:48	10/03/19 16:37	1

Job ID: 580-89413-1

Matrix: Water

5

Lab Sample ID: 580-89413-4

#### Client Sample ID: EW-1-091919 Date Collected: 09/19/19 09:21

Date Received: 09/20/19 14:15

Method: NWTPH-Dx - Northwe	st - Semi-Volatile	e Petroleum	Products (GC)	)				
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed
#2 Diesel (C10-C24)	ND		0.062	0.062	mg/L		10/02/19 12:48	10/03/19 16:58
Motor Oil (>C24-C36)	ND		0.091	0.091	mg/L		10/02/19 12:48	10/03/19 16:58
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed
o-Terphenyl	84		50 _ 150				10/02/19 12:48	10/03/19 16:58

Job ID: 580-89413-1

Matrix: Water

Dil Fac

Dil Fac

1

1

1

Lab Sample ID: 580-89413-5

#### Client Sample ID: EW-10-091919 Date Collected: 09/19/19 09:25

Date Received: 09/20/19 14:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062	0.062	mg/L		10/02/19 12:48	10/03/19 17:18	1
Motor Oil (>C24-C36)	ND		0.091	0.091	mg/L		10/02/19 12:48	10/03/19 17:18	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	68		50 - 150				10/02/19 12:48	10/03/19 17:18	1

Job ID: 580-89413-1

## Lab Sample ID: 580-89413-6

Matrix: Water

5

#### Client Sample ID: GW-2-091919 Date Collected: 09/19/19 09:21

Date Received: 09/20/19 14:15

Method: NWTPH-Dx - Northwest -	Semi-Volatile	Petroleum	Products (GC)				
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared
#2 Diesel (C10-C24)	ND		0.062	0.062	mg/L		10/02/19 12:48
Motor Oil (>C24-C36)	ND		0.091	0 091	ma/l		10/02/19 12:48

Motor Oil (>C24-C36)	ND		0.091	0.091	mg/L	10/02/19 12:48	10/03/19 17:38
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed
o-Terphenyl	71		50 - 150			10/02/19 12:48	10/03/19 17:38

Lab Sample ID: 580-89413-7

Analyzed 10/03/19 17:38

Eurofins TestAmerica, Seattle

680-89413-7 Matrix: Water

1

1

1

Dil Fac

#### Client Sample ID: WG-WV-091919 Date Collected: 09/19/19 10:09

Date Received: 09/20/19 14:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.24		0.062	0.062	mg/L		10/02/19 12:48	10/03/19 18:18	1
Motor Oil (>C24-C36)	0.14		0.091	0.091	mg/L		10/02/19 12:48	10/03/19 18:18	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	57		50 - 150				10/02/19 12:48	10/03/19 18:18	1

Job ID: 580-89413-1

## Lab Sample ID: 580-89413-8 Matrix: Water

5

Job ID: 580-89413-1

## Client Sample ID: FWG-WV-091919 Date Collected: 09/19/19 10:25

Date Received: 09/20/19 14:15

#### Lab Sample ID: 580-89413-9 Matrix: Water

Method: NWTPH-Dx - Northy	west - Semi-Volatile	Petroleum	Products (GC)	)					
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062	0.062	mg/L		10/02/19 12:48	10/03/19 18:38	1
Motor Oil (>C24-C36)	ND		0.091	0.091	mg/L		10/02/19 12:48	10/03/19 18:38	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	80		50 - 150				10/02/19 12:48	10/03/19 18:38	1

#### Client Sample ID: WG-EV-091919 Date Collected: 09/19/19 10:25

Date Received: 09/20/19 14:15

Method: NWTPH-Dx - Northv Analyte	v <mark>est - Semi-Volatile</mark> Result	Petroleum Qualifier	Products (GC) RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.47		0.062	0.062	mg/L		10/02/19 12:48	10/03/19 18:59	1
Motor Oil (>C24-C36)	0.23		0.091	0.091	mg/L		10/02/19 12:48	10/03/19 18:59	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	84		50 - 150				10/02/19 12:48	10/03/19 18:59	1

Lab Sample ID: 580-89413-10

Matrix: Water

#### Client Sample ID: FWG-EV-091919 Date Collected: 09/19/19 10:47

Date Received: 09/20/19 14:15

#### Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062	0.062	mg/L		10/02/19 12:48	10/03/19 19:19	1
Motor Oil (>C24-C36)	ND		0.091	0.091	mg/L		10/02/19 12:48	10/03/19 19:19	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	84		50 _ 150				10/02/19 12:48	10/03/19 19:19	1

Lab Sample ID: 580-89413-11

Job ID: 580-89413-1

Matrix: Water 5

#### Client Sample ID: S2-AU-091919 Date Collected: 09/19/19 11:15

Date Received: 09/20/19 14:15

Method: NWTPH-Dx - North	west - Semi-Volatile	Petroleum	Products (GC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062	0.062	mg/L		10/02/19 12:48	10/03/19 19:39	1
Motor Oil (>C24-C36)	ND		0.091	0.091	mg/L		10/02/19 12:48	10/03/19 19:39	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	58		50 _ 150				10/02/19 12:48	10/03/19 19:39	1

Lab Sample ID: 580-89413-12

Matrix: Water

Job ID: 580-89413-1

#### Client Sample ID: S2-AD-091919 Date Collected: 09/19/19 11:22

Date Received: 09/20/19 14:15

Method: NWTPH-Dx - Northv	vest - Semi-Volatile	Petroleum	Products (GC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062	0.062	mg/L		10/02/19 12:48	10/03/19 19:59	1
Motor Oil (>C24-C36)	ND		0.091	0.091	mg/L		10/02/19 12:48	10/03/19 19:59	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	88		50 - 150				10/02/19 12:48	10/03/19 19:59	1

10/4/2019

Job ID: 580-89413-1

Lab Sample ID: 580-89413-13

#### Client Sample ID: S2-BD-091919 Date Collected: 09/19/19 11:28

Date Received: 09/20/19 14:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac			
#2 Diesel (C10-C24)	ND		0.061	0.061	mg/L		10/02/19 12:48	10/03/19 20:19	1			
Motor Oil (>C24-C36)	ND		0.091	0.091	mg/L		10/02/19 12:48	10/03/19 20:19	1			
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac			
o-Terphenyl	85		50 - 150				10/02/19 12:48	10/03/19 20:19	1			

10/4/2019

#### Lab Sample ID: 580-89413-14 Matrix: Water

ALIA. WALCI

#### Client Sample ID: S2-BU-091919 Date Collected: 09/19/19 11:30

Date Received: 09/20/19 14:15

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)												
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac			
#2 Diesel (C10-C24)	0.42		0.062	0.062	mg/L		10/02/19 12:48	10/03/19 20:39	1			
Motor Oil (>C24-C36)	0.20		0.091	0.091	mg/L		10/02/19 12:48	10/03/19 20:39	1			
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac			
o-Terphenyl	87		50 - 150				10/02/19 12:48	10/03/19 20:39	1			

Lab Sample ID: 580-89413-15 Matrix: Water

Job ID: 580-89413-1

#### Client Sample ID: GW-20-091919 Date Collected: 09/19/19 16:30

Date Received: 09/20/19 14:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062	0.062	mg/L		10/02/19 12:48	10/03/19 21:00	1
Motor Oil (>C24-C36)	ND		0.091	0.091	mg/L		10/02/19 12:48	10/03/19 21:00	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	84		50 - 150				10/02/19 12:48	10/03/19 21:00	1

Job ID: 580-89413-1

Matrix: Water

2 Lab Sample ID: 580-89413-16

5

10/4/2019

Lab Sample ID: MB 580-313064/1-A

Lab Sample ID: LCS 580-313064/2-A

Matrix: Water

#2 Diesel (C10-C24)

Motor Oil (>C24-C36)

Analyte

Surrogate

Analyte

Surrogate

o-Terphenyl

o-Terphenyl

Matrix: Water

#2 Diesel (C10-C24)

Motor Oil (>C24-C36)

Analysis Batch: 313198

Analysis Batch: 313198

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

MB MB

MB MB

Result

ND

ND

85

%Recovery

LCS LCS

%Recovery Qualifier

74

Prep Type: Total/NA

Prep Batch: 313064

**Client Sample ID: Method Blank** 

#### Qualifier RL MDL Unit Prepared Analyzed Dil Fac D 10/02/19 12:47 10/03/19 14:36 0.065 0.065 mg/L 1 0.096 0.096 mg/L 10/02/19 12:47 10/03/19 14:36 1 Qualifier Limits Prepared Analyzed Dil Fac 50 - 150 10/02/19 12:47 10/03/19 14:36 1 **Client Sample ID: Lab Control Sample** Prep Type: Total/NA Prep Batch: 313064 LCS LCS Spike %Rec. Added Result Qualifier %Rec Limits Unit D 0.500 0.378 76 50 - 120 mg/L 0.500 0.506 101 mg/L 64 - 120 Limits 50 - 150

Lab Sample ID: LCSD 580-31 Matrix: Water Analysis Batch: 313198	13064/3-A					Clie	ent San	nple ID:	Lab Contro Prep T Prep I	I Sampl ype: To Batch: 3	e Dup tal/NA 13064
			Spike	LCSD	LCSD				%Rec.		RPD
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)			0.500	0.381		mg/L		76	50 - 120	1	26
Motor Oil (>C24-C36)			0.500	0.503		mg/L		101	64 - 120	1	24
	LCSD	LCSD									
Surrogate	%Recovery	Qualifier	Limits								
o-Terphenyl	73		50 - 150								

Client Sample ID: GW-1-091919

Date Collected: 09/19/19 08:20

Date Received: 09/20/19 14:15

Lab Sample ID: 580-89413-1

# Lab Sample ID: 580-89413-2 Matrix: Water

Matrix: Water

	Batch	Batch
Prep Type	Туре	Method
Total/NA	Prep	3510C
Total/NA	Analysis	NWTPH-Dx

#### Client Sample ID: 5-W-43-091919 Date Collected: 09/19/19 08:22 Date Received: 09/20/19 14:15

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			313064	10/02/19 12:48	PRO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	313198	10/03/19 15:57	ERZ	TAL SEA

Dilution

Factor

1

Run

Batch

Number

313064

313198

Prepared

or Analyzed

10/02/19 12:48

10/03/19 15:37

Analyst

PRO

ERZ

Lab

TAL SEA

TAL SEA

#### Client Sample ID: PZ-75-091919

Lab Sample ID: 580-89413-3 Matrix: Water

Lab Sample ID: 580-89413-4

Lab Sample ID: 580-89413-5

Lab Sample ID: 580-89413-6

Matrix: Water

Matrix: Water

Matrix: Water

#### Date Collected: 09/19/19 08:24 Date Received: 09/20/19 14:15

	Batch	Batch		Dilution	Batch	Prepared		
Ргер Туре	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			313064	10/02/19 12:48	PRO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	313198	10/03/19 16:17	ERZ	TAL SEA

## Client Sample ID: PZ-8-091919

## Date Collected: 09/19/19 09:20

Date Received: 09/20/19 14:15

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			313064	10/02/19 12:48	PRO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	313198	10/03/19 16:37	ERZ	TAL SEA

## Client Sample ID: EW-1-091919

Date Collected: 09/19/19 09:21 Date Received: 09/20/19 14:15

Γ	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep				313064	10/02/19 12:48	PRO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	313198	10/03/19 16:58	ERZ	TAL SEA

#### Client Sample ID: EW-10-091919 Date Collected: 09/19/19 09:25 Date Received: 09/20/19 14:15

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			313064	10/02/19 12:48	PRO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	313198	10/03/19 17:18	ERZ	TAL SEA

Client Sample ID: GW-2-091919

Lab Sample ID: 580-89413-7

Date Collected:	09/19/19 09:2	1							Matrix: Water
	53/20/13 14.1	v Detek		Dilleri		<b>D</b>			
Pren Tyne	Batch	Batch Method	Pun	Dilution	Batch	Prepared	Analvet	lah	
	Pren	35100	Kuli		313064	10/02/19 12:48		TAL SEA	
Total/NA	Analysis			1	313108	10/03/19 17:38	FR7	TAL SEA	
	Analysis	NWIFII-DX		I	515190	10/03/19 17.30	LNZ	TAL SLA	
Client Sampl	e ID: WG-W	V-091919					La	ab Sample II	D: 580-89413-8
Date Collected:	09/19/19 10:0	9							Matrix: Water
Date Received:	09/20/19 14:1	5							
_	Batch	Batch		Dilution	Batch	Prepared			
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab	
Total/NA	Prep	3510C			313064	10/02/19 12:48	PRO	TAL SEA	
Total/NA	Analysis	NWTPH-Dx		1	313198	10/03/19 18:18	ERZ	TAL SEA	
-		10/ 00/040						h Osmanla II	
Slient Sampl	e ID: FWG-	/vv-091919 -					La	ab Sample II	J: 580-89413-9
Date Collected:	09/19/19 10:2	5							Matrix: Water
Jate Received:	09/20/19 14:1	5							
	Batch	Batch		Dilution	Batch	Prepared			
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab	
Total/NA	Prep	3510C			313064	10/02/19 12:48	PRO	TAL SEA	
Total/NA	Analysis	NWTPH-Dx		1	313198	10/03/19 18:38	ERZ	TAL SEA	
- Client Compl		4 004040						- Comple ID	E00 00442 40
Cheft Samp		-091919					Lai	5 Sample ID	. 500-09415-10
Date Collected:	09/19/19 10:2	5							Matrix: Water
Date Received:	09/20/19 14:1	5							
	Batch	Batch		Dilution	Batch	Prepared			
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab	
Total/NA	Prep	3510C			313064	10/02/19 12:48	PRO	TAL SEA	
Total/NA	Analysis	NWTPH-Dx		1	313198	10/03/19 18:59	ERZ	TAL SEA	
Client Sampl							ام ا	Sample ID	520 20/12 11
Dete Collected		7					Lai	5 Sample ID	. 500-05415-11 Metrix: Weter
Date Collected:	09/19/19 10:4	7 5							watrix: water
_		•							
	Batch	Batch		Dilution	Batch	Prepared			
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab	
Total/NA	Prep	3510C			313064	10/02/19 12:48	PRO	TAL SEA	
Total/NA	Analysis	NWTPH-Dx		1	313198	10/03/19 19:19	ERZ	TAL SEA	
Client Sampl	e ID: S2-AU	-091919					Lat	o Sample ID	580-89413-12
Date Collected:	09/19/19 11:1	5							Matrix: Water
Date Received:	09/20/19 14:1	5							
_	<b>5</b> / ·	5 / 1			<b>_</b>	<u> </u>			
	Batch	Batch	<b>D</b>	Dilution	Batch	Prepared	Analyst	Lab	
	I ype		Kun						
	Prep	33100			313004	10/02/19 12:48		TAL SEA	
	Analysis	INVVI PH-DX		1	313198	10/03/19 19:39	EKZ	TAL SEA	

Matrix: Water

Matrix: Water

Lab Sample ID: 580-89413-13

Lab Sample ID: 580-89413-14

#### Client Sample ID: S2-AD-091919 Date Collected: 09/19/19 11:22 Date Received: 09/20/19 14:15

		-						
_	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			313064	10/02/19 12:48	PRO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	313198	10/03/19 19:59	ERZ	TAL SEA

#### Client Sample ID: S2-BD-091919 Date Collected: 09/19/19 11:28 Date Received: 09/20/19 14:15

Γ	Batch	Batch		Dilution	Batch	Prepared		
Ргер Туре	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			313064	10/02/19 12:48	PRO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	313198	10/03/19 20:19	ERZ	TAL SEA

#### Client Sample ID: S2-BU-091919

Lab Sample ID: 580-89413-15 Matrix: Water

#### Date Collected: 09/19/19 11:30 Date Received: 09/20/19 14:15

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			313064	10/02/19 12:48	PRO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	313198	10/03/19 20:39	ERZ	TAL SEA

#### Client Sample ID: GW-20-091919

#### Lab Sample ID: 580-89413-16 Matrix: Water

#### Date Collected: 09/19/19 16:30 Date Received: 09/20/19 14:15

—	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C	·		313064	10/02/19 12:48	PRO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	313198	10/03/19 21:00	ERZ	TAL SEA

#### Laboratory References:

TAL SEA = Eurofins TestAmerica, Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

## Accreditation/Certification Summary

Client: Farallon Consulting LLC Project/Site: BNSF Skykomish Ground Water

#### Job ID: 580-89413-1

#### Laboratory: Eurofins TestAmerica, Seattle

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-024	01-19-22
ANAB	Dept. of Defense ELAP	L2236	01-19-22
ANAB	ISO/IEC 17025	L2236	01-19-22
California	State	2901	11-05-19
Montana (UST)	State	NA	04-13-21
Oregon	NELAP	WA100007	11-05-19
US Fish & Wildlife	US Federal Programs	058448	07-31-20
USDA	US Federal Programs	P330-17-00039	02-10-20
Washington	State	C553	02-17-20

## Sample Summary

#### Client: Farallon Consulting LLC Project/Site: BNSF Skykomish Ground Water

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-89413-1	GW-1-091919	Water	09/19/19 08:20	09/20/19 14:15
580-89413-2	5-W-43-091919	Water	09/19/19 08:22	09/20/19 14:15
580-89413-3	PZ-75-091919	Water	09/19/19 08:24	09/20/19 14:15
580-89413-4	PZ-8-091919	Water	09/19/19 09:20	09/20/19 14:15
580-89413-5	EW-1-091919	Water	09/19/19 09:21	09/20/19 14:15
580-89413-6	EW-10-091919	Water	09/19/19 09:25	09/20/19 14:15
580-89413-7	GW-2-091919	Water	09/19/19 09:21	09/20/19 14:15
580-89413-8	WG-WV-091919	Water	09/19/19 10:09	09/20/19 14:15
580-89413-9	FWG-WV-091919	Water	09/19/19 10:25	09/20/19 14:15
580-89413-10	WG-EV-091919	Water	09/19/19 10:25	09/20/19 14:15
580-89413-11	FWG-EV-091919	Water	09/19/19 10:47	09/20/19 14:15
580-89413-12	S2-AU-091919	Water	09/19/19 11:15	09/20/19 14:15
580-89413-13	S2-AD-091919	Water	09/19/19 11:22	09/20/19 14:15
580-89413-14	S2-BD-091919	Water	09/19/19 11:28	09/20/19 14:15
580-89413-15	S2-BU-091919	Water	09/19/19 11:30	09/20/19 14:15
580-89413-16	GW-20-091919	Water	09/19/19 16:30	09/20/19 14:15

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RAILWAY	Citu/State/7iP				······			Eax'				ant Method:			
CHAIN OF CUSTODY					-			1 04.				g Number:			
BNSF PROJECT INFORMATION	Project State o	i Origin: W J	4				с	ONSULTA	NT INFORMATION	N	Proje	ct Number: 68	3-06	7	
BNSF Project Number: 683-067	Project City:	Skykon	rish, w	A	Company	Ta	rell	,			Proje	ct Manager: Pete	- King.	ston	
BNSF Project Name: BNSF Stylemsh - M	owthe	1			Address:	9-	15	5th y	AVE NW		Ema	Philipstone	Faraller	Comula	Sy com
BNSF Contact:	BNSF Work Or	der No.:			City/State	/2IP:	83aG	Jush	WA «	55077	Phor	· 425-295-	0500	ах:	- J
TURNAROUND TIME	C	ELIVERABLES	C	] Other De	liverables	:7			METHO	DS FOR ANAL	YSIS				
1-day Rush 5- to 8-day Rush	BNSF SI	tandard (Level II)													
2-day Rush Standard 10-Day	Level III			EDD Red	I, Format'	?									
3-day Rush Other	Level IV		<u></u>	1											
SAMP	LE INFORM	ATION						Ŧ							
	0	Sam	pie Collection	·	Filtered	Туре	1	E							
Sample Identification	Containers	Date	Time	Sampler	Y/N	(Comp/ Grab)	Matrix	ZE					COMMENTS		LAB USE
GW-1-091919	2	9/19/19	0520	mG	N	6	$ \omega $	X	<u></u>						
5-W-43-091919			0822	CB	1			X							
PZ-75-091919			osey	60				X	· · · · · · · · · · · · · · · · · · ·					-	
PZ-8-091919			0920	MG				R							
EW-1-091919			0921	CB				K							
EW-10-091919			2915	rB		1		X			580-8941	3 Chain of Cust	ody		
Gul-7-091919			0021	20				X			l	1 1			
ME			1000	60				x I			Theı	m. ID: <b>M2</b> C	1.C		1.7 °-
ENVC - WW 091919			1095	MAR				N			Cool	er Dsc: 1-3	Gran	edEx:	<u></u>
ALC IN COURIO			inie	MG 40		-		N			Pack	ing: <b>13-5</b> Seal Ves <b>7</b> -Vr	i	PS:	
$\frac{10}{100} \frac{100}{100} = 1$			005	07				N			Blue	Ice Net Dry, N	one (	Jab Cour: Dther:	<u> </u>
FWO-EV-Marin			1041	CD				$\frac{n}{v}$						1	
12 <u>22-40-71419</u>			1115	rng				<u> </u>			Ther	m ID: <b>↑</b> ²(	or: <b>-0.2</b>	_° ('nc:_	<u> </u>
3 <u>32</u> - <del>4</del> <u>9</u> - <u>51</u> ( <u>9</u> ( <u>9</u> )			1122	CB				<u>K</u>			Cool	er Dsc:	31-2	edEx:	
N 2X- 60- 491919			1125	GP		$ \left  \right  $		X			Pack	ing: <u>B-b</u>		PS:	
15 52- BU-991919	V	<u> </u>	1130	MG	V	V		x			Cust	Seal: Yes Dry N	one	Jab Cour: Other	<u> </u>
Relinquished By	Date/fime:	00/190730	Received By:	Sall		SE	14 TP		0ate/Time: 9-20-19	1415	Comn Bille	NC CONTRACT		/III.1 ·	<u></u>
	oater (16)8.		received By:						Uale/Time:						
Kelinguished By:	Date/Time:		Received By:						Date/Time:						
Received by Laboratory:	Date/Time:		Lab Remarks:						Lab: Custody Int	tact? C	Custody Seal No.		BNSF CC	IC No	

ORIGINAL - RETURN TO LABORATORY WITH SAMPLES

TAL-1001 (0912)

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BNSF	Laboratory:				ABORAI	OKT IN	PORMAT	Project M	anager:					LAB W	ORK ORU	SHIPMENT INFORMAT	TION
RAILWAY	Address:							Phone:				<del></del>		Shipme	nt Method	d:	······································
CHAIN OF CUSTODY	City/State/ZIP:	·········						Fax:						Trackin	g Number:	-	
BNSF PROJECT INFORMATION	Project State of	rorigin: W/	<del>}_</del>		]		с	ONSULT	ANT IN	FORMAT	TION			Project N	lumber:	683-067	
BNSF Project Number: 683-067	Project City:	Aukon	nsh		Company	Ta	ral	lon				• <u> </u>		Project N	Manager:	Pet Lingston	
BNSF Project Name: BNSF Stykomish BNSF Contact:	- Mon BNSF Work O	they der No.:			Address: City/State	gi7	55	R AI	UE	NW	205.0			Email: Phone:	pling	Anotavalluce	wsulfing. C-on
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		andaro (Level II)	<u>-</u>			~~~~~											
Standard 10-Day	Level III		L	] EDD Red	ą, Format'	ſ		ă									
US-day Rush	Level IV							4		****							
SAM	PLE INFORM	ATION		****		,		ē									
Sample Identification	Containers	Samp	ole Collection		Filtered	Type (Comp/	Matrix	3			-						
		Dale	Time	Sampler	1/15	Grab)		₹								COMMENTS	LAB USE
. GW-20-091919	2	9/19/19	0430	GP	N	G	Ŵ	K									
2																	
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Relinquished By:	Date/Time:	24/190720	Received By:	All	<u>×</u>	Se	<del>7</del> 47	A		9-20 Date/Time	19 1	415	Comme	nts and	Special A	Analytical Requirements	:
Relinquished By:	Date/Time:		Received By:							Date/Time	:						
Received by Laboratory:	Date/Time-		Lab Remarks:							Lab: Custo	ndy Intact?	No	Custody S	eal No.		BNSF COC No	

ORIGINAL - RETURN TO LABORATORY WITH SAMPLES

Client: Farallon Consulting LLC

#### Login Number: 89413 List Number: 1

Creator: McMorris, Regan

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td></td>	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	IDs on containers do not match the COC. Logged in per COC.
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Job Number: 580-89413-1

List Source: Eurofins TestAmerica, Seattle

# 🛟 eurofins

# Environment Testing TestAmerica

## **ANALYTICAL REPORT**

## Eurofins TestAmerica, Seattle 5755 8th Street East Tacoma, WA 98424 Tel: (253)922-2310

## Laboratory Job ID: 580-90157-1

Client Project/Site: BNSF Skykomish Monthly

## For:

..... Links

Review your project results through

**Total** Access

**Have a Question?** 

Ask-

The

www.testamericainc.com

Visit us at:

Expert

Farallon Consulting LLC 975 5th Avenue NW Suite 100 Issaquah, Washington 98027

Attn: Peter Kingston

Knitche D. allen

Authorized for release by: 10/28/2019 1:32:57 PM

Kristine Allen, Manager of Project Management (253)248-4970 kristine.allen@testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

# **Table of Contents**

Cover Page	1
Table of Contents	2
Case Narrative	3
Definitions	4
Client Sample Results	5
QC Sample Results	19
Chronicle	20
Certification Summary	23
Sample Summary	24
Chain of Custody	25
Receipt Checklists	26

## Job ID: 580-90157-1

#### Laboratory: Eurofins TestAmerica, Seattle

Narrative

Job Narrative 580-90157-1

**Case Narrative** 

#### Comments

No additional comments.

#### Receipt

The samples were received on 10/18/2019 3:25 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 0.4° C, 0.7° C and 3.2° C.

#### GC Semi VOA

Method NWTPH-Dx: The surrogate o-Terphenyl of CCV associated with batch analytical batch 580-315231 have %D lower control limit. Since the %Recovery is within the acceptance criteria, the data have been reported. (CCVRT 580-315231/3)

Method NWTPH-Dx: The following samples contained a hydrocarbon pattern in the diesel range; however, the elution pattern was later than the typical diesel fuel pattern used by the laboratory for quantitative purposes: S2-BU-101719 (580-90157-3), PZ-7S-101719 (580-90157-4), WG-EV-101719 (580-90157-7) and WG-WV-101719 (580-90157-9).

Method NWTPH-Dx: Surrogate recovery for the following samples were outside control limits: GW-2-101719 (580-90157-1), S2-BU-101719 (580-90157-3), PZ-7S-101719 (580-90157-4), S2-AD-101719 (580-90157-5) and GW-1-101719 (580-90157-8). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### **Organic Prep**

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.
4

# Qualifiers

GC Semi VOA	
Qualifier	Qua

Qualifier	Qualifier Description
Х	Surrogate is outside control limits

Glossary	
Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

# Client Sample ID: GW-2-101719 Date Collected: 10/17/19 11:04

Date Received: 10/18/19 15:25

# Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062	0.062	mg/L		10/25/19 11:21	10/26/19 16:14	1
Motor Oil (>C24-C36)	ND		0.091	0.091	mg/L		10/25/19 11:21	10/26/19 16:14	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	33	X	50 - 150				10/25/19 11:21	10/26/19 16:14	1

Job ID: 580-90157-1

Matrix: Water

Lab Sample ID: 580-90157-1

# Job ID: 580-90157-1

# Client Sample ID: S2-BD-101719 Date Collected: 10/17/19 11:16

Date Received: 10/18/19 15:25

# Lab Sample ID: 580-90157-2 Matrix: Water

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)												
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac			
#2 Diesel (C10-C24)	ND		0.061	0.061	mg/L		10/25/19 11:21	10/26/19 16:34	1			
Motor Oil (>C24-C36)	ND		0.091	0.091	mg/L		10/25/19 11:21	10/26/19 16:34	1			
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac			
o-Terphenyl	74		50 - 150				10/25/19 11:21	10/26/19 16:34	1			

Job ID: 580-90157-1

# Client Sample ID: S2-BU-101719 Date Collected: 10/17/19 11:45

Date Received: 10/18/19 15:25

# Lab Sample ID: 580-90157-3 Matrix: Water

5

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)												
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac			
#2 Diesel (C10-C24)	0.39		0.061	0.061	mg/L		10/25/19 11:21	10/26/19 16:54	1			
Motor Oil (>C24-C36)	0.26		0.091	0.091	mg/L		10/25/19 11:21	10/26/19 16:54	1			
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac			
o-Terphenyl	37	X	50 - 150				10/25/19 11:21	10/26/19 16:54	1			

# Client Sample ID: PZ-7S-101719 Date Collected: 10/17/19 12:06

Date Received: 10/18/19 15:25

# Lab Sample ID: 580-90157-4 Matrix: Water

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)												
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac			
#2 Diesel (C10-C24)	ND		0.062	0.062	mg/L		10/25/19 11:21	10/26/19 17:14	1			
Motor Oil (>C24-C36)	0.092		0.091	0.091	mg/L		10/25/19 11:21	10/26/19 17:14	1			
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac			
o-Terphenyl	30	X	50 - 150				10/25/19 11:21	10/26/19 17:14	1			

# Job ID: 580-90157-1

# Client Sample ID: S2-AD-101719 Date Collected: 10/17/19 12:18

Date Received: 10/18/19 15:25

# Lab Sample ID: 580-90157-5 Matrix: Water

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)												
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac			
#2 Diesel (C10-C24)	ND		0.062	0.062	mg/L		10/25/19 11:21	10/26/19 17:34	1			
Motor Oil (>C24-C36)	ND		0.091	0.091	mg/L		10/25/19 11:21	10/26/19 17:34	1			
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac			
o-Terphenyl	44	X	50 - 150				10/25/19 11:21	10/26/19 17:34	1			

# Client Sample ID: S2-2-AU-101719 Date Collected: 10/17/19 12:43

Date Received: 10/18/19 15:25

# Lab Sample ID: 580-90157-6 Matrix: Water

5

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)												
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac			
#2 Diesel (C10-C24)	ND		0.061	0.061	mg/L		10/25/19 11:21	10/26/19 17:55	1			
Motor Oil (>C24-C36)	ND		0.091	0.091	mg/L		10/25/19 11:21	10/26/19 17:55	1			
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac			
o-Terphenyl	51		50 - 150				10/25/19 11:21	10/26/19 17:55	1			

Job ID: 580-90157-1

Matrix: Water

Lab Sample ID: 580-90157-7

# Client Sample ID: WG-EV-101719 Date Collected: 10/17/19 14:15

Date Received: 10/18/19 15:25

# _____

Method: NWTPH-Dx - North	west - Semi-Volatile	Petroleum	Products (GC)	)					
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.58		0.061	0.061	mg/L		10/25/19 11:21	10/26/19 18:35	1
Motor Oil (>C24-C36)	0.39		0.091	0.091	mg/L		10/25/19 11:21	10/26/19 18:35	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	92		50 - 150				10/25/19 11:21	10/26/19 18:35	1

Eurofins TestAmerica, Seattle

# Client Sample ID: GW-1-101719 Date Collected: 10/17/19 14:21

Date Received: 10/18/19 15:25

# Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.061	0.061	mg/L		10/25/19 11:21	10/26/19 18:55	1
Motor Oil (>C24-C36)	ND		0.091	0.091	mg/L		10/25/19 11:21	10/26/19 18:55	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	39	X	50 - 150				10/25/19 11:21	10/26/19 18:55	1

Job ID: 580-90157-1

Matrix: Water

Lab Sample ID: 580-90157-8

Job ID: 580-90157-1

# Client Sample ID: WG-WV-101719 Date Collected: 10/17/19 14:53

Date Received: 10/18/19 15:25

# Lab Sample ID: 580-90157-9 Matrix: Water

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)												
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac			
#2 Diesel (C10-C24)	0.070		0.062	0.062	mg/L		10/25/19 11:21	10/26/19 19:15	1			
Motor Oil (>C24-C36)	0.12		0.091	0.091	mg/L		10/25/19 11:21	10/26/19 19:15	1			
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac			
o-Terphenyl	69		50 - 150				10/25/19 11:21	10/26/19 19:15	1			

# Client Sample ID: FWG-EV-101719 Date Collected: 10/17/19 15:12

Date Received: 10/18/19 15:25

# Lab Sample ID: 580-90157-10 Matrix: Water

Method: NWTPH-Dx - Northwest	- Semi-Volatile	e Petroleum	Products (GC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062	0.062	mg/L		10/25/19 11:21	10/26/19 19:35	1
Motor Oil (>C24-C36)	ND		0.091	0.091	mg/L		10/25/19 11:21	10/26/19 19:35	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	83		50 - 150				10/25/19 11:21	10/26/19 19:35	1

# Client Sample ID: FWG-WV-101719 Date Collected: 10/17/19 15:47

Date Received: 10/18/19 15:25

# Lab Sample ID: 580-90157-11 Matrix: Water

Method: NWTPH-Dx - Northy	west - Semi-Volatile	e Petroleum	Products (GC)	)					
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062	0.062	mg/L		10/25/19 11:21	10/26/19 19:55	1
Motor Oil (>C24-C36)	ND		0.091	0.091	mg/L		10/25/19 11:21	10/26/19 19:55	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	64		50 - 150				10/25/19 11:21	10/26/19 19:55	1

Date Collected: 10/17/19 15:27

# Project/Site: BNSF Skykomish Monthly Client Sample ID: 5-W-43-101719

# Job ID: 580-90157-1

# Lab Sample ID: 580-90157-12

Matrix: Water

# Date Received: 10/18/19 15:25 Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062	0.062	mg/L		10/25/19 11:21	10/26/19 20:16	1
Motor Oil (>C24-C36)	ND		0.091	0.091	mg/L		10/25/19 11:21	10/26/19 20:16	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	86		50 - 150				10/25/19 11.21	10/26/19 20:16	1

# Client Sample ID: EW-1-101719 Date Collected: 10/17/19 16:38

Date Received: 10/18/19 15:25

# Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062	0.062	mg/L		10/25/19 11:21	10/26/19 20:36	1
Motor Oil (>C24-C36)	ND		0.091	0.091	mg/L		10/25/19 11:21	10/26/19 20:36	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	78		50 - 150				10/25/19 11:21	10/26/19 20:36	1

Job ID: 580-90157-1

Matrix: Water

5

Lab Sample ID: 580-90157-13

# Client Sample ID: PZ-8-101719 Date Collected: 10/17/19 17:24

Date Received: 10/18/19 15:25

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062	0.062	mg/L		10/25/19 11:21	10/26/19 20:56	1
Motor Oil (>C24-C36)	ND		0.091	0.091	mg/L		10/25/19 11:21	10/26/19 20:56	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	52		50 - 150				10/25/19 11:21	10/26/19 20:56	1

Job ID: 580-90157-1

Matrix: Water

Lab Sample ID: 580-90157-14

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# Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Lab Sample ID: MB 580-315161	/ <b>1-A</b>									<b>Client Sa</b>	ample ID:	Method	Blank
Matrix: Water											Prep T	ype: To	tal/NA
Analysis Batch: 315231											Prep I	Batch: 3	15161
	Μ	B MB											
Analyte	Resu	It Qualifier	RL		MDL	Unit		D	Ρ	repared	Analyz	ed	Dil Fac
#2 Diesel (C10-C24)	N	D	0.065	(	0.065	mg/L			10/2	5/19 11:21	10/26/19	14:53	1
Motor Oil (>C24-C36)	N	D	0.096	(	0.096	mg/L			10/2	5/19 11:21	10/26/19	14:53	1
	М	B MB											
Surrogate	%Recove	ry Qualifier	Limits						P	repared	Analyz	ed	Dil Fac
o-Terphenyl	{	34	50 - 150						10/2	5/19 11:21	10/26/19	14:53	1
Lab Sample ID: LCS 580-31516	1/2-A							С	lient	Sample	ID: Lab Co	ontrol S	ample
Matrix: Water								_			Prep T	vpe: To	tal/NA
Analysis Batch: 315231											Prep	Batch: 3	15161
			Spike	LCS	LCS						%Rec.		
Analyte			Added	Result	Qua	lifier	Unit		D	%Rec	Limits		
#2 Diesel (C10-C24)			0.500	0.368			mg/L		_	74	50 - 120		
Motor Oil (>C24-C36)			0.500	0.418			mg/L			84	64 - 120		
	LCS L	cs											
Surrogate	%Recovery Q	ualifier	Limits										
o-Terphenyl	82		50 - 150										
Lab Sample ID: LCSD 580-3151	61/3-A						CI	ient	Sam	ple ID: L	ab Contro	I Sampl	e Dup
Matrix: Water											Prep T	vpe: To	tal/NA
Analysis Batch: 315231											Prep I	Batch: 3	15161
			Spike	LCSD	LCS	D					%Rec.		RPD
Analyte			Added	Result	Qua	lifier	Unit		D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)			0.500	0.394			mg/L		_	79	50 - 120	7	26
Motor Oil (>C24-C36)			0.500	0.438			mg/L			88	64 - 120	5	24
	LCSD L	CSD											
Surrogate	%Recovery Q	ualifier	Limits										
o-Terphenyl	82		50 - 150										

# Client Sample ID: GW-2-101719 Date Collected: 10/17/19 11:04 Date Received: 10/18/19 15:25

_	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			315161	10/25/19 11:21	PRO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	315231	10/26/19 16:14	CJ	TAL SEA

# Client Sample ID: S2-BD-101719 Date Collected: 10/17/19 11:16 Date Received: 10/18/19 15:25

	Batch	Batch		Dilution	Batch	Prepared		
Ргер Туре	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			315161	10/25/19 11:21	PRO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	315231	10/26/19 16:34	CJ	TAL SEA

# Client Sample ID: S2-BU-101719

Lab Sample ID: 580-90157-3 Matrix: Water

Lab Sample ID: 580-90157-4

Lab Sample ID: 580-90157-5

Lab Sample ID: 580-90157-6

### Date Collected: 10/17/19 11:45 Date Received: 10/18/19 15:25

	Batch	Batch		Dilution	Batch	Prepared		
Ргер Туре	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			315161	10/25/19 11:21	PRO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	315231	10/26/19 16:54	CJ	TAL SEA

# Client Sample ID: PZ-7S-101719

Date Collected: 10/17/19 12:06

Date Received: 10/18/19 15:25

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			315161	10/25/19 11:21	PRO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	315231	10/26/19 17:14	CJ	TAL SEA

# Client Sample ID: S2-AD-101719

Date Collected: 10/17/19 12:18 Date Received: 10/18/19 15:25

_	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			315161	10/25/19 11:21	PRO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	315231	10/26/19 17:34	CJ	TAL SEA

# Client Sample ID: S2-2-AU-101719 Date Collected: 10/17/19 12:43 Date Received: 10/18/19 15:25

—	Batch	Batch		Dilution	Batch	Prepared		
Ргер Туре	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			315161	10/25/19 11:21	PRO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	315231	10/26/19 17:55	CJ	TAL SEA

Job ID: 580-90157-1

Matrix: Water

Matrix: Water

Matrix: Water

Matrix: Water

Lab Sample ID: 580-90157-2

Matrix: Water

Matrix: Water

Matrix: Water

Matrix: Water

Matrix: Water

Lab Sample ID: 580-90157-7

Lab Sample ID: 580-90157-8

# Client Sample ID: WG-EV-101719 Date Collected: 10/17/19 14:15 Date Received: 10/18/19 15:25

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			315161	10/25/19 11:21	PRO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	315231	10/26/19 18:35	CJ	TAL SEA

# Client Sample ID: GW-1-101719 Date Collected: 10/17/19 14:21 Date Received: 10/18/19 15:25

Γ	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			315161	10/25/19 11:21	PRO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	315231	10/26/19 18:55	CJ	TAL SEA

# Client Sample ID: WG-WV-101719

Lab Sample ID: 580-90157-9 Matrix: Water

Lab Sample ID: 580-90157-10

Lab Sample ID: 580-90157-11

Lab Sample ID: 580-90157-12

Date Collected: 10/17/19 14:53 Date Received: 10/18/19 15:25

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			315161	10/25/19 11:21	PRO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	315231	10/26/19 19:15	CJ	TAL SEA

# Client Sample ID: FWG-EV-101719

Date Collected: 10/17/19 15:12

Date Received: 10/18/19 15:25

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			315161	10/25/19 11:21	PRO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	315231	10/26/19 19:35	CJ	TAL SEA

# Client Sample ID: FWG-WV-101719

Date Collected: 10/17/19 15:47 Date Received: 10/18/19 15:25

Batch	Batch		Dilution	Batch	Prepared		
Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Prep	3510C			315161	10/25/19 11:21	PRO	TAL SEA
Analysis	NWTPH-Dx		1	315231	10/26/19 19:55	CJ	TAL SEA
	Batch Type Prep Analysis	BatchBatchTypeMethodPrep3510CAnalysisNWTPH-Dx	BatchBatchTypeMethodRunPrep3510CAnalysisNWTPH-Dx	BatchBatchDilutionTypeMethodRunFactorPrep3510C	BatchBatchDilutionBatchTypeMethodRunFactorNumberPrep3510C315161315161AnalysisNWTPH-Dx1315231	BatchBatchDilutionBatchPreparedTypeMethodRunFactorNumberor AnalyzedPrep3510C31516110/25/19 11:21AnalysisNWTPH-Dx131523110/26/19 19:55	BatchBatchDilutionBatchPreparedTypeMethodRunFactorNumberor AnalyzedAnalystPrep3510C31516110/25/19 11:21PROAnalysisNWTPH-Dx131523110/26/19 19:55CJ

## Client Sample ID: 5-W-43-101719 Date Collected: 10/17/19 15:27 Date Received: 10/18/19 15:25

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			315161	10/25/19 11:21	PRO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	315231	10/26/19 20:16	CJ	TAL SEA

# Client Sample ID: EW-1-101719 Date Collected: 10/17/19 16:38 Date Received: 10/18/19 15:25

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			315161	10/25/19 11:21	PRO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	315231	10/26/19 20:36	CJ	TAL SEA

# Client Sample ID: PZ-8-101719 Date Collected: 10/17/19 17:24 Date Received: 10/18/19 15:25

_	Batch	Batch		Dilution	Batch	Prepared		
Ргер Туре	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			315161	10/25/19 11:21	PRO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	315231	10/26/19 20:56	CJ	TAL SEA

### Laboratory References:

TAL SEA = Eurofins TestAmerica, Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Job ID: 580-90157-1

Matrix: Water

Matrix: Water

Lab Sample ID: 580-90157-13

Lab Sample ID: 580-90157-14

# 1 2 3 4 5 6 7 8 9

# Accreditation/Certification Summary

Client: Farallon Consulting LLC Project/Site: BNSF Skykomish Monthly

# Laboratory: Eurofins TestAmerica, Seattle

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-024	01-19-22
ANAB	Dept. of Defense ELAP	L2236	01-19-22
ANAB	ISO/IEC 17025	L2236	01-19-22
California	State	2901	11-05-19
Montana (UST)	State	NA	04-13-21
Oregon	NELAP	WA100007	11-05-19
US Fish & Wildlife	US Federal Programs	058448	07-31-20
USDA	US Federal Programs	P330-17-00039	02-10-20
Washington	State	C553	02-17-20

# Sample Summary

## Client: Farallon Consulting LLC Project/Site: BNSF Skykomish Monthly

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-90157-1	GW-2-101719	Water	10/17/19 11:04	10/18/19 15:25
580-90157-2	S2-BD-101719	Water	10/17/19 11:16	10/18/19 15:25
580-90157-3	S2-BU-101719	Water	10/17/19 11:45	10/18/19 15:25
580-90157-4	PZ-7S-101719	Water	10/17/19 12:06	10/18/19 15:25
580-90157-5	S2-AD-101719	Water	10/17/19 12:18	10/18/19 15:25
580-90157-6	S2-2-AU-101719	Water	10/17/19 12:43	10/18/19 15:25
580-90157-7	WG-EV-101719	Water	10/17/19 14:15	10/18/19 15:25
580-90157-8	GW-1-101719	Water	10/17/19 14:21	10/18/19 15:25
580-90157-9	WG-WV-101719	Water	10/17/19 14:53	10/18/19 15:25
580-90157-10	FWG-EV-101719	Water	10/17/19 15:12	10/18/19 15:25
580-90157-11	FWG-WV-101719	Water	10/17/19 15:47	10/18/19 15:25
580-90157-12	5-W-43-101719	Water	10/17/19 15:27	10/18/19 15:25
580-90157-13	EW-1-101719	Water	10/17/19 16:38	10/18/19 15:25
580-90157-14	PZ-8-101719	Water	10/17/19 17:24	10/18/19 15:25

	1	L/	BORATORY INFORMAT	ION		LAB WORK ORDER: 90157
BNSF	Laboratory:		· · · · · · · · · · · · · · · · · · ·	Project Manager:		SHIPMENT INFORMATION
RAILWAY	Address:			Phone:		Shipment Method:
CHAIN OF CUSTODY	City/State/ZIP:			Fax:		Tracking Number:
BNSF PROJECT INFORMATION	Project State of Origin:	14	C	ONSULTANT INFOR		Project Number: 683-067
F Project Number: 683-067	Project City: Stuko	msh	Company: Fareli	n busi	uting	Project Manager. Picke Kingston
FProject Name: BUSF Stykemish V	Nouthly		Address: 975 5#	AVE NW	*	Email phong ston @ function suiting is in
iF Contact:	BNSF Work Order No.:		City/State/ZIP	uah WA	98027	Phone: 425-295-08-8 Fex.
TURNAROUND TIME	DELIVERAB	LES Other De	liverables?		METHODS FOR ANA	ILYSIS
1-day Rush 5- to 8-day Rush	BNSF Standard (Leve	III)				
2-day Rush Standard 10-Day	Level III	EDD Rec	Format?	à l		
3-day Rush Other	Level fV			1		
SA	MPLE INFORMATION			1 à		
		Sample Collection	Filtered	3		580-90157 Chain of Custody
Sample Identification	Containers Date	Time Sampler	Y/N (Comp/ Matrix Grab)	Ś		
GW-2-101719	2 10/11	19 1104 GP	NGW	X		
52-BD-101719	1 1	1116	1 1 1	X		A Star Color
52-BU-101719		1145		ĸ		Cooler Dsc: Ir s Green in
P7-75-101719		1206		x		Packing: <b>B.6</b> FedEx:
52- AD-101719		1218		X		Cust. Seal: YesNo Lab Cour:
52-2-AU-101719		1243		k		Blue Ice, (ver, )ry, .vone Omer:
WG-FV-101719		1415		K		Therm. ID: <b>TE7</b> Cor: <b>3.2</b> • Unc: <b>35</b>
GW-1-101719		1421		x		Cooler Dsc: / B) Je FedEx:
WG - WV - 101719		1453		X		Cust. Seal: Yes No K UPS:
FWG-EV-101719		1512		X		Blue Ice, (et Dry, None Other:
EWG -WV-101-19		1547		X		
5-W-43-61719		1527	A Construction of the cons	$\overline{\chi}$		Therm. ID: 11 Cor: 0.4 ° Unc: 0.5
EW-1-101719		1638	Contraction of the second	X		Packing: Byb FedEx:
P7-8-101719		1724 1	I I I	X		Cust. Seal: Yes_Not Lab Cour:
						Blue Ice, CeDry, None Other:
nquished By	Date/Time: 01121 mast	817 Red By Jak	SEA		e/Time:	Comments and Special Analytical Requirements.
nguished By	Date/Time:	Received By:		Date	e/Time:	1
iquished By:	Date/Time:	Received By:		Date	e/Time:	1
sived by Laboratory:	Date/Time:	Lab Remarks:		Lab:	Custody inlact?	Custody Seal No. BNSF COC No

**ORIGINAL - RETURN TO LABORATORY WITH SAMPLES** 

DUPLICATE - CONSULTANT

TAL-1001 (0912)

Client: Farallon Consulting LLC

# Login Number: 90157 List Number: 1

Creator: Blankinship, Tom X

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	False	Insufficient volume received for MS/MSD.
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	True	

List Source: Eurofins TestAmerica, Seattle

# 🛟 eurofins

# Environment Testing TestAmerica

# **ANALYTICAL REPORT**

# Eurofins TestAmerica, Seattle 5755 8th Street East Tacoma, WA 98424 Tel: (253)922-2310

# Laboratory Job ID: 580-90933-1

Client Project/Site: BNSF Skykomish NPDES

# For:

.....Links

Review your project results through

**Total** Access

**Have a Question?** 

Ask-

The

www.testamericainc.com

Visit us at:

Expert

Farallon Consulting LLC 975 5th Avenue NW Suite 100 Issaquah, Washington 98027

Attn: Peter Kingston

Knittene D. allen

Authorized for release by: 11/27/2019 1:07:32 PM

Kristine Allen, Manager of Project Management (253)248-4970 kristine.allen@testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Receipt Checklists 27	Chain of Custody	25
	Receipt Checklists	27

# Job ID: 580-90933-1

# Laboratory: Eurofins TestAmerica, Seattle

Narrative

Job Narrative 580-90933-1

## Comments

No additional comments.

## Receipt

The samples were received on 11/20/2019 1:55 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 0.6° C, 1.5° C and 1.6° C.

## GC Semi VOA

Method NWTPH-Dx: The following samples contained a hydrocarbon pattern in the diesel range; however, the elution pattern was later than the typical diesel fuel pattern used by the laboratory for quantitative purposes: S2-BU-111919 (580-90933-1), GW-1-111919 (580-90933-5), WG-WV-111919 (580-90933-7), WG-EV-111919 (580-90933-13) and PZ-7S-111919 (580-90933-14).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

## **Organic Prep**

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

# **Definitions/Glossary**

# Client: Farallon Consulting LLC Project/Site: BNSF Skykomish NPDES

4
5
8
9

Glossary	
Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

# Client Sample ID: S2-BU-111919 Date Collected: 11/19/19 10:25

Date Received: 11/20/19 13:55

# Lab Sample ID: 580-90933-1 Matrix: Water

Method: NWTPH-Dx - Northw	vest - Semi-Volatile	Petroleum	<b>Products (GC)</b>						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.20		0.062		mg/L		11/26/19 09:23	11/26/19 17:34	1
Motor Oil (>C24-C36)	0.17		0.092		mg/L		11/26/19 09:23	11/26/19 17:34	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	87		50 - 150				11/26/19 09:23	11/26/19 17:34	1

# Job ID: 580-90933-1

# Client Sample ID: GW-2-111919 Date Collected: 11/19/19 10:45

Date Received: 11/20/19 13:55

# Lab Sample ID: 580-90933-2 Matrix: Water

5

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)										
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac	
#2 Diesel (C10-C24)	ND		0.062		mg/L		11/26/19 09:23	11/26/19 17:57	1	
Motor Oil (>C24-C36)	ND		0.091		mg/L		11/26/19 09:23	11/26/19 17:57	1	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac	
o-Terphenyl	77		50 - 150				11/26/19 09:23	11/26/19 17:57	1	

Date Received: 11/20/19 13:55

# Lab Sample ID: 580-90933-3 Matrix: Water

Wallix. Walei

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)										
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac	
#2 Diesel (C10-C24)	ND		0.062		mg/L		11/26/19 09:23	11/26/19 18:18	1	
Motor Oil (>C24-C36)	ND		0.092		mg/L		11/26/19 09:23	11/26/19 18:18	1	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac	
o-Terphenyl	79		50 - 150				11/26/19 09:23	11/26/19 18:18	1	

Date Received: 11/20/19 13:55

lob ID: 580-90933-7	1
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# Lab Sample ID: 580-90933-4 Matrix: Water

Method: NWTPH-Dx - Northv	vest - Semi-Volatile	Petroleum	Products (GC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062		mg/L		11/26/19 09:23	11/26/19 18:40	1
Motor Oil (>C24-C36)	ND		0.091		mg/L		11/26/19 09:23	11/26/19 18:40	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	74		50 - 150				11/26/19 09:23	11/26/19 18:40	1

Job ID: 580-90933-1

# Client Sample ID: GW-1-111919 Date Collected: 11/19/19 11:42

Date Received: 11/20/19 13:55

# Lab Sample ID: 580-90933-5 Matrix: Water

5

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)										
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac	
#2 Diesel (C10-C24)	ND		0.065		mg/L		11/26/19 09:23	11/26/19 19:02	1	
Motor Oil (>C24-C36)	0.11		0.095		mg/L		11/26/19 09:23	11/26/19 19:02	1	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac	
o-Terphenyl	80		50 - 150				11/26/19 09:23	11/26/19 19:02	1	

# Client Sample ID: S2-AU-111919 Date Collected: 11/19/19 12:00

Date Received: 11/20/19 13:55

# Lab Sample ID: 580-90933-6 Matrix: Water

Wallix. Walei

5

Method: NWTPH-Dx - Northwes	st - Semi-Volatile	e Petroleum	<b>Products (GC)</b>						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062		mg/L		11/26/19 09:23	11/26/19 19:24	1
Motor Oil (>C24-C36)	ND		0.091		mg/L		11/26/19 09:23	11/26/19 19:24	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	79		50 - 150				11/26/19 09:23	11/26/19 19:24	1

Job ID: 580-90933-1

# Client Sample ID: WG-WV-111919 Date Collected: 11/19/19 12:35

Date Received: 11/20/19 13:55

# Lab Sample ID: 580-90933-7 Matrix: Water

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.076		0.062		mg/L		11/26/19 09:23	11/26/19 19:46	1
Motor Oil (>C24-C36)	0.18		0.092		mg/L		11/26/19 09:23	11/26/19 19:46	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	86		50 - 150				11/26/19 09:23	11/26/19 19:46	1

# Client Sample ID: 5-W-43-111919 Date Collected: 11/19/19 12:36

Date Received: 11/20/19 13:55

# Lab Sample ID: 580-90933-8 Matrix: Water

5

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.064		mg/L		11/26/19 09:23	11/26/19 20:30	1
Motor Oil (>C24-C36)	ND		0.094		mg/L		11/26/19 09:23	11/26/19 20:30	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	77		50 - 150				11/26/19 09:23	11/26/19 20:30	1

# Client Sample ID: EW-1-111919 Date Collected: 11/19/19 13:31

Date Received: 11/20/19 13:55

# Lab Sample ID: 580-90933-9

Matrix: Water

5

– Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.063		mg/L		11/26/19 09:23	11/26/19 20:52	1
Motor Oil (>C24-C36)	ND		0.094		mg/L		11/26/19 09:23	11/26/19 20:52	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	80		50 - 150				11/26/19 09:23	11/26/19 20:52	1
#### Client Sample ID: FWG-WV-111919 Date Collected: 11/19/19 13:39

Date Received: 11/20/19 13:55

#### Lab Sample ID: 580-90933-10 Matrix: Water

Method: NWTPH-Dx - North	west - Semi-Volatile	Petroleum	<b>Products (GC)</b>						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062		mg/L		11/26/19 09:23	11/26/19 21:14	1
Motor Oil (>C24-C36)	ND		0.092		mg/L		11/26/19 09:23	11/26/19 21:14	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	71		50 - 150				11/26/19 09:23	11/26/19 21:14	1

#### Client Sample ID: FWG-EV-111919 Date Collected: 11/19/19 14:15

Date Received: 11/20/19 13:55

#### Lab Sample ID: 580-90933-11 Matrix: Water

5

Method: NWTPH-Dx - Northw	vest - Semi-Volatile	Petroleum	Products (GC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062		mg/L		11/26/19 09:23	11/26/19 21:35	1
Motor Oil (>C24-C36)	ND		0.091		mg/L		11/26/19 09:23	11/26/19 21:35	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	55		50 - 150				11/26/19 09:23	11/26/19 21:35	1

#### Client Sample ID: PZ-8-111919 Date Collected: 11/19/19 14:25

Date Received: 11/20/19 13:55

#### Lab Sample ID: 580-90933-12 Matrix: Water

5

Method: NWTPH-Dx - Northwe	st - Semi-Volatile	Petroleum	Products (GC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.066		mg/L		11/26/19 09:23	11/26/19 21:57	1
Motor Oil (>C24-C36)	ND		0.097		mg/L		11/26/19 09:23	11/26/19 21:57	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	70		50 - 150				11/26/19 09:23	11/26/19 21:57	1

#### Client Sample ID: WG-EV-111919 Date Collected: 11/19/19 14:46

Date Received: 11/20/19 13:55

#### Lab Sample ID: 580-90933-13 Matrix: Water

Method: NWTPH-Dx - Northy	vest - Semi-Volatile	Petroleum	<b>Products (GC)</b>						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.45		0.062		mg/L		11/26/19 09:23	11/26/19 22:19	1
Motor Oil (>C24-C36)	0.41		0.092		mg/L		11/26/19 09:23	11/26/19 22:19	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	92		50 - 150				11/26/19 09:23	11/26/19 22:19	1

#### Client Sample ID: PZ-7S-111919 Date Collected: 11/19/19 15:22

Date Received: 11/20/19 13:55

#### Lab Sample ID: 580-90933-14 Matrix: Water

5

Method: NWTPH-Dx - Northw	est - Semi-Volatile	Petroleum	Products (GC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062		mg/L		11/26/19 09:23	11/26/19 22:40	1
Motor Oil (>C24-C36)	0.12		0.092		mg/L		11/26/19 09:23	11/26/19 22:40	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	74		50 - 150				11/26/19 09:23	11/26/19 22:40	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Lab Sample ID: MB 580-31/6/1	/1 <b>-A</b>											Client S	ample ID:	Method	Blank	
Matrix: Water													Prep 1	Г <mark>уре: Т</mark> о	tal/NA	
Analysis Batch: 317751													Prep	Batch: 3	17671	
		MB	MB													5
Analyte	R	esult	Qualifier		RL		MDL	Unit		D	Р	repared	Analy	zed	Dil Fac	
#2 Diesel (C10-C24)		ND			0.065			mg/L			11/2	6/19 09:23	11/26/19	16:29	1	6
Motor Oil (>C24-C36)		ND			0.096			mg/L			11/2	6/19 09:23	11/26/19	16:29	1	
		ΜВ	МВ													
Surrogate	%Reco	very	Qualifier	Lin	nits						P	repared	Analy	zed	Dil Fac	
o-Terphenyl		75		50	- 150						11/2	6/19 09:23	11/26/19	16:29	1	8
- Lab Sample ID: LCS 580-31767	1/2-A									С	lient	Sample	ID: Lab C	ontrol S	ample	9
Matrix: Water													Prep 1	Type: To	tal/NA	
Analysis Batch: 317751													Prep	Batch: 3	17671	
-				Spike		LCS	LCS						%Rec.			
Analyte				Added		Result	Quali	ifier	Unit		D	%Rec	Limits			
#2 Diesel (C10-C24)				0.500		0.486			mg/L			97	50 - 120			
Motor Oil (>C24-C36)				0.500		0.497			mg/L			99	64 - 120			
	LCS	LCS														
Surrogate	%Recovery	Qual	lifier	Limits												
o-Terphenyl	112			50 - 150	_											
Lab Sample ID: LCSD 580-3176	71/3-A								С	lient	Sam	ple ID: L	ab Contro	ol Sampl	e Dup	
Matrix: Water													Prep 1	Type: To	tal/NA	
Analysis Batch: 317751													Prep	Batch: 3	17671	
				Spike		LCSD	LCSE	)					%Rec.		RPD	
Analyte				Added		Result	Quali	ifier	Unit		D	%Rec	Limits	RPD	Limit	
#2 Diesel (C10-C24)				0.500		0.481			mg/L			96	50 - 120	1	26	
Motor Oil (>C24-C36)				0.500		0 490			ma/l			98	64 - 120	1	24	

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
o-Terphenyl	123		50 - 150

Lab Sample ID: 580-90933-1

Lab Sample ID: 580-90933-4

Lab Sample ID: 580-90933-5

Lab Sample ID: 580-90933-6

### 2 3 4 5 6 7

Lab Sample ID: 580-90933-2 Matrix: Water

Matrix: Water

Matrix: Water

Matrix: Water

Matrix: Water

Client Sample ID: S2-BU-111919
Date Collected: 11/19/19 10:25
Date Received: 11/20/19 13:55

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			317671	11/26/19 09:23	NRF	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	317751	11/26/19 17:34	T1W	TAL SEA

#### Client Sample ID: GW-2-111919 Date Collected: 11/19/19 10:45 Date Received: 11/20/19 13:55

Γ	В	atch	Batch		Dilution	Batch	Prepared		
Prep T	ype Ty	уре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/N	NA Pi	rep	3510C			317671	11/26/19 09:23	NRF	TAL SEA
Total/N	NA AI	nalysis	NWTPH-Dx		1	317751	11/26/19 17:57	T1W	TAL SEA

#### Client Sample ID: S2-BD-111919

Lab Sample ID: 580-90933-3 Matrix: Water

#### Date Collected: 11/19/19 10:58 Date Received: 11/20/19 13:55

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C		·	317671	11/26/19 09:23	NRF	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	317751	11/26/19 18:18	T1W	TAL SEA

#### Client Sample ID: S2-AD-111919

Date Collected: 11/19/19 11:28

Date Received: 11/20/19 13:55

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			317671	11/26/19 09:23	NRF	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	317751	11/26/19 18:40	T1W	TAL SEA

#### Client Sample ID: GW-1-111919

Date Collected: 11/19/19 11:42 Date Received: 11/20/19 13:55

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			317671	11/26/19 09:23	NRF	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	317751	11/26/19 19:02	T1W	TAL SEA

#### Client Sample ID: S2-AU-111919 Date Collected: 11/19/19 12:00 Date Received: 11/20/19 13:55

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			317671	11/26/19 09:23	NRF	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	317751	11/26/19 19:24	T1W	TAL SEA

#### Client Sample ID: WG-WV-111919 Date Collected: 11/19/19 12:35 Date Received: 11/20/19 13:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analvst	Lab
Total/NA	Prep	3510C			317671	11/26/19 09:23	NRF	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	317751	11/26/19 19:46	T1W	TAL SEA

#### Client Sample ID: 5-W-43-111919 Date Collected: 11/19/19 12:36 Date Received: 11/20/19 13:55

Γ	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			317671	11/26/19 09:23	NRF	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	317751	11/26/19 20:30	T1W	TAL SEA

#### Client Sample ID: EW-1-111919

Date Collected: 11/19/19 13:31

Date Received: 11/20/19 13:55

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			317671	11/26/19 09:23	NRF	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	317751	11/26/19 20:52	T1W	TAL SEA

#### Client Sample ID: FWG-WV-111919

Date Collected: 11/19/19 13:39

Date Received: 11/20/19 13:55

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			317671	11/26/19 09:23	NRF	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	317751	11/26/19 21:14	T1W	TAL SEA

#### Client Sample ID: FWG-EV-111919

Date Collected: 11/19/19 14:15 Date Received: 11/20/19 13:55

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			317671	11/26/19 09:23	NRF	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	317751	11/26/19 21:35	T1W	TAL SEA

#### Client Sample ID: PZ-8-111919 Date Collected: 11/19/19 14:25 Date Received: 11/20/19 13:55

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			317671	11/26/19 09:23	NRF	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	317751	11/26/19 21:57	T1W	TAL SEA

Matrix: Water

Matrix: Water

Matrix: Water

Matrix: Water

Matrix: Water

Lab Sample ID: 580-90933-7

Lab Sample ID: 580-90933-8

Lab Sample ID: 580-90933-9

Lab Sample ID: 580-90933-10

Lab Sample ID: 580-90933-11

Lab Sample ID: 580-90933-12

#### Client Sample ID: WG-EV-111919 Date Collected: 11/19/19 14:46 Date Received: 11/20/19 13:55

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			317671	11/26/19 09:23	NRF	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	317751	11/26/19 22:19	T1W	TAL SEA

#### Client Sample ID: PZ-7S-111919 Date Collected: 11/19/19 15:22 Date Received: 11/20/19 13:55

_	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			317671	11/26/19 09:23	NRF	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	317751	11/26/19 22:40	T1W	TAL SEA

#### Laboratory References:

TAL SEA = Eurofins TestAmerica, Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Job ID: 580-90933-1

### Lab Sample ID: 580-90933-13

Lab Sample ID: 580-90933-14

Matrix: Water

Matrix: Water

ashington       State Program       C553       02-17-20         The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for the agency does not offer certification.       This list may include analytes for the agency does not offer certification.         Analysis Method       Prep Method       Matrix       Analyte	thority		Program	Identification Number	Expiration Date	
The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for the agency does not offer certification.         Analysis Method       Prep Method       Matrix       Analyte	shington		State Program	C553	02-17-20	
the agency does not offer certification. <u>Analysis Method</u> <u>Matrix</u> <u>Analyte</u>	The following analytes	are included in this report,	but the laboratory is not certi	fied by the governing authority. This list ma	ay include analytes for which	
Analysis Method Prep Method Matrix Analyte	the agency does not of	fer certification.				
	Analysis Method	Prep Method	Matrix	Analyte		

#### Sample Summary

#### Client: Farallon Consulting LLC Project/Site: BNSF Skykomish NPDES

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-90933-1	S2-BU-111919	Water	11/19/19 10:25	11/20/19 13:55
580-90933-2	GW-2-111919	Water	11/19/19 10:45	11/20/19 13:55
580-90933-3	S2-BD-111919	Water	11/19/19 10:58	11/20/19 13:55
580-90933-4	S2-AD-111919	Water	11/19/19 11:28	11/20/19 13:55
580-90933-5	GW-1-111919	Water	11/19/19 11:42	11/20/19 13:55
580-90933-6	S2-AU-111919	Water	11/19/19 12:00	11/20/19 13:55
580-90933-7	WG-WV-111919	Water	11/19/19 12:35	11/20/19 13:55
580-90933-8	5-W-43-111919	Water	11/19/19 12:36	11/20/19 13:55
580-90933-9	EW-1-111919	Water	11/19/19 13:31	11/20/19 13:55
580-90933-10	FWG-WV-111919	Water	11/19/19 13:39	11/20/19 13:55
580-90933-11	FWG-EV-111919	Water	11/19/19 14:15	11/20/19 13:55
580-90933-12	PZ-8-111919	Water	11/19/19 14:25	11/20/19 13:55
580-90933-13	WG-EV-111919	Water	11/19/19 14:46	11/20/19 13:55
580-90933-14	PZ-7S-111919	Water	11/19/19 15:22	11/20/19 13:55

#### **Eurofins TestAmerica, Seattle**

5755 8th Street East

ye2

#### Chain of Custody Record

🔅 eurofins Environment Testing TestAmerica

Tacoma, WA 98424 Phone: 253-922-2310 Fax: 253-922-5047

Client Information	C. Ban-	Fell L	Thor	Alle	РМ: n, Kris	tine D					Carrie	er Trac	king No	(s):			COC No: 580-36547-117	27.1
Zient Contact: Peter Kingston	Phone: 425	5 Z95	5 080	Krist	ii: tine.all	en@tes	tameric	ainc.c	om	_			70	73.	3		Page: Page 1 of 2	
ompany: Farallon Consulting LLC					Τ			An	alvsis	s Re	aues	ted			<i></i>		100 # (B	3-067
ddress: 75 5th Avenue NW Suite 100	Due Date Reques	ted:								T				T			Preservation Co	ides:
ity:	TAT Requested (c	days):					ĺ										A - HCL B - NaOH	M - Hexane N - None
ssaquan tate, Zip:		3				Å Å											C - Zn Acetate D - Nitric Acid	0 - AsNaO2 P - Na2O4S
VA, 98027	PO#					NWTF											E - NaHSO4 F - MeOH	Q - Na2SO3 R - Na2S2O3
(425) 2950800	TT0100-Q11				6	it for											G - Amchlor H - Ascorbic Acid	S - H2SO4 T - TSP Dodecah
^{mail:} kingston@farallonconsulting.com	WO#: Tax Code 8800	DBF1000721	5		2 0	sil Bu											I - Ice J - DI Water	U - Acetone V - MCAA
roject Name: INSE Skykomish NPDES	Project #					eport										ainer	K - EDTA L - EDA	W - pH 4-5 Z - other (specify)
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Vashington		1	l		d Sa MSC	Stan										er of		
			Sample Type	Matrix (Wewater,	Iltere M MS	á										- fill		
		Sample	(C=Comp,	S≂solid, O≖waste/oil,	eld F erfor	NTPH										otal N		
ample Identification	Sample Date		G=grab) Preserva	BT=Tissue, A=Air) ation Code:	XX										2 97 6 S	×	Special I	nstructions/Note
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GW-2-111919		1045	- i	Water		1												
52-BD-111919		1058		Water														
52-AD-111919		1128		Water														
GW-1-111919		114Z		Water										1				
52-AU-111919		1200		Water														
WG-WV-111919		1235		Water									1		בייייייייייייייייייייייי הייייייייייייי	ESSERCE 1701 de de la	I Maleti di Kirka di Kasal di Kasal	N N NA
5-6-43-111919		1236		Water									-					
FW-1-111919		1331		Water									****					
FWG-WV-111919		1339		Water									-	580-	1 III I 9093	间間 3 Ch	ain of Custody	A CARACTERIA CARACTERIA CARACTERIA CARACTERIA CARACTERIA CARACTERIA CARACTERIA CARACTERIA CARACTERIA CARACTERIA A Caracteria Caracteria Caracteria Caracteria Caracteria Caracteria Caracteria Caracteria Caracteria Caracteria A Caracteria
FWG-EV-111919	*	1415	*	Water	1	4				1			 1			30°		
ossible Hazard Identification	را بر	<u> </u>		<b>.</b>	Sa	mple Di	sposal	( A fe	e may	be as	ssess	ed if	samp	les a	re reta	aineo	l longer than 1	month)
Non-Hazard      Flammable      Skin Irritant      Pi	oison B 🛄 Unkn	own 🖂 R	Radiologica	1	- L Snd	Retu	rn To (	lient	Requir		ispos te	al By	Lab			rchiv	e For	Months
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annuished by:	Date/Time:			0										-				1-

#### Eurofins TestAmerica, Seattle

### Chain of Custody Record

#### eurofins

Environment Testing TestAmerica

 5755 8th Street East Tacoma, WA 98424

Phone: 253-922-2310	Fax: 253-922-5047

	Sampler of ald 11 Thomas M	ab PM: C	Carrier Tracking No(s):	COC No:
Client Information	Phone Dartfield C. Mary 201	-Mait	0/11	980-90947-31727.2 Page:
Peter Kingston	425 2950800	ristine.allen@testamericainc.com	10733	Page 2 of 2
Company: Facallon Consulting I.I.C		Analysis Rog	iesteri	Job# (22-0/-7
Address:	Due Date Requested:			Preservation Codes:
375 5th Avenue NW Suite 100	·			A - HCL M - Hexane
Dity:	TAT Requested (days):			B - NaOH N - None
State Zio	+ $2$			D - Nitric Acid P - Na2O4S
NA, 98027				E - NaHSO4 Q - Na2SO3 E - MaOH R - Na2SO3
"hone: 415 295 0000	PO #:			G - Amchlor S - H2SO4
	110100-Q11 Mio.#			H - Ascorbic Acid T - TSP Dodecat I - Ice U - Acetone
haan okingston@farallonconsulting.com	Tax Code 8800 BF10007215	10 O		J - DI Water V - MCAA
roject Name:	Project #:		l l l l l l l l l l l l l l l l l l l	K-EDTA W-pH 4-5 L-EDA Z-other (specify
SNSF Skykomish NPDES	58005923			,
ite: Nachington	SSOW#:		8	Other:
Vasinigion			O Le	
	Sample Matri			
	Type (W=wate		ž i karalite	
ample Identification	Sample Date Time G=grab) BTatissue A		I I I I I I I I I I I I I I I I I I I	Special Instructions/No
	Preservation Code			
PI-Q-Illiqua	With the 1475 C Water			
<u>TE-D-111919</u>	141419 1165 9 -			
WG-EV-111919	1446 Vvate		Therm ID: A1 Co	n: 0,6 ° tine: 0,7 °.
PZ-78-111919	4 1527 1 Water		Cooler Dsc: Ly B	We
	Water		Packing: bub	FedEx:
		┉╉╂┉╎╴╎╴╎╴╎╴╎╴╎	Cust Seal: Yes * No	UPS:
			Plue Ice Wet Dry No	ne Othor
		A1 cm 15 cm 16 t		
	Therm. ID:	La Blue		1/ 11-
	A Packing	FedEx:	Therm. ID: Co	$\operatorname{pr:}_{(1,0)} (1,0) = \operatorname{Unc:}_{(1,0)} (1,0)$
	Curt South	UPS:	$-$ Cooler Dsc: $\underline{\lambda_{g}}$	FedEx
		Lab Cour:	Packing: GUV	UPS:
	Bille Ice, ma	tipry, None Other: PriCeu	Cust. Seal: Yes X No	Lab Cour:
		<b>1 1 1 1 1 1 1 1</b>	Blue Ice, Wet, Drv, No	ne Other:
ossible Hazard Identification		Sample Disposal ( A fee may be ass	essed if samples are retaine	a longer man i monso
	son B	Return To Client	nosal By Lab Archi	ve For Months
eliverable Requested: I, II, III, IV, Other (specify)		Special Instructions/QC Requirements	i:	
			Nothed of Shinmont	
mpty Kit Relinquished by:	Date:		Method of Shipment.	10
sinquished by: ( hey talk i Dol)	Vialia 1746 Company	HAN RECEIVED DY: THE RAIL	11/20/19	1355
elinquished by:	DateTime! Company	Received by:	Date/Time:	Company
	1			

Client: Farallon Consulting LLC

#### Login Number: 90933 List Number: 1

Creator: Blankinship, Tom X

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Job Number: 580-90933-1

List Source: Eurofins TestAmerica, Seattle

# 🛟 eurofins

## Environment Testing TestAmerica

### ANALYTICAL REPORT

Eurofins TestAmerica, Seattle 5755 8th Street East Tacoma, WA 98424 Tel: (253)922-2310

#### Laboratory Job ID: 580-91664-1

Client Project/Site: BNSF Skykomish Former Maintenance Sampling Event: Skykomish HCC System

#### For:

Farallon Consulting LLC 975 5th Avenue NW Suite 100 Issaquah, Washington 98027

Attn: Peter Kingston

Knistine D. allen

Authorized for release by: 1/6/2020 1:39:51 PM

Kristine Allen, Manager of Project Management (253)248-4970 kristine.allen@testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



## **Table of Contents**

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Client Sample Results	5
QC Sample Results	20
Chronicle	21
Certification Summary	24
Sample Summary	25
Chain of Custody	26
Receipt Checklists	30

#### Laboratory: Eurofins TestAmerica, Seattle

Narrative

Job Narrative 580-91664-1

#### Comments

No additional comments.

#### Receipt

The samples were received on 12/20/2019 10:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 0.6° C, 2.0° C and 2.2° C.

#### GC Semi VOA

Method NWTPH-Dx: The following samples contained a hydrocarbon pattern in the diesel range; however, the elution pattern were later than the typical diesel fuel pattern used by the laboratory for quantitative purposes: WG-WV-121819 (580-91664-8) and PZ-7S-121819 (580-91664-13).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### **Organic Prep**

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Job ID: 580-91664-1

#### **Definitions/Glossary**

#### Client: Farallon Consulting LLC Project/Site: BNSF Skykomish Former Maintenance

Glossary Abbreviation

¤

100 ID: 580 01664 1	
JOD ID. 560-91004-1	
	4
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%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

These commonly used abbreviations may or may not be present in this report.

Listed under the "D" column to designate that the result is reported on a dry weight basis

#### Client Sample ID: PZ-80-121819

Date Collected: 12/18/19 11:25 Date Received: 12/20/19 10:00

Method: NWTPH-Dx - North	west - Semi-Volatile	Petroleum	Products (GC)	1					
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.063	0.063	mg/L		12/31/19 09:53	01/02/20 16:18	1
Motor Oil (>C24-C36)	ND		0.093	0.093	mg/L		12/31/19 09:53	01/02/20 16:18	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	71		50 _ 150				12/31/19 09:53	01/02/20 16:18	1

Lab Sample ID: 580-91664-1

Job ID: 580-91664-1

Matrix: Water

#### Client Sample ID: S2-AU-121819

Date Collected: 12/18/19 13:32 Date Received: 12/20/19 10:00

Method: NWTPH-Dx - North	west - Semi-Volatile	Petroleum	Products (GC)	1					
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062	0.062	mg/L		12/31/19 09:53	01/02/20 16:39	1
Motor Oil (>C24-C36)	ND		0.091	0.091	mg/L		12/31/19 09:53	01/02/20 16:39	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	70		50 _ 150				12/31/19 09:53	01/02/20 16:39	1

Job ID: 580-91664-1

Matrix: Water

#### Client Sample ID: GW-1-121819 Date Collected: 12/18/19 13:55

Date Received: 12/20/19 10:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062	0.062	mg/L		12/31/19 09:53	01/02/20 17:01	1
Motor Oil (>C24-C36)	ND		0.092	0.092	mg/L		12/31/19 09:53	01/02/20 17:01	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	85		50 - 150				12/31/19 09:53	01/02/20 17:01	1

Lab Sample ID: 580-91664-3

Matrix: Water

Job ID: 580-91664-1

2 3 4

#### Client Sample ID: S2-AD-121819

Date Collected: 12/18/19 11:38 Date Received: 12/20/19 10:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062	0.062	mg/L		12/31/19 09:53	01/02/20 17:44	1
Motor Oil (>C24-C36)	ND		0.091	0.091	mg/L		12/31/19 09:53	01/02/20 17:44	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	81		50 - 150				12/31/19 09:53	01/02/20 17:44	1

Lab Sample ID: 580-91664-4

Job ID: 580-91664-1

Matrix: Water

Eurofins TestAmerica, Seattle

#### Client Sample ID: EW-1-121819 Date Collected: 12/18/19 10:30

Date Received: 12/20/19 10:00

#### Lab Sample ID: 580-91664-5 Matrix: Water

5

Method: NWTPH-Dx - Northw	vest - Semi-Volatile	Petroleum	Products (GC)	)					
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.063	0.063	mg/L		12/31/19 09:53	01/02/20 18:06	1
Motor Oil (>C24-C36)	ND		0.093	0.093	mg/L		12/31/19 09:53	01/02/20 18:06	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	78		50 - 150				12/31/19 09:53	01/02/20 18:06	1

#### Client Sample ID: S2-BD-121819

Date Collected: 12/18/19 09:47 Date Received: 12/20/19 10:00

- Method: NWTPH-Dx - North	nwest - Semi-Volatile	Petroleum	Products (GC)	)				
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed
#2 Diesel (C10-C24)	ND		0.062	0.062	mg/L		12/31/19 09:53	01/02/20 18:28
Motor Oil (>C24-C36)	ND		0.091	0.091	mg/L		12/31/19 09:53	01/02/20 18:28
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed
o-Terphenyl	80		50 - 150				12/31/19 09:53	01/02/20 18:28

Job ID: 580-91664-1

Matrix: Water

Dil Fac 1

Dil Fac

Lab Sample ID: 580-91664-6

Client Sample ID: 5-W-43-121819 Date Collected: 12/18/19 09:28

Date Received: 12/20/19 10:00

Method: NWTPH-Dx - North	west - Semi-Volatile	Petroleum	Products (GC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062	0.062	mg/L		12/31/19 09:53	01/02/20 18:50	1
Motor Oil (>C24-C36)	ND		0.092	0.092	mg/L		12/31/19 09:53	01/02/20 18:50	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	82		50 - 150				12/31/19 09:53	01/02/20 18:50	1

Job ID: 580-91664-1

Matrix: Water

5

Lab Sample ID: 580-91664-7

#### Client Sample ID: WG-WV-121819 Date Collected: 12/18/19 13:54

Date Received: 12/20/19 10:00

	- Semi-Volatile Result	Petroleum Qualifier	Products (GC)	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.061	0.061	mg/L		12/31/19 09:53	01/02/20 19:11	1
Motor Oil (>C24-C36)	0.17		0.091	0.091	mg/L		12/31/19 09:53	01/02/20 19:11	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	93		50 - 150				12/31/19 09:53	01/02/20 19:11	1

Job ID: 580-91664-1

Matrix: Water

Lab Sample ID: 580-91664-8

Matrix: Water

Lab Sample ID: 580-91664-9

#### Client Sample ID: FWG-EV-121819 Date Collected: 12/18/19 14:35

Date Received: 12/20/19 10:00

	Semi-Volatile	Petroleum	Products (GC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062	0.062	mg/L		12/31/19 09:53	01/02/20 19:33	1
Motor Oil (>C24-C36)	ND		0.091	0.091	mg/L		12/31/19 09:53	01/02/20 19:33	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	84		50 - 150				12/31/19 09:53	01/02/20 19:33	1

#### Client Sample ID: S2-BU-121819

Date Collected: 12/18/19 10:18 Date Received: 12/20/19 10:00

- Method: NWTPH-Dx - Northwe	st - Semi-Volatile	Petroleum	Products (GC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.11		0.062	0.062	mg/L		12/31/19 09:53	01/02/20 19:55	1
Motor Oil (>C24-C36)	0.10		0.091	0.091	mg/L		12/31/19 09:53	01/02/20 19:55	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	84		50 - 150				12/31/19 09:53	01/02/20 19:55	1

Lab Sample ID: 580-91664-10

Matrix: Water

Lab Sample ID: 580-91664-11

#### Client Sample ID: FWG-WV-121819 Date Collected: 12/18/19 15:00

Date Received: 12/20/19 10:00

Analyte

#### Matrix: Water Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC) Result Qualifier RL MDL Unit Dil Fac D Prepared Analyzed

#2 Diesel (C10-C24)	ND		0.062	0.062	mg/L	 12/31/19 09:53	01/02/20 20:17	1
Motor Oil (>C24-C36)	ND		0.091	0.091	mg/L	12/31/19 09:53	01/02/20 20:17	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac

5

Matrix: Water

Lab Sample ID: 580-91664-12

#### Client Sample ID: WG-EV-121819 Date Collected: 12/18/19 10:49

Date Received: 12/20/19 10:00

_ Method: NWTPH-Dx - Northw	vest - Semi-Volatile	Petroleum	Products (GC)	)					
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.45		0.061	0.061	mg/L		12/31/19 09:53	01/02/20 20:38	1
Motor Oil (>C24-C36)	0.45		0.091	0.091	mg/L		12/31/19 09:53	01/02/20 20:38	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	97		50 - 150				12/31/19 09:53	01/02/20 20:38	1

Matrix: Water

Lab Sample ID: 580-91664-13

### Client Sample ID: PZ-7S-121819

Date Collected: 12/18/19 14:52 Date Received: 12/20/19 10:00

	Semi-Volatile	Petroleum	Products (GC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.063	0.063	mg/L		12/31/19 09:53	01/02/20 21:00	1
Motor Oil (>C24-C36)	0.11		0.092	0.092	mg/L		12/31/19 09:53	01/02/20 21:00	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	83		50 - 150				12/31/19 09:53	01/02/20 21:00	1

#### Client Sample ID: GW-2-121819 Date Collected: 12/18/19 15:48

Date Received: 12/20/19 10:00

Method: NWTPH-Dx - North	west - Semi-Volatile	Petroleum	Products (GC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062	0.062	mg/L		12/31/19 09:53	01/02/20 21:43	1
Motor Oil (>C24-C36)	ND		0.091	0.091	mg/L		12/31/19 09:53	01/02/20 21:43	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	79		50 - 150				12/31/19 09:53	01/02/20 21:43	1

Job ID: 580-91664-1

Lab Sample ID: 580-91664-14

Matrix: Water

5

#### Client Sample ID: GW-20-121819 Date Collected: 12/18/19 15:55

Date Received: 12/20/19 10:00

Method: NWTPH-Dx - North	west - Semi-Volatile	Petroleum	Products (GC)	1					
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.062	0.062	mg/L		12/31/19 09:53	01/02/20 22:05	1
Motor Oil (>C24-C36)	ND		0.091	0.091	mg/L		12/31/19 09:53	01/02/20 22:05	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	87		50 - 150				12/31/19 09:53	01/02/20 22:05	1

Job ID: 580-91664-1

Lab Sample ID: 580-91664-15

Matrix: Water

Lab Sample ID: MB 580-319908/1-A

Matrix: Water

Analyte

Analysis Batch: 319958

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

MB MB

Result Qualifier

RL

MDL Unit

Prep Type: Total/NA

Prep Batch: 319908

Dil Fac

**Client Sample ID: Method Blank** 

Analyzed

Prepared

D

#2 Diesel (C10-C24)	N	0	0.065	(	0.065 mg/L		12/3	31/19 09:53	01/02/20 13	3:45	1
Motor Oil (>C24-C36)	N	C	0.096	(	0.096 mg/L		12/3	31/19 09:53	01/02/20 13	:45	1
	М	8 <i>MB</i>									
Surrogate	%Recover	y Qualifier	Limits				F	Prepared	Analyze	d	Dil Fac
o-Terphenyl		1	50 - 150				12/3	31/19 09:53	01/02/20 13	3:45	1
- Lab Sample ID: LCS 580-319	908/2-A						Client	t Sample	ID: Lab Cor	trol S	ample
Matrix: Water									Prep Ty	pe: To	otal/NA
Analysis Batch: 319958									Prep Ba	atch: 3	319908
			Spike	LCS	LCS				%Rec.		
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits		
#2 Diesel (C10-C24)			0.500	0.448		mg/L		90	50 - 120		
Motor Oil (>C24-C36)			0.500	0.493		mg/L		99	64 - 120		
	LCS LC	s									
Surrogate	%Recovery Qu	alifier	Limits								
o-Terphenyl	107		50 - 150								
- Lab Sample ID: LCSD 580-31	9908/3-A					CI	ient San	nple ID: L	ab Control	Samp	le Dup
Matrix: Water								· · · ·	Prep Ty	pe: To	otal/NA
Analysis Batch: 319958									Prep Ba	atch: 3	319908
			Spike	LCSD	LCSD				%Rec.		RPD
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)			0.500	0.456		mg/L		91	50 - 120	2	26
Motor Oil (>C24-C36)			0.500	0.483		mg/L		97	64 - 120	2	24

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
o-Terphenyl	108		50 - 150

#### Client: Farallon Consulting LLC Project/Site: BNSF Skykomish Former Maintenance

Job ID: 580-91664-1

Matrix: Water

Matrix: Water

Matrix: Water

Matrix: Water

Matrix: Water

Matrix: Water

Lab Sample ID: 580-91664-1

Lab Sample ID: 580-91664-2

Lab Sample ID: 580-91664-3

Lab Sample ID: 580-91664-4

Lab Sample ID: 580-91664-5

Lab Sample ID: 580-91664-6

Client Sample ID: PZ-80-121819	
Date Collected: 12/18/19 11:25	
Date Received: 12/20/19 10:00	

Γ	_	Batch	Batch		Dilution	Batch	Prepared		
	Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
	Total/NA	Prep	3510C			319908	12/31/19 09:53	JCM	TAL SEA
	Total/NA	Analysis	NWTPH-Dx		1	319958	01/02/20 16:18	T1W	TAL SEA

#### Client Sample ID: S2-AU-121819 Date Collected: 12/18/19 13:32 Date Received: 12/20/19 10:00

Γ	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			319908	12/31/19 09:53	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	319958	01/02/20 16:39	T1W	TAL SEA

#### Client Sample ID: GW-1-121819

Date Collected: 12/18/19 13:55

Date Received: 12/20/19 10:00

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			319908	12/31/19 09:53	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	319958	01/02/20 17:01	T1W	TAL SEA

#### Client Sample ID: S2-AD-121819

Date Collected: 12/18/19 11:38 Date Received: 12/20/19 10:00

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			319908	12/31/19 09:53	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	319958	01/02/20 17:44	T1W	TAL SEA

#### Client Sample ID: EW-1-121819

Date Collected: 12/18/19 10:30 Date Received: 12/20/19 10:00

Γ	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			319908	12/31/19 09:53	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	319958	01/02/20 18:06	T1W	TAL SEA

#### Client Sample ID: S2-BD-121819 Date Collected: 12/18/19 09:47 Date Received: 12/20/19 10:00

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			319908	12/31/19 09:53	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	319958	01/02/20 18:28	T1W	TAL SEA

Dilution

Factor

Dilution

Factor

1

1

Run

Run

Batch

Number

319908

319958

Batch

Number

319908

319958

Prepared

or Analyzed

12/31/19 09:53

01/02/20 18:50

Prepared

or Analyzed

12/31/19 09:53

01/02/20 19:11

Analyst

Analyst

JCM

T1W

JCM

T1W

Lab

Lab

TAL SEA

TAL SEA

TAL SEA

TAL SEA

#### Client: Farallon Consulting LLC Project/Site: BNSF Skykomish Former Maintenance

Client Sample ID: 5-W-43-121819

Batch

Туре

Prep

Batch

Туре

Prep

Client Sample ID: WG-WV-121819

Analysis

Batch

Method

3510C

Batch

Method

3510C

NWTPH-Dx

Date Collected: 12/18/19 09:28

Date Received: 12/20/19 10:00

Date Collected: 12/18/19 13:54

Date Received: 12/20/19 10:00

Prep Type

Total/NA

Total/NA

Prep Type

Total/NA

Job ID: 580-91664-1

Lab Sample ID: 580-91664-7 Matrix: Water Lab Sample ID: 580-91664-8 Matrix: Water

Total/NA	Analysis	NWTPH-Dx

#### Client Sample ID: FWG-EV-121819

Lab Sample ID: 580-91664-9 Matrix: Water

Lab Sample ID: 580-91664-10

Lab Sample ID: 580-91664-11

Lab Sample ID: 580-91664-12

Matrix: Water

Matrix: Water

Matrix: Water

#### Date Collected: 12/18/19 14:35 Date Received: 12/20/19 10:00

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			319908	12/31/19 09:53	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	319958	01/02/20 19:33	T1W	TAL SEA

#### Client Sample ID: S2-BU-121819

Date Collected: 12/18/19 10:18 Date Received: 12/20/19 10:00

Batch Batch Dilution Batch Prepared Prep Type Туре Method Run Factor Number or Analyzed Analyst Lab Prep TAL SEA Total/NA 3510C JCM 319908 12/31/19 09:53 Total/NA T1W TAL SEA Analysis NWTPH-Dx 1 319958 01/02/20 19:55

#### Client Sample ID: FWG-WV-121819

Date Collected: 12/18/19 15:00 Date Received: 12/20/19 10:00

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			319908	12/31/19 09:53	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	319958	01/02/20 20:17	T1W	TAL SEA

#### Client Sample ID: WG-EV-121819 Date Collected: 12/18/19 10:49 Date Received: 12/20/19 10:00

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			319908	12/31/19 09:53	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	319958	01/02/20 20:38	T1W	TAL SEA
#### Client: Farallon Consulting LLC Project/Site: BNSF Skykomish Former Maintenance

Matrix: Water

Matrix: Water

Lab Sample ID: 580-91664-13

Lab Sample ID: 580-91664-14

#### Client Sample ID: PZ-7S-121819 Date Collected: 12/18/19 14:52 Date Received: 12/20/19 10:00

		-						
	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			319908	12/31/19 09:53	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	319958	01/02/20 21:00	T1W	TAL SEA

#### Client Sample ID: GW-2-121819 Date Collected: 12/18/19 15:48 Date Received: 12/20/19 10:00

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			319908	12/31/19 09:53	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	319958	01/02/20 21:43	T1W	TAL SEA

# Client Sample ID: GW-20-121819

Lab Sample ID: 580-91664-15 Matrix: Water

Date Collected: 12/18/19 15:55 Date Received: 12/20/19 10:00

_	Batch	Batch		Dilution	Batch	Prepared		
Ргер Туре	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			319908	12/31/19 09:53	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	319958	01/02/20 22:05	T1W	TAL SEA

#### Laboratory References:

TAL SEA = Eurofins TestAmerica, Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

# Accreditation/Certification Summary

Client: Farallon Consulting LLC Project/Site: BNSF Skykomish Former Maintenance

#### Job ID: 580-91664-1

#### Laboratory: Eurofins TestAmerica, Seattle

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-024	01-19-22
ANAB	Dept. of Defense ELAP	L2236	01-19-22
ANAB	ISO/IEC 17025	L2236	01-19-22
California	State	2901	11-05-20
Montana (UST)	State	NA	04-13-21
Oregon	NELAP	WA100007	11-06-20
US Fish & Wildlife	US Federal Programs	058448	07-31-20
USDA	US Federal Programs	P330-17-00039	02-10-20
Washington	State	C553	02-17-20

Eurofins TestAmerica, Seattle

# Sample Summary

#### Client: Farallon Consulting LLC Project/Site: BNSF Skykomish Former Maintenance

Job ID: 580-91664-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-91664-1	PZ-80-121819	Water	12/18/19 11:25	12/20/19 10:00
580-91664-2	S2-AU-121819	Water	12/18/19 13:32	12/20/19 10:00
580-91664-3	GW-1-121819	Water	12/18/19 13:55	12/20/19 10:00
580-91664-4	S2-AD-121819	Water	12/18/19 11:38	12/20/19 10:00
580-91664-5	EW-1-121819	Water	12/18/19 10:30	12/20/19 10:00
580-91664-6	S2-BD-121819	Water	12/18/19 09:47	12/20/19 10:00
580-91664-7	5-W-43-121819	Water	12/18/19 09:28	12/20/19 10:00
580-91664-8	WG-WV-121819	Water	12/18/19 13:54	12/20/19 10:00
580-91664-9	FWG-EV-121819	Water	12/18/19 14:35	12/20/19 10:00
580-91664-10	S2-BU-121819	Water	12/18/19 10:18	12/20/19 10:00
580-91664-11	FWG-WV-121819	Water	12/18/19 15:00	12/20/19 10:00
580-91664-12	WG-EV-121819	Water	12/18/19 10:49	12/20/19 10:00
580-91664-13	PZ-7S-121819	Water	12/18/19 14:52	12/20/19 10:00
580-91664-14	GW-2-121819	Water	12/18/19 15:48	12/20/19 10:00
580-91664-15	GW-20-121819	Water	12/18/19 15:55	12/20/19 10:00

Eurofins TestAmerica, Seattle

		LABORATORY INFORMATION	L	AB WORK ORDER:	
BNSF	Laboratory: EUROPINS, TESTAN	NACA Project Manager	re Allen	SHIPMENT INFORMA	TION
RAILWAY	Address: 5755 9th ST B	Phone: 25	3-922-23(05	hipment Method: CWRBG	2
CHAIN OF CUSTODY	City/state/ZIP: Tacoma, wA °	18424 Fax:	T	racking Number	
BNSF PROJECT INFORMATION	Project State of Origin:	CONSULTANT IN		roject Number: 683-067	-
BNSF Project Number: 683-067	Project City: Skykemich	Company: Furally Cons	sitis-	roject Manager: ETE KINGS	ton
ANSF Project Name: BUSF FORMER 1	MAITENANG	Address: 475 5th AVP	NID "	mall: plinyston Ptaralli	unconsulting, con
NSF Contact:	BNSF Work Order No.:	City/State/ZIP-KSQGVah,Li	A 98027 "	home: 425295080	>
TURNAROUND TIME	DELIVERABLES Other	Deliverables?	METHODS FOR ANALYSIS		
1-day Rush	BNSF Standard (Level II)				
2-day Rush Standard 10-Day	Level III EDD F	Reg. Format?			
3-day Rush Other					
S/	MPLE INFORMATION	F			
Sample (destification	Sample Collection	Filtered Type			
Запре основой	Date Time Sampl	ler Y/N Grab) Matrix 2		COMMENTS	LAB USE
PZ-93-12-1819	1 12/18/19/125 02	NGW			
S2-A1)-12(8)9	1 133.2				
GW-1-12-1819	(355				
52-AD-121919	1138				-
EW-1-121819	1030				**************************************
52-BD-121919	0947				
5-10-43-171819	0928				
WG-WY-121819	1354		···		
FWG-FV	1111424				
52-BU-171919					
FINGLUIT-121RIG					<b>[</b> ]
1.00- FIL- 171019					
D2-15-12101-1					
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Page 28 of 30

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Login Number: 91664			List Source: Eurofins TestAmerica. Seattle	
List Number: 1			,,,,	5
Creator: Vallelunga, Diana L				5
Question	Answer	Comment		
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td></td> <td></td> <td></td> <td></td>				
The cooler's custody seal, if present, is intact.				
Sample custody seals, if present, are intact.				8
The cooler or samples do not appear to have been compromised or tampered with.				9
Samples were received on ice.				
Cooler Temperature is acceptable.				
Cooler Temperature is recorded.				
COC is present.				11
COC is filled out in ink and legible.				
COC is filled out with all pertinent information.				
Is the Field Sampler's name present on COC?				
There are no discrepancies between the containers received and the COC.				
Samples are received within Holding Time (excluding tests with immediate HTs)				
Sample containers have legible labels.				
Containers are not broken or leaking.				
Sample collection date/times are provided.				
Appropriate sample containers are used.				
Sample bottles are completely filled.				
Sample Preservation Verified.				
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs				
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").				
Multiphasic samples are not present.				
Samples do not require splitting or compositing.				
Residual Chlorine Checked.				

# APPENDIX B DATA VALIDATION REPORTS

# HYDRAULIC CONTROL AND CONTAINMENT SYSTEM PASSIVE OPERATION PILOT STUDY REPORT BNSF Former Maintenance and Fueling Facility Skykomish, Washington Consent Decree No. 07-2-33672-9 SEA

Farallon PN: 683-067



cari.say@saylerdata.com

# DATA VALIDATION REPORT

Skykomish Groundwater Monitoring December 2018 Data

Prepared for: Farallon Consulting, LLC 975 5th Avenue NW Issaquah, Washington 98027

January 23, 2019

## 1.0 Introduction

Data validation was performed on the following water samples:

Sample ID	Sample Date/Time	Lab ID	Analyses
1B-W-23-121118	12/11/2018 12:00	580-82652-5	TPH-Dx
1B-W-3-121218	12/12/2018 10:40	580-82652-27	TPH-Dx
1C-W-1-121218	12/12/2018 09:40	580-82652-24	TPH-Dx
1C-W-7-121118	12/11/2018 16:10	580-82652-11	TPH-Dx
1C-W-8-121218	12/12/2018 09:41	580-82652-25	TPH-Dx
2A-W-10-121118	12/11/2018 10:30	580-82652-3	TPH-Dx
2A-W-40-121118	12/11/2018 09:23	580-82652-13	TPH-Dx
2A-W-410-121218	12/12/2018 11:20	580-82652-29	TPH-Dx
2A-W-41-121218	12/12/2018 11:01	580-82652-28	TPH-Dx, TPHSG
2A-W-42-121118	12/11/2018 16:12	580-82652-10	TPH-Dx
2A-W-9-121118	12/11/2018 10:44	580-82652-4	TPH-Dx
2B-W-4-121218	12/12/2018 12:23	580-82652-35	TPH-Dx
5-W-14-121218	12/12/2018 13:27	580-82652-37	TPH-Dx
5-W-16-121218	12/12/2018 12:24	580-82652-36	TPH-Dx
5-W-17-121218	12/12/2018 11:03	580-82652-30	TPH-Dx
5-W-18-121118	12/11/2018 15:35	580-82652-20	TPH-Dx
5-W-19-121118	12/11/2018 15:20	580-82652-19	TPH-Dx
5-W-43-121118	12/11/2018 12:35	580-82652-23	TPH-Dx
5-W-51-121218	12/12/2018 09:51	580-82652-26	TPH-Dx
5-W-55-121118	12/11/2018 16:45	580-82652-21	TPH-Dx
5-W-56-121118	12/11/2018 17:12	580-82652-22	TPH-Dx
EW-1-121218	12/12/2018 11:50	580-82652-18	TPH-Dx
EW-2A-121118	12/11/2018 14:49	580-82652-8	TPH-Dx
FWG-EV-121218	12/12/2018 12:40	580-82652-32	TPH-Dx
FWG-WV-121218	12/12/2018 11:40	580-82652-31	TPH-Dx
GW-1-121118	12/11/2018 11:15	580-82652-15	TPH-Dx
GW-20-121118	12/11/2018 10:05	580-82652-16	TPH-Dx
GW-2-121118	12/11/2018 09:50	580-82652-12	TPH-Dx
GW-30-121118	12/11/2018 12:30	580-82652-7	TPH-Dx
GW-3-121118	12/11/2018 12:12	580-82652-6	TPH-Dx, TPHSG

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Sample ID	Sample Date/Time	Lab ID	Analyses
GW-4-121118	12/11/2018 15:00	580-82652-9	TPH-Dx
MW-3-121118	12/11/2018 09:43	580-82652-2	TPH-Dx
MW-4-121118	12/11/2018 09:40	580-82652-1	TPH-Dx
MW-555-121813	12/13/2018 11:10	580-82660-17	TPH-Dx
PZ-7S-12118	12/11/2018 11:24	580-82652-17	TPH-Dx
PZ-8-121118	12/11/2018 12:42	580-82652-14	TPH-Dx
S1-AD-121218	12/12/2018 16:06	580-82660-4	TPH-Dx
S1-AU-121218	12/12/2018 16:00	580-82660-3	TPH-Dx
S1-BD-121218	12/12/2018 16:00	580-82660-2	TPH-Dx
S1-BU-121218	12/12/2018 16:00	580-82660-1	TPH-Dx
S2-AD-121218	12/12/2018 13:40	580-82652-38	TPH-Dx
S2-AU-121218	12/12/2018 13:13	580-82652-39	TPH-Dx
S2-BD-121218	12/12/2018 13:55	580-82652-40	TPH-Dx
S2-BU-121218	12/12/2018 13:55	580-82652-41	TPH-Dx
S3-AD-121318	12/13/2018 08:50	580-82660-6	TPH-Dx
S3-AU-121318	12/13/2018 08:45	580-82660-5	TPH-Dx
S3-BD-121318	12/13/2018 09:00	580-82660-7	TPH-Dx
S3-BU-121318	12/13/2018 09:03	580-82660-8	TPH-Dx
S3-CD-121318	12/13/2018 09:15	580-82660-9	TPH-Dx
S3-CU-121318	12/13/2018 09:20	580-82660-10	TPH-Dx
S4-AD-121318	12/13/2018 10:10	580-82660-12	TPH-Dx
S4-AU-121318	12/13/2018 10:10	580-82660-11	TPH-Dx
S4-BD-121318	12/13/2018 10:12	580-82660-13	TPH-Dx
S4-BU-121318	12/13/2018 10:15	580-82660-14	TPH-Dx
S4-CD-121318	12/13/2018 10:50	580-82660-16	TPH-Dx
S4-CU-121318	12/13/2018 10:41	580-82660-15	TPH-Dx
WG-EV-121218	12/12/2018 12:40	580-82652-34	TPH-Dx
WG-WV-121218	12/12/2018 13:15	580-82652-33	TPH-Dx

Samples were analyzed by Test America, Tacoma, Washington.

A stage 2A summary validation was performed on the analytical results including both the hardcopy (portable document format) and electronic data deliverable, earning EPA OSWER validation label code S2AVEM. Validation was performed by Cari Sayler.

Data qualifiers are assigned based only on the criteria reviewed and do not include calibration or instrument performance issues unless noted in the laboratory narrative.

Qualifiers are summarized in section 4.0 of this report.

## 2.0 Precision, Accuracy, Representativeness, Comparability, and Completeness

<u>Sample analysis frequencies:</u> Quarterly sampling includes 25 water sample locations, and semiannual sampling includes an additional 29 water sample locations. Additionally, 20 of the 29 semi-annual locations are sentry wells which must be sampled if the HCC system has been down for more than 48 hours in the previous quarter. For this round of sampling, quarterly and sentry locations were required. Samples were collected from all required locations and the required analysis was completed by the laboratory for each collected sample. Please note that 6 additional samples associated with the HCC system vaults were also sampled and analyzed. <u>Analysis methods</u>: Each sample was analyzed by method NWTPH-Dx and prepared by method SW3510C. These methods are approved EPA methods and therefore meet comparability requirements. Additionally, samples 2A-W-41-121218 and GW-3-121118 were prepared with method SW3510C a second time, cleaned up with method SW3630C (silica gel) and analyzed by NWTPH-Dx.

<u>Precision, accuracy and completeness:</u> Accuracy and precision measurements were within control limits. A data completeness of 100% was calculated based on 45 of 45 intended sample analyses completed. This meets the project goal of 90%.

# 3.0 Diesel Range Petroleum Hydrocarbon Analysis

<u>Quality control analysis frequencies:</u> The method specifies that a method blank must be analyzed one per analytical batch or one per twenty samples, whichever is more frequent, and a laboratory duplicate must be analyzed one per ten samples. In addition, surrogate compounds must be measured in each field and quality control sample.

Each batch included a method blank, laboratory control sample (LCS), and LCS duplicate (LCSD), as well as appropriate surrogates. Data qualifiers are not required due to a lack of laboratory duplicate results.

<u>Holding times:</u> Unpreserved water samples must be extracted within 7 days of collection. Preserved water samples must be extracted within 14 days of collection. Extracts must be analyzed within 40 days of extraction. Samples were extracted and analyzed within holding with two exceptions:

Sample ID	Days, Sample to Extraction	Days, Extraction to Analysis	Days, Sample to Analysis
GW-3-121118 RE	19	0	19
GW-3-121118 RE	19	0	19
GW-3-121118 (w/ SG)	19	0	19
GW-3-121118 (w/ SG)	19	0	19

These results are qualified as estimated.

<u>Laboratory and field blank results</u>: Criteria for blanks are that analyte concentrations must be below the PQL, or below 5% of the lowest associated sample concentration. No target compounds were detected in the method or field blanks.

<u>Surrogate recoveries:</u> Laboratory control limits were 50-150%. Surrogate recoveries were within limits with one exception:

Sample ID	Surrogate	% Recovery	Lab Control Limit
5-W-56-121118	o-Terphenyl	2894	50 - 150

The laboratory noted matrix interference, and no qualifiers are assigned.

<u>LCS recoveries:</u> Laboratory control limits were 50-120% and 64-120%. LCS recoveries were within limits with one exception:

QC ID	Analyte	% Recovery	Lab Control Limit
LCSD 580-291536/3-B	Motor Oil (>C24-C36)	130	64 - 120

Motor Oil was not detected in the associated sample and no qualifiers are required.

<u>LCS/LCSD RPDs:</u> The laboratory control limit ranged from <24 to <26%. LCS/LCSD RPD values were within limits.

QC ID	Analyte	RPD	Lab Control Limit
LCSD 580-291573/3-A	#2 Diesel (C10-C24)	40	26
LCSD 580-291573/3-A	Motor Oil (>C24-C36)	36	24

Neither diesel nor motor oil were detected in the associated samples, and no qualifiers are required.

<u>Field duplicate RPDs:</u> For concentrations above five times the reporting limit, RPDs were below 50%. For concentrations below five times the reporting limits, concentrations were within +/- two times the reporting limit with two exceptions:

FD ID	Analyte	FD Result (mg/L)	Sample Result (mg/L)	RL (mg/L)
GW-20-121118 / GW-2-121118	#2 Diesel (C10-C24)	0.46	0.13	0.062
GW-20-121118 / GW-2-121118	Motor Oil (>C24-C36)	1	0.27	0.091

These analytes are qualified as estimated in the sample and field duplicate.

<u>Reporting limits</u>: The reporting limit goals are 0.1 mg/L for both diesel range hydrocarbons and oil range hydrocarbons. These goals were met.

<u>Laboratory narrative and flags</u>: No qualifiers were added based on a review of the laboratory narrative.

Diesel and oil range petroleum hydrocarbon data are acceptable for use as qualified.

## 4.0 Validation Qualifiers

Client ID	Analyte(s)	Qualifier	Reason
GW-20-121118	#2 Diesel (C10-C24), Motor Oil (>C24-C36)	J	High FD Difference
GW-2-121118	#2 Diesel (C10-C24), Motor Oil (>C24-C36)	J	High FD Difference
GW-3-121118 RE	#2 Diesel (C10-C24), Motor Oil (>C24-C36)	J	Extraction hold time exceeded
GW-3-121118 (w/ SG)	#2 Diesel (C10-C24)	J	Extraction hold time exceeded
GW-3-121118 (w/ SG)	Motor Oil (>C24-C36)	UJ	Extraction hold time exceeded

#### 5.0 Abbreviations and Definitions

Definition

## **DV Qualifier**

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The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample reporting limit or the amount of contaminant detected in the sample.

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- USEPA Contract Laboratory Program National Functional Guidelines For Superfund Organic Methods Data Review, Office of Superfund Remediation and Technology Innovation, U.S. Environmental Protection Agency, June 2008, USEPA-540-R-008-01.
- USEPA Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use, Office of Solid Waste and Emergency Response, U.S. Environmental Protection Agency, January 2009, EPA 540-R-08-005.



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# DATA VALIDATION REPORT

Skykomish Hydraulic Control and Containment Pilot Study February 2019 Data

Prepared for: Farallon Consulting, LLC 975 5th Avenue NW Issaquah, Washington 98027

March 12, 2019

# 1.0 Introduction

Data validation was performed on the following water samples:

Sample ID	Sample Date/Time	Lab ID	Analyses
S2-AU-021919	02/19/2019 13:35	580-84026-1	TPH-Dx
PZ-8-022019	02/20/2019 10:59	580-84026-10	TPH-Dx
EW-1-022019	02/20/2019 11:39	580-84026-11	TPH-Dx
5-W-43-022019	02/20/2019 12:21	580-84026-12	TPH-Dx
GW-1-022019	02/20/2019 13:06	580-84026-13	TPH-Dx
GW-2-022019	02/20/2019 14:32	580-84026-14	TPH-Dx
S2-AD-021919	02/19/2019 13:40	580-84026-2	TPH-Dx
S2-BU-021919	02/19/2019 13:50	580-84026-3	TPH-Dx
S2-BD-021919	02/19/2019 13:51	580-84026-4	TPH-Dx
WG-WV-021919	02/19/2019 15:14	580-84026-5	TPH-Dx
WG-EV-021919	02/19/2019 15:05	580-84026-6	TPH-Dx
FWG-EV-021919	02/19/2019 15:50	580-84026-7	TPH-Dx
FWG-WV-021919	02/19/2019 15:55	580-84026-8	TPH-Dx
PZ-7S-022019	02/20/2019 10:07	580-84026-9	TPH-Dx

Samples were analyzed by Test America, Tacoma, Washington.

A stage 2A summary validation was performed on the analytical results including both the hardcopy (portable document format) and electronic data deliverable, earning EPA OSWER validation label code S2AVEM. Validation was performed by Cari Sayler.

Data qualifiers are assigned based only on the criteria reviewed and do not include calibration or instrument performance issues unless noted in the laboratory narrative. No qualifiers were assigned based on this review.

# 2.0 Precision, Accuracy, Representativeness, Comparability, and Completeness

<u>Sample analysis frequencies:</u> 14 locations are sampled monthly. Samples were collected from required locations and the required analysis was completed by the laboratory for each collected sample.

<u>Analysis methods</u>: Each sample was analyzed by method NWTPH-Dx and prepared by method SW3510C. These methods are approved EPA methods and therefore meet comparability requirements.

<u>Precision, accuracy and completeness:</u> Accuracy and precision measurements were within control limits. A data completeness of 100% was calculated based on 14 of 14 intended sample analyses completed. This meets the project goal of 90%.

# 3.0 Diesel Range Petroleum Hydrocarbon Analysis

<u>Quality control analysis frequencies:</u> The method specifies that a method blank must be analyzed one per analytical batch or one per twenty samples, whichever is more frequent, and a laboratory duplicate must be analyzed one per ten samples. In addition, surrogate compounds must be measured in each field and quality control sample.

This batch included a method blank, laboratory control sample (LCS), and LCS duplicate (LCSD), as well as appropriate surrogates. Data qualifiers are not required due to a lack of laboratory duplicate results.

<u>Holding times:</u> Unpreserved water samples must be extracted within 7 days of collection. Preserved water samples must be extracted within 14 days of collection. Extracts must be analyzed within 40 days of extraction. Samples were extracted and analyzed within holding times.

<u>Laboratory and field blank results</u>: Criteria for blanks are that analyte concentrations must be below the PQL, or below 5% of the lowest associated sample concentration. No target compounds were detected in the method or field blanks.

<u>Surrogate recoveries:</u> Laboratory control limits were 50-150%. Surrogate recoveries were within limits.

<u>LCS recoveries:</u> Laboratory control limits were 50-120% and 64-120%. LCS recoveries were within limits.

<u>LCS/LCSD RPDs:</u> The laboratory control limits were <24 and <26%. LCS/LCSD RPD values were within limits.

<u>Reporting limits</u>: The reporting limit goals are 0.1 mg/L for both diesel range hydrocarbons and oil range hydrocarbons. These goals were met.

<u>Laboratory narrative and flags:</u> No qualifiers were added based on a review of the laboratory narrative.

Diesel and oil range petroleum hydrocarbon data are acceptable for use as reported.

# 4.0 Abbreviations and Definitions

## DV Qualifier De

U

<u>Definition</u>

The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample reporting limit or the amount of contaminant detected in the sample.

DV Qualifier	Definition
J	The analyte was positively identified. The associated numerical value is the
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a tentative identification.
UJ	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.
R	The sample result is rejected. The presence or absence of the analyte cannot be verified and data are not usable.
R1	The sample result has been replaced by a more reliable or more conservative result.
R2	The sample result has been replaced by a result from a different analysis method.
Abbreviation	Definition
DV	Data Validation
LCS	Laboratory control sample
LCSD	Laboratory control sample duplicate
MS	Matrix spike
MSD	Matrix spike duplicate
RL	Reporting limit
RPD	Relative percent difference
RSD	Relative standard deviation

- USEPA National Functional Guidelines for Organic Superfund Methods Data Review, Office of Superfund Remediation and Technology Innovation, U.S. Environmental Protection Agency. January 2017, EPA-540-R-2017-002.
- USEPA Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use, Office of Solid Waste and Emergency Response, U.S. Environmental Protection Agency, January 2009, EPA 540-R-08-005.



# DATA VALIDATION REPORT

Skykomish Hydraulic Control and Containment Pilot Study March 2019 Data

Prepared for: Farallon Consulting, LLC 975 5th Avenue NW Issaquah, Washington 98027

April 22, 2019

## 1.0 Introduction

Data validation was performed on the following water samples:

Sample ID*	Sample Date/Time	Lab ID	Analyses
5-W-43-031919	03/19/2019 17:07	580-84844-1	TPH-Dx
EW-1-031919	03/19/2019 16:36	580-84844-2	TPH-Dx
FGW-WV-031919	03/19/2019 15:00	580-84844-4	TPH-Dx
FWG-EV-031919	03/19/2019 14:38	580-84844-11	TPH-Dx
GW-1-031919	03/19/2019 17:20	580-84844-9	TPH-Dx
GW-2-031919	03/19/2019 17:54	580-84844-14	TPH-Dx
PZ-7S-031919	03/19/2019 16:11	580-84844-10	TPH-Dx
PZ-8-031919	03/19/2019 15:45	580-84844-3	TPH-Dx
S2-AD-031919	03/19/2019 11:40	580-84844-7	TPH-Dx
S2-AU-031919	03/19/2019 11:18	580-84844-8	TPH-Dx
S2-BD-031919	03/19/2019 12:18	580-84844-13	TPH-Dx
S2-BU-031919	03/19/2019 11:55	580-84844-6	TPH-Dx
WG-EV-031919	03/19/2019 14:25	580-84844-12	TPH-Dx
WG-WV-031919	03/19/2019 14:20	580-84844-5	TPH-Dx

* Sample PZ-7S-031919 was reported by the laboratory as PZ-75-031919. The correct sample ID is used in the above table.

Samples were analyzed by Test America, Tacoma, Washington.

A stage 2A summary validation was performed on the analytical results including both the hardcopy (portable document format) and electronic data deliverable, earning EPA OSWER validation label code S2AVEM. Validation was performed by Cari Sayler.

Data qualifiers are assigned based only on the criteria reviewed and do not include calibration or instrument performance issues unless noted in the laboratory narrative. No qualifiers were assigned based on this review.

# 2.0 Precision, Accuracy, Representativeness, Comparability, and Completeness

<u>Sample analysis frequencies:</u> 14 locations are sampled monthly. Samples were collected from required locations and the required analysis was completed by the laboratory for each collected sample.

<u>Analysis methods</u>: Each sample was analyzed by method NWTPH-Dx and prepared by method SW3510C. These methods are approved EPA methods and therefore meet comparability requirements.

<u>Precision, accuracy and completeness:</u> Accuracy and precision measurements were within control limits. A data completeness of 100% was calculated based on 14 of 14 intended sample analyses completed. This meets the project goal of 90%.

## 3.0 Diesel Range Petroleum Hydrocarbon Analysis

<u>Quality control analysis frequencies:</u> The method specifies that a method blank must be analyzed one per analytical batch or one per twenty samples, whichever is more frequent, and a laboratory duplicate must be analyzed one per ten samples. In addition, surrogate compounds must be measured in each field and quality control sample.

Each batch included a method blank, laboratory control sample (LCS), and LCS duplicate (LCSD), as well as appropriate surrogates. Data qualifiers are not required due to a lack of laboratory duplicate results.

<u>Holding times:</u> Unpreserved water samples must be extracted within 7 days of collection. Preserved water samples must be extracted within 14 days of collection. Extracts must be analyzed within 40 days of extraction. Samples were extracted and analyzed within holding times.

<u>Laboratory and field blank results</u>: Criteria for blanks are that analyte concentrations must be below the PQL, or below 5% of the lowest associated sample concentration. No target compounds were detected in the method or field blanks.

<u>Surrogate recoveries:</u> Laboratory control limits were 50-150%. Surrogate recoveries were within limits.

<u>LCS recoveries:</u> Laboratory control limits were 50-120% and 64-120%. LCS recoveries were within limits.

<u>LCS/LCSD RPDs:</u> The laboratory control limits were <24 and <26%. LCS/LCSD RPD values were within limits.

<u>Reporting limits</u>: The reporting limit goals are 0.1 mg/L for both diesel range hydrocarbons and oil range hydrocarbons. These goals were met.

<u>Laboratory narrative and flags:</u> No qualifiers were added based on a review of the laboratory narrative.

Diesel and oil range petroleum hydrocarbon data are acceptable for use as reported.

# 4.0 Abbreviations and Definitions

<u>DV Qualifier</u> U J	<u>Definition</u> The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample reporting limit or the amount of contaminant detected in the sample. The analyte was positively identified. The associated numerical value is the approximate concentration of the analyte in the sample.
Ν	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a tentative identification.
UJ	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.
R	The sample result is rejected. The presence or absence of the analyte cannot be verified and data are not usable.
R1	The sample result has been replaced by a more reliable or more conservative result
R2	The sample result has been replaced by a result from a different analysis method.
Abbreviation DV LCS LCSD MS MSD RL RPD RSD	Definition Data Validation Laboratory control sample Laboratory control sample duplicate Matrix spike Matrix spike duplicate Reporting limit Relative percent difference Relative standard deviation

- USEPA National Functional Guidelines for Organic Superfund Methods Data Review, Office of Superfund Remediation and Technology Innovation, U.S. Environmental Protection Agency. January 2017, EPA-540-R-2017-002.
- USEPA Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use, Office of Solid Waste and Emergency Response, U.S. Environmental Protection Agency, January 2009, EPA 540-R-08-005.



# DATA VALIDATION REPORT

Skykomish Hydraulic Control and Containment Pilot Study April 2019 Data

Prepared for: Farallon Consulting, LLC 975 5th Avenue NW Issaquah, Washington 98027

May 08, 2019

## 1.0 Introduction

Data validation was performed on the following water samples:

Sample ID	Sample Date/Time	Lab ID	Analyses
5-W-43-041619	04/16/2019 13:54	580-85506-9	TPH-Dx
EW-1-041619	04/16/2019 14:07	580-85506-10	TPH-Dx
FWG-EV-041619	04/16/2019 12:00	580-85506-7	TPH-Dx
FWG-WV-041619	04/16/2019 12:05	580-85506-8	TPH-Dx
GW-1-041619	04/16/2019 14:46	580-85506-12	TPH-Dx
GW-2-041619	04/16/2019 15:40	580-85506-14	TPH-Dx
PZ-7S-041619	04/16/2019 15:24	580-85506-13	TPH-Dx
PZ-8-041619	04/16/2019 14:35	580-85506-11	TPH-Dx
S2-AD-041619	04/16/2019 11:03	580-85506-4	TPH-Dx
S2-AU-041619	04/16/2019 10:40	580-85506-3	TPH-Dx
S2-BD-041619	04/16/2019 10:30	580-85506-2	TPH-Dx
S2-BU-041619	04/16/2019 10:30	580-85506-1	TPH-Dx
WG-EV-041619	04/16/2019 11:10	580-85506-5	TPH-Dx
WG-WV-041619	04/16/2019 11:25	580-85506-6	TPH-Dx

Samples were analyzed by Test America, Tacoma, Washington.

A stage 2A summary validation was performed on the analytical results including both the hardcopy (portable document format) and electronic data deliverable, earning EPA OSWER validation label code S2AVEM. Validation was performed by Cari Sayler.

Data qualifiers are assigned based only on the criteria reviewed and do not include calibration or instrument performance issues unless noted in the laboratory narrative. No qualifiers were assigned based on this review.

# 2.0 Precision, Accuracy, Representativeness, Comparability, and Completeness

<u>Sample analysis frequencies:</u> 14 locations are sampled monthly. Samples were collected from required locations and the required analysis was completed by the laboratory for each collected sample.

<u>Analysis methods</u>: Each sample was analyzed by method NWTPH-Dx and prepared by method SW3510C. These methods are approved EPA methods and therefore meet comparability requirements.

<u>Precision, accuracy and completeness:</u> Accuracy and precision measurements were within control limits. A data completeness of 100% was calculated based on 14 of 14 intended sample analyses completed. This meets the project goal of 90%.

# 3.0 Diesel Range Petroleum Hydrocarbon Analysis

<u>Quality control analysis frequencies:</u> The method specifies that a method blank must be analyzed one per analytical batch or one per twenty samples, whichever is more frequent, and a laboratory duplicate must be analyzed one per ten samples. In addition, surrogate compounds must be measured in each field and quality control sample.

Each batch included a method blank, laboratory control sample (LCS), and LCS duplicate (LCSD), as well as appropriate surrogates. Data qualifiers are not required due to a lack of laboratory duplicate results.

<u>Holding times:</u> Unpreserved water samples must be extracted within 7 days of collection. Preserved water samples must be extracted within 14 days of collection. Extracts must be analyzed within 40 days of extraction. Samples were extracted and analyzed within holding times.

<u>Laboratory blank results</u>: Criteria for blanks are that analyte concentrations must be below the PQL, or below 5% of the lowest associated sample concentration. No target compounds were detected in the method blanks.

<u>Surrogate recoveries:</u> Laboratory control limits were 50-150%. Surrogate recoveries were within limits.

<u>LCS recoveries:</u> Laboratory control limits were 50-120% and 64-120%. LCS recoveries were within limits.

<u>LCS/LCSD RPDs:</u> The laboratory control limits were <24 and <26%. LCS/LCSD RPD values were within limits.

<u>Reporting limits</u>: The reporting limit goals are 0.1 mg/L for both diesel range hydrocarbons and oil range hydrocarbons. These goals were met.

<u>Laboratory narrative and flags:</u> No qualifiers were added based on a review of the laboratory narrative.

Diesel and oil range petroleum hydrocarbon data are acceptable for use as reported.

# 4.0 Abbreviations and Definitions

## DV Qualifier Definition

U

The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample reporting limit or the amount of contaminant detected in the sample.

DV Qualifier	Definition
J	The analyte was positively identified. The associated numerical value is the
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a tentative identification.
UJ	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.
R	The sample result is rejected. The presence or absence of the analyte cannot be verified and data are not usable.
R1	The sample result has been replaced by a more reliable or more conservative result.
R2	The sample result has been replaced by a result from a different analysis method.
Abbreviation	Definition
DV	Data Validation
LCS	Laboratory control sample
LCSD	Laboratory control sample duplicate
MS	Matrix spike
MSD	Matrix spike duplicate
RL	Reporting limit
RPD	Relative percent difference
RSD	Relative standard deviation

- USEPA National Functional Guidelines for Organic Superfund Methods Data Review, Office of Superfund Remediation and Technology Innovation, U.S. Environmental Protection Agency. January 2017, EPA-540-R-2017-002.
- USEPA Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use, Office of Solid Waste and Emergency Response, U.S. Environmental Protection Agency, January 2009, EPA 540-R-08-005.



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# DATA VALIDATION REPORT

Skykomish Hydraulic Control and Containment Pilot Study May 2019 Data

Prepared for: Farallon Consulting, LLC 975 5th Avenue NW Issaquah, Washington 98027

June 13, 2019

# 1.0 Introduction

Data validation was performed on the following water samples:

Sample ID	Sample Date/Time	Lab ID	Analyses
S2-BD-051419	05/14/2019 09:40	580-86180-1	TPH-Dx
FWG-EV-051419	05/14/2019 13:40	580-86180-10	TPH-Dx
PZ-8-051419	05/14/2019 14:39	580-86180-11	TPH-Dx
EW-1-051419	05/14/2019 15:04	580-86180-12	TPH-Dx
5-W-43-051419	05/14/2019 15:49	580-86180-13	TPH-Dx
GW-1-051419	05/14/2019 16:26	580-86180-14	TPH-Dx
GW-2-051419	05/14/2019 09:52	580-86180-2	TPH-Dx
S2-BU-051419	05/14/2019 10:15	580-86180-3	TPH-Dx
S2-AD-051419	05/14/2019 10:30	580-86180-4	TPH-Dx
S2-AU-051419	05/14/2019 10:50	580-86180-5	TPH-Dx
WG-EV-051419	05/14/2019 11:26	580-86180-6	TPH-Dx
WG-WV-051419	05/14/2019 11:26	580-86180-7	TPH-Dx
PZ-7S-051419	05/14/2019 12:42	580-86180-8	TPH-Dx
FWG-WV-051419	05/14/2019 13:40	580-86180-9	TPH-Dx

Samples were analyzed by Test America, Tacoma, Washington.

A stage 2A summary validation was performed on the analytical results including both the hardcopy (portable document format) and electronic data deliverable, earning EPA OSWER validation label code S2AVEM. Validation was performed by Cari Sayler.

Data qualifiers are assigned based only on the criteria reviewed and do not include calibration or instrument performance issues unless noted in the laboratory narrative. No qualifiers were assigned based on this review.

## 2.0 Precision, Accuracy, Representativeness, Comparability, and Completeness

<u>Sample analysis frequencies:</u> 14 locations are sampled monthly. Samples were collected from required locations and the required analysis was completed by the laboratory for each collected

sample. Please note: samples PZ-8-051419 and PZ-7S-051419 were reported by the laboratory with an 'S' instead of a 'Z'. The correct sample ID has been used in the above table.

<u>Analysis methods</u>: Each sample was analyzed by method NWTPH-Dx and prepared by method SW3510C. These methods are approved EPA methods and therefore meet comparability requirements.

<u>Precision, accuracy and completeness:</u> Accuracy and precision measurements were within control limits. A data completeness of 100% was calculated based on 14 of 14 intended sample analyses completed. This meets the project goal of 90%.

# 3.0 Diesel Range Petroleum Hydrocarbon Analysis

<u>Quality control analysis frequencies:</u> The method specifies that a method blank must be analyzed one per analytical batch or one per twenty samples, whichever is more frequent, and a laboratory duplicate must be analyzed one per ten samples. In addition, surrogate compounds must be measured in each field and quality control sample.

This batch included a method blank, laboratory control sample (LCS), and LCS duplicate (LCSD), as well as appropriate surrogates. Data qualifiers are not required due to a lack of laboratory duplicate results.

<u>Holding times:</u> Unpreserved water samples must be extracted within 7 days of collection. Preserved water samples must be extracted within 14 days of collection. Extracts must be analyzed within 40 days of extraction. Samples were extracted and analyzed within holding times.

<u>Laboratory blank results</u>: Criteria for blanks are that analyte concentrations must be below the PQL, or below 5% of the lowest associated sample concentration. No target compounds were detected in the method blanks.

<u>Surrogate recoveries:</u> Laboratory control limits were 50-150%. Surrogate recoveries were within limits.

<u>LCS recoveries:</u> Laboratory control limits were 50-120% and 64-120%. LCS recoveries were within limits.

<u>LCS/LCSD RPDs:</u> The laboratory control limits were <24 and <26%. LCS/LCSD RPD values were within limits.

<u>Reporting limits</u>: The reporting limit goals are 0.1 mg/L for both diesel range hydrocarbons and oil range hydrocarbons. These goals were met.

<u>Laboratory narrative and flags:</u> No qualifiers were added based on a review of the laboratory narrative.

Diesel and oil range petroleum hydrocarbon data are acceptable for use as reported.

# 4.0 Abbreviations and Definitions

<u>DV Qualifier</u> U J	<u>Definition</u> The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample reporting limit or the amount of contaminant detected in the sample. The analyte was positively identified. The associated numerical value is the approximate concentration of the analyte in the sample.
Ν	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a tentative identification.
UJ	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.
R	The sample result is rejected. The presence or absence of the analyte cannot be verified and data are not usable.
R1	The sample result has been replaced by a more reliable or more conservative result.
R2	The sample result has been replaced by a result from a different analysis method.
Abbreviation DV LCS LCSD MS MSD RL RPD RSD	Definition Data Validation Laboratory control sample Laboratory control sample duplicate Matrix spike Matrix spike duplicate Reporting limit Relative percent difference Relative standard deviation

- USEPA National Functional Guidelines for Organic Superfund Methods Data Review, Office of Superfund Remediation and Technology Innovation, U.S. Environmental Protection Agency. January 2017, EPA-540-R-2017-002.
- USEPA Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use, Office of Solid Waste and Emergency Response, U.S. Environmental Protection Agency, January 2009, EPA 540-R-08-005.



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# DATA VALIDATION REPORT

Skykomish Hydraulic Control and Containment Pilot Study June 2019 Data

Prepared for: Farallon Consulting, LLC 975 5th Avenue NW Issaquah, Washington 98027

July 19, 2019

## 1.0 Introduction

Data validation was performed on the following water samples:

Sample ID	Sample Date/Time	Lab ID	Analyses
GW-1-061819	06/18/2019 09:51	580-87060-1	TPH-Dx
S2-BU-061819	06/18/2019 15:30	580-87060-10	TPH-Dx
S2-AD-061819	06/18/2019 15:39	580-87060-11	TPH-Dx
WG-WV-061819	06/18/2019 16:05	580-87060-12	TPH-Dx
WG-EV-061819	06/18/2019 16:10	580-87060-13	TPH-Dx
FWG-EV-061819	06/18/2019 16:48	580-87060-14	TPH-Dx
FWG-WV-061819	06/18/2019 16:52	580-87060-15	TPH-Dx
PZ-7S-061819	06/18/2019 10:00	580-87060-2	TPH-Dx
PZ-8-061819	06/18/2019 11:15	580-87060-3	TPH-Dx
5-W-43-061819	06/18/2019 11:16	580-87060-4	TPH-Dx
EW-1-061819	06/18/2019 14:18	580-87060-5	TPH-Dx
GW-2-061819	06/18/2019 14:35	580-87060-6	TPH-Dx
GW-20-061819	06/18/2019 14:45	580-87060-7	TPH-Dx
S2-BD-061819	06/18/2019 14:57	580-87060-8	TPH-Dx
S2-AU-061819	06/18/2019 15:12	580-87060-9	TPH-Dx

Samples were analyzed by Test America, Tacoma, Washington. A stage 2A summary validation was performed on the analytical results including both the hardcopy (portable document format) and electronic data deliverable, earning EPA OSWER validation label code S2AVEM. Validation was performed by Cari Sayler.

Data qualifiers are assigned based only on the criteria reviewed and do not include calibration or instrument performance issues unless noted in the laboratory narrative. No qualifiers were assigned based on this review.

# 2.0 Precision, Accuracy, Representativeness, Comparability, and Completeness

<u>Sample analysis frequencies:</u> 14 locations are sampled monthly. Samples were collected from required locations and the required analysis was completed by the laboratory for each collected sample. Sample identifiers matched the chain of custody with one exception: Sample 5-W-43-061819 was listed as S-W-43-061819. The corrected sample ID has been used in the above table.

<u>Analysis methods</u>: Each sample was analyzed by method NWTPH-Dx and prepared by method SW3510C. These methods are approved EPA methods and therefore meet comparability requirements.

<u>Precision, accuracy and completeness:</u> Accuracy and precision measurements were within control limits. A data completeness of 100% was calculated based on 14 of 14 intended sample analyses completed. This meets the project goal of 90%.

## 3.0 Diesel Range Petroleum Hydrocarbon Analysis

<u>Quality control analysis frequencies:</u> The method specifies that a method blank must be analyzed one per analytical batch or one per twenty samples, whichever is more frequent, and a laboratory duplicate must be analyzed one per ten samples. In addition, surrogate compounds must be measured in each field and quality control sample.

This batch included a method blank, laboratory control sample (LCS), and LCS duplicate (LCSD), as well as appropriate surrogates. Data qualifiers are not required due to a lack of laboratory duplicate results.

<u>Holding times:</u> Unpreserved water samples must be extracted within 7 days of collection. Preserved water samples must be extracted within 14 days of collection. Extracts must be analyzed within 40 days of extraction. Samples were extracted and analyzed within holding times.

<u>Laboratory blank results</u>: Criteria for blanks are that analyte concentrations must be below the PQL, or below 5% of the lowest associated sample concentration. No target compounds were detected in the method blanks.

<u>Surrogate recoveries:</u> Laboratory control limits were 50-150%. Surrogate recoveries were within limits.

<u>LCS recoveries:</u> Laboratory control limits were 50-120% and 64-120%. LCS recoveries were within limits.

<u>LCS/LCSD RPDs:</u> The laboratory control limits were <24 and <26%. LCS/LCSD RPD values were within limits.

<u>Field duplicate variability:</u> Target analytes were not detected in the sample or field duplicate, showing good agreement.

<u>Reporting limits</u>: The reporting limit goals are 0.1 mg/L for both diesel range hydrocarbons and oil range hydrocarbons. These goals were met.

<u>Laboratory narrative and flags:</u> No qualifiers were added based on a review of the laboratory narrative.

Diesel and oil range petroleum hydrocarbon data are acceptable for use as reported.

# 4.0 Abbreviations and Definitions

<u>DV Qualifier</u> U J	Definition The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample reporting limit or the amount of contaminant detected in the sample. The analyte was positively identified. The associated numerical value is the
Ν	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a tentative identification.
UJ	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.
R	The sample result is rejected. The presence or absence of the analyte cannot be verified and data are not usable.
R1	The sample result has been replaced by a more reliable or more conservative result.
R2	The sample result has been replaced by a result from a different analysis method.
Abbreviation DV LCS LCSD MS MSD RL RPD RSD	Definition Data Validation Laboratory control sample Laboratory control sample duplicate Matrix spike Matrix spike duplicate Reporting limit Relative percent difference Relative standard deviation

- USEPA National Functional Guidelines for Organic Superfund Methods Data Review, Office of Superfund Remediation and Technology Innovation, U.S. Environmental Protection Agency. January 2017, EPA-540-R-2017-002.
- USEPA Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use, Office of Solid Waste and Emergency Response, U.S. Environmental Protection Agency, January 2009, EPA 540-R-08-005.



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# DATA VALIDATION REPORT

Skykomish Hydraulic Control and Containment Pilot Study July 2019 Data

Prepared for: Farallon Consulting, LLC 975 5th Avenue NW Issaquah, Washington 98027

August 19, 2019

# 1.0 Introduction

Data validation was performed on the following water samples:

Sample ID	Sample Date/Time	Lab ID	Analyses
5-W-43-072519	07/25/2019 11:25	580-87965-1	TPH-Dx
S2-AD-072519	07/25/2019 15:04	580-87965-10	TPH-Dx
S2-AU-072519	07/25/2019 15:05	580-87965-11	TPH-Dx
WG-WV-072519	07/25/2019 15:13	580-87965-12	TPH-Dx
FWG-EV-072519	07/25/2019 15:33	580-87965-13	TPH-Dx
FWG-WV-072519	07/25/2019 15:38	580-87965-14	TPH-Dx
EW-1-072519	07/25/2019 11:30	580-87965-2	TPH-Dx
GW-1-072519	07/25/2019 12:20	580-87965-3	TPH-Dx
PZ-8-072519	07/25/2019 12:30	580-87965-4	TPH-Dx
GW-2-072519	07/25/2019 13:12	580-87965-5	TPH-Dx
PZ-7S-072519	07/25/2019 13:22	580-87965-6	TPH-Dx
S2-BD-072519	07/25/2019 14:35	580-87965-7	TPH-Dx
S2-BU-072519	07/25/2019 14:42	580-87965-8	TPH-Dx
WG-EV-072519	07/25/2019 14:35	580-87965-9	TPH-Dx

Samples were analyzed by Test America, Tacoma, Washington.

A stage 2A summary validation was performed on the analytical results including both the hardcopy (portable document format) and electronic data deliverable, earning EPA OSWER validation label code S2AVEM. Validation was performed by Cari Sayler.

Data qualifiers are assigned based only on the criteria reviewed and do not include calibration or instrument performance issues unless noted in the laboratory narrative. No qualifiers were assigned based on this review.

# 2.0 Precision, Accuracy, Representativeness, Comparability, and Completeness

<u>Sample analysis frequencies:</u> 14 locations are sampled monthly. Samples were collected from required locations and the required analysis was completed by the laboratory for each collected

sample. Please note: sample 5-W-43-072519 was reported by the laboratory beginning with an 'S' instead of a '5'. The correct sample ID has been used in the above table.

<u>Analysis methods</u>: Each sample was analyzed by method NWTPH-Dx and prepared by method SW3510C. These methods are approved EPA methods and therefore meet comparability requirements.

<u>Precision, accuracy and completeness:</u> Accuracy and precision measurements were within control limits. A data completeness of 100% was calculated based on 14 of 14 intended sample analyses completed. This meets the project goal of 90%.

# 3.0 Diesel Range Petroleum Hydrocarbon Analysis

<u>Quality control analysis frequencies:</u> The method specifies that a method blank must be analyzed one per analytical batch or one per twenty samples, whichever is more frequent, and a laboratory duplicate must be analyzed one per ten samples. In addition, surrogate compounds must be measured in each field and quality control sample.

Each batch included a method blank, laboratory control sample (LCS), and LCS duplicate (LCSD), as well as appropriate surrogates. Data qualifiers are not required due to a lack of laboratory duplicate results.

<u>Holding times:</u> Unpreserved water samples must be extracted within 7 days of collection. Preserved water samples must be extracted within 14 days of collection. Extracts must be analyzed within 40 days of extraction. Samples were extracted and analyzed within holding times.

<u>Laboratory blank results</u>: Criteria for blanks are that analyte concentrations must be below the PQL, or below 5% of the lowest associated sample concentration. No target compounds were detected in the method blanks.

<u>Surrogate recoveries:</u> Laboratory control limits were 50-150%. Surrogate recoveries were within limits with one exception:

Sample ID	Surrogate	% Recovery	Lab Control Limit
FWG-WV-072519	o-Terphenyl	39	50 - 150

The laboratory noted matrix interference, and no qualifiers are assigned.

<u>LCS recoveries:</u> Laboratory control limits were 50-120% and 64-120%. LCS recoveries were within limits.

<u>LCS/LCSD RPDs:</u> The laboratory control limits were <24 and <26%. LCS/LCSD RPD values were within limits.

<u>Reporting limits</u>: The reporting limit goals are 0.1 mg/L for both diesel range hydrocarbons and oil range hydrocarbons. These goals were met.

<u>Laboratory narrative and flags:</u> No qualifiers were added based on a review of the laboratory narrative.

Diesel and oil range petroleum hydrocarbon data are acceptable for use as reported.

# 4.0 Abbreviations and Definitions

<u>DV Qualifier</u> U J	<u>Definition</u> The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample reporting limit or the amount of contaminant detected in the sample. The analyte was positively identified. The associated numerical value is the approximate concentration of the analyte in the sample
Ν	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a tentative identification.
UJ	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.
R	The sample result is rejected. The presence or absence of the analyte cannot be verified and data are not usable.
R1	The sample result has been replaced by a more reliable or more conservative result.
R2	The sample result has been replaced by a result from a different analysis method.
Abbreviation DV LCS LCSD MS MSD RL RPD RSD	Definition Data Validation Laboratory control sample Laboratory control sample duplicate Matrix spike Matrix spike duplicate Reporting limit Relative percent difference Relative standard deviation

- USEPA National Functional Guidelines for Organic Superfund Methods Data Review, Office of Superfund Remediation and Technology Innovation, U.S. Environmental Protection Agency. January 2017, EPA-540-R-2017-002.
- USEPA Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use, Office of Solid Waste and Emergency Response, U.S. Environmental Protection Agency, January 2009, EPA 540-R-08-005.



# DATA VALIDATION REPORT

Skykomish Hydraulic Control and Containment Pilot Study August 2019 Data

Prepared for: Farallon Consulting, LLC 975 5th Avenue NW Issaquah, Washington 98027

July 19, 2019

## 1.0 Introduction

Data validation was performed on the following water samples:

Sample ID	Sample Date/Time	Lab ID	Analyses
S2-BD-082019	08/20/2019 10:36	580-88597-1	TPH-Dx
S2-BU-082019	08/20/2019 11:05	580-88597-2	TPH-Dx
EW1-082019	08/20/2019 11:15	580-88597-3	TPH-Dx
5-W-43-082019	08/20/2019 11:18	580-88597-4	TPH-Dx
S2-AD-082019	08/20/2019 11:35	580-88597-5	TPH-Dx
S2-AU-082019	08/20/2019 12:05	580-88597-6	TPH-Dx
GW-1-082019	08/20/2019 12:17	580-88597-7	TPH-Dx
PZ-8-082019	08/20/2019 11:50	580-88597-8	TPH-Dx
WG-EV-082019	08/20/2019 14:05	580-88597-9	TPH-Dx
WG-WV-082019	08/20/2019 14:35	580-88597-10	TPH-Dx
PZ-7S-082019	08/20/2019 14:29	580-88597-11	TPH-Dx
GW-2-082019	08/20/2019 14:30	580-88597-12	TPH-Dx
FWG-EV-082019	08/20/2019 15:08	580-88597-13	TPH-Dx
FWG-WV-082019	08/20/2019 15:09	580-88597-14	TPH-Dx

Samples were analyzed by Test America, Tacoma, Washington.

A stage 2A summary validation was performed on the analytical results including both the hardcopy (portable document format) and electronic data deliverable, earning EPA OSWER validation label code S2AVEM. Validation was performed by Cari Sayler.

Data qualifiers are assigned based only on the criteria reviewed and do not include calibration or instrument performance issues unless noted in the laboratory narrative. No qualifiers were assigned based on this review.

# 2.0 Precision, Accuracy, Representativeness, Comparability, and Completeness

<u>Sample analysis frequencies:</u> 14 locations are sampled monthly. Samples were collected from required locations and the required analysis was completed by the laboratory for each collected sample.

<u>Analysis methods</u>: Each sample was analyzed by method NWTPH-Dx and prepared by method SW3510C. These methods are approved EPA methods and therefore meet comparability requirements.

<u>Precision, accuracy and completeness:</u> Accuracy and precision measurements were within control limits. A data completeness of 100% was calculated based on 14 of 14 intended sample analyses completed. This meets the project goal of 90%.

# 3.0 Diesel Range Petroleum Hydrocarbon Analysis

<u>Quality control analysis frequencies:</u> The method specifies that a method blank must be analyzed one per analytical batch or one per twenty samples, whichever is more frequent, and a laboratory duplicate must be analyzed one per ten samples. In addition, surrogate compounds must be measured in each field and quality control sample.

Each batch included a method blank, laboratory control sample (LCS), and LCS duplicate (LCSD), as well as appropriate surrogates. Data qualifiers are not required due to a lack of laboratory duplicate results.

<u>Holding times:</u> Unpreserved water samples must be extracted within 7 days of collection. Preserved water samples must be extracted within 14 days of collection. Extracts must be analyzed within 40 days of extraction. Samples were extracted and analyzed within holding times.

<u>Laboratory blank results</u>: Criteria for blanks are that analyte concentrations must be below the PQL, or below 5% of the lowest associated sample concentration. No target compounds were detected in the method blanks.

<u>Surrogate recoveries:</u> Laboratory control limits were 50-150%. Surrogate recoveries were within limits.

<u>LCS recoveries:</u> Laboratory control limits were 50-120% and 64-120%. LCS recoveries were within limits.

<u>LCS/LCSD RPDs:</u> The laboratory control limits were <24 and <26%. LCS/LCSD RPD values were within limits.

<u>Reporting limits</u>: The reporting limit goals are 0.1 mg/L for both diesel range hydrocarbons and oil range hydrocarbons. These goals were met.

<u>Laboratory narrative and flags:</u> No qualifiers were added based on a review of the laboratory narrative.

Diesel and oil range petroleum hydrocarbon data are acceptable for use as reported.

# 4.0 Abbreviations and Definitions

## DV Qualifier Definition

U

The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample reporting limit or the amount of contaminant detected in the sample.

DV Qualifier	Definition
J	The analyte was positively identified. The associated numerical value is the
N	approximate concentration of the analyte in the sample. The analysis indicates the presence of an analyte for which there is presumptive evidence to make a tentative identification.
UJ	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise
R	The sample result is rejected. The presence or absence of the analyte cannot be verified and data are not usable.
R1	The sample result has been replaced by a more reliable or more conservative result.
R2	The sample result has been replaced by a result from a different analysis method.
Abbreviation	Definition
DV	Data Validation
LCS	Laboratory control sample
LCSD	Laboratory control sample duplicate
MS	Matrix spike
MSD	Matrix spike duplicate
RL	Reporting limit
RPD	Relative percent difference
RSD	Relative standard deviation

- USEPA National Functional Guidelines for Organic Superfund Methods Data Review, Office of Superfund Remediation and Technology Innovation, U.S. Environmental Protection Agency. January 2017, EPA-540-R-2017-002.
- USEPA Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use, Office of Solid Waste and Emergency Response, U.S. Environmental Protection Agency, January 2009, EPA 540-R-08-005.



# DATA VALIDATION REPORT

Skykomish Hydraulic Control and Containment Pilot Study September 2019 Data

Prepared for: Farallon Consulting, LLC 975 5th Avenue NW Issaquah, Washington 98027

October 14, 2019

#### 1.0 Introduction

Data validation was performed on the following water samples:

Sample ID	Sample Date/Time	Lab ID	Analyses
GW-1-091919	09/19/2019 08:20	580-89413-1	TPH-Dx
WG-EV-091919	09/19/2019 10:25	580-89413-10	TPH-Dx
FWG-EV-091919	09/19/2019 10:47	580-89413-11	TPH-Dx
S2-AU-091919	09/19/2019 11:15	580-89413-12	TPH-Dx
S2-AD-091919	09/19/2019 11:22	580-89413-13	TPH-Dx
S2-BD-091919	09/19/2019 11:28	580-89413-14	TPH-Dx
S2-BU-091919	09/19/2019 11:30	580-89413-15	TPH-Dx
GW-20-091919	09/19/2019 16:30	580-89413-16	TPH-Dx
5-W-43-091919	09/19/2019 08:22	580-89413-2	TPH-Dx
PZ-7S-091919	09/19/2019 08:24	580-89413-3	TPH-Dx
PZ-8-091919	09/19/2019 09:20	580-89413-4	TPH-Dx
EW-1-091919	09/19/2019 09:21	580-89413-5	TPH-Dx
EW-10-091919	09/19/2019 09:25	580-89413-6	TPH-Dx
GW-2-091919	09/19/2019 09:21	580-89413-7	TPH-Dx
WG-WV-091919	09/19/2019 10:09	580-89413-8	TPH-Dx
FWG-WV-091919	09/19/2019 10:25	580-89413-9	TPH-Dx

*Please note that sample PZ-7S-091919 was reported by the laboratory as PZ-75-091919. The correct sample ID is used above.

Samples were analyzed by Test America, Tacoma, Washington.

A stage 2A summary validation was performed on the analytical results including both the hardcopy (portable document format) and electronic data deliverable, earning EPA OSWER validation label code S2AVEM. Validation was performed by Cari Sayler.

Data qualifiers are assigned based only on the criteria reviewed and do not include calibration or instrument performance issues unless noted in the laboratory narrative. No qualifiers were assigned based on this review.
## 2.0 Precision, Accuracy, Representativeness, Comparability, and Completeness

<u>Sample analysis frequencies:</u> 14 locations are sampled monthly. Samples were collected from required locations and the required analysis was completed by the laboratory for each collected sample.

<u>Analysis methods</u>: Each sample was analyzed by method NWTPH-Dx and prepared by method SW3510C. These methods are approved EPA methods and therefore meet comparability requirements.

<u>Precision, accuracy and completeness:</u> Accuracy and precision measurements were within control limits. A data completeness of 100% was calculated based on 14 of 14 intended sample analyses completed. This meets the project goal of 90%.

## 3.0 Diesel Range Petroleum Hydrocarbon Analysis

<u>Quality control analysis frequencies:</u> The method specifies that a method blank must be analyzed one per analytical batch or one per twenty samples, whichever is more frequent, and a laboratory duplicate must be analyzed one per ten samples. In addition, surrogate compounds must be measured in each field and quality control sample.

Each batch included a method blank, laboratory control sample (LCS), and LCS duplicate (LCSD), as well as appropriate surrogates. Data qualifiers are not required due to a lack of laboratory duplicate results.

<u>Holding times:</u> Unpreserved water samples must be extracted within 7 days of collection. Preserved water samples must be extracted within 14 days of collection. Extracts must be analyzed within 40 days of extraction. Samples were extracted and analyzed within holding times.

<u>Laboratory blank results</u>: Criteria for blanks are that analyte concentrations must be below the PQL, or below 5% of the lowest associated sample concentration. No target compounds were detected in the method blanks.

<u>Surrogate recoveries:</u> Laboratory control limits were 50-150%. Surrogate recoveries were within limits.

<u>LCS recoveries:</u> Laboratory control limits were 50-120% and 64-120%. LCS recoveries were within limits.

<u>LCS/LCSD RPDs:</u> The laboratory control limits were <24 and <26%. LCS/LCSD RPD values were within limits.

<u>Field duplicate RPDs:</u> For concentrations above five times the reporting limit, RPDs were below 50%. For concentrations below five times the reporting limits, concentrations were within +/- two times the reporting limit.

<u>Reporting limits</u>: The reporting limit goals are 0.1 mg/L for both diesel range hydrocarbons and oil range hydrocarbons. These goals were met.

<u>Laboratory narrative and flags:</u> No qualifiers were added based on a review of the laboratory narrative.

Diesel and oil range petroleum hydrocarbon data are acceptable for use as reported.

## 4.0 Abbreviations and Definitions

<u>DV Qualifier</u> U	<u>Definition</u> The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample reporting limit or the amount of contaminant detected in the sample.
J	The analyte was positively identified. The associated numerical value is the approximate concentration of the analyte in the sample.
Ν	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a tentative identification.
UJ	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.
R	The sample result is rejected. The presence or absence of the analyte cannot be verified and data are not usable.
R1	The sample result has been replaced by a more reliable or more conservative result.
R2	The sample result has been replaced by a result from a different analysis method.
Abbreviation	Definition
	Data Validation
	Laboratory control sample
MS	Matrix snike
MSD	Matrix spike duplicate
RL	Reporting limit
RPD	Relative percent difference
RSD	Relative standard deviation

- USEPA National Functional Guidelines for Organic Superfund Methods Data Review, Office of Superfund Remediation and Technology Innovation, U.S. Environmental Protection Agency. January 2017, EPA-540-R-2017-002.
- USEPA Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use, Office of Solid Waste and Emergency Response, U.S. Environmental Protection Agency, January 2009, EPA 540-R-08-005.



DATA VALIDATION REPORT

Skykomish Hydraulic Control and Containment Pilot Study October 2019 Data

Prepared for: Farallon Consulting, LLC 975 5th Avenue NW Issaquah, Washington 98027

November 7, 2019

## 1.0 Introduction

Data validation was performed on the following water samples:

Sample ID	Sample Date/Time	Lab ID	Analyses
GW-2-101719	10/17/2019 11:04	580-90157-1	TPH-Dx
S2-BD-101719	10/17/2019 11:16	580-90157-2	TPH-Dx
S2-BU-101719	10/17/2019 11:45	580-90157-3	TPH-Dx
PZ-7S-101719	10/17/2019 12:06	580-90157-4	TPH-Dx
S2-AD-101719	10/17/2019 12:18	580-90157-5	TPH-Dx
S2-2-AU-101719	10/17/2019 12:43	580-90157-6	TPH-Dx
WG-EV-101719	10/17/2019 14:15	580-90157-7	TPH-Dx
GW-1-101719	10/17/2019 14:21	580-90157-8	TPH-Dx
WG-WV-101719	10/17/2019 14:53	580-90157-9	TPH-Dx
FWG-EV-101719	10/17/2019 15:12	580-90157-10	TPH-Dx
5-W-43-101719	10/17/2019 15:27	580-90157-12	TPH-Dx
FWG-WV-101719	10/17/2019 15:47	580-90157-11	TPH-Dx
EW-1-101719	10/17/2019 16:38	580-90157-13	TPH-Dx
PZ-8-101719	10/17/2019 17:24	580-90157-14	TPH-Dx

Samples were analyzed by Test America, Tacoma, Washington.

A stage 2A summary validation was performed on the analytical results including both the hardcopy (portable document format) and electronic data deliverable, earning EPA OSWER validation label code S2AVEM. Validation was performed by Cari Sayler.

Data qualifiers are assigned based only on the criteria reviewed and do not include calibration or instrument performance issues unless noted in the laboratory narrative. No qualifiers were assigned based on this review.

## 2.0 Precision, Accuracy, Representativeness, Comparability, and Completeness

<u>Sample analysis frequencies:</u> 14 locations are sampled monthly. Samples were collected from required locations and the required analysis was completed by the laboratory for each collected sample.

<u>Analysis methods</u>: Each sample was analyzed by method NWTPH-Dx and prepared by method SW3510C. These methods are approved EPA methods and therefore meet comparability requirements.

<u>Precision, accuracy and completeness:</u> Accuracy and precision measurements were within control limits. A data completeness of 100% was calculated based on 14 of 14 intended sample analyses completed. This meets the project goal of 90%.

# 3.0 Diesel Range Petroleum Hydrocarbon Analysis

<u>Quality control analysis frequencies:</u> The method specifies that a method blank must be analyzed one per analytical batch or one per twenty samples, whichever is more frequent, and a laboratory duplicate must be analyzed one per ten samples. In addition, surrogate compounds must be measured in each field and quality control sample.

This batch included a method blank, laboratory control sample (LCS), and LCS duplicate (LCSD), as well as appropriate surrogates. Data qualifiers are not required due to a lack of laboratory duplicate results.

<u>Holding times:</u> Unpreserved water samples must be extracted within 7 days of collection. Preserved water samples must be extracted within 14 days of collection. Extracts must be analyzed within 40 days of extraction. Samples were extracted and analyzed within holding times.

<u>Laboratory blank results</u>: Criteria for blanks are that analyte concentrations must be below the PQL, or below 5% of the lowest associated sample concentration. No target compounds were detected in the method blanks.

<u>Surrogate recoveries:</u> Laboratory control limits were 50-150%. Surrogate recoveries were within limits with the following exceptions:

Sample ID	Surrogate	% Recovery	Lab Control Limit
GW-1-101719	o-Terphenyl	39	50 - 150
GW-2-101719	o-Terphenyl	33	50 - 150
PZ-7S-101719	o-Terphenyl	30	50 - 150
S2-AD-101719	o-Terphenyl	44	50 - 150
S2-BU-101719	o-Terphenyl	37	50 - 150

The laboratory noted matrix interference, and no qualifiers are assigned.

<u>LCS recoveries:</u> Laboratory control limits were 50-120% and 64-120%. LCS recoveries were within limits.

<u>LCS/LCSD RPDs:</u> The laboratory control limits were <24 and <26%. LCS/LCSD RPD values were within limits.

<u>Reporting limits</u>: The reporting limit goals are 0.1 mg/L for both diesel range hydrocarbons and oil range hydrocarbons. These goals were met.

<u>Laboratory narrative and flags:</u> No qualifiers were added based on a review of the laboratory narrative.

Diesel and oil range petroleum hydrocarbon data are acceptable for use as reported.

## 4.0 Abbreviations and Definitions

<u>DV Qualifier</u> U J	<u>Definition</u> The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample reporting limit or the amount of contaminant detected in the sample. The analyte was positively identified. The associated numerical value is the approximate concentration of the analyte in the sample
Ν	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a tentative identification.
UJ	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.
R	The sample result is rejected. The presence or absence of the analyte cannot be verified and data are not usable.
R1	The sample result has been replaced by a more reliable or more conservative result.
R2	The sample result has been replaced by a result from a different analysis method.
Abbreviation DV LCS LCSD MS MSD RL RPD RSD	Definition Data Validation Laboratory control sample Laboratory control sample duplicate Matrix spike Matrix spike duplicate Reporting limit Relative percent difference Relative standard deviation

- USEPA National Functional Guidelines for Organic Superfund Methods Data Review, Office of Superfund Remediation and Technology Innovation, U.S. Environmental Protection Agency. January 2017, EPA-540-R-2017-002.
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# DATA VALIDATION REPORT

Skykomish Hydraulic Control and Containment Pilot Study November 2019 Data

Prepared for: Farallon Consulting, LLC 975 5th Avenue NW Issaquah, Washington 98027

December 11, 2019

## 1.0 Introduction

Data validation was performed on the following water samples:

Sample ID	Sample Date/Time	Lab ID	Analyses
S2-BU-111919	11/19/2019 10:25	580-90933-1	TPH-Dx
GW-2-111919	11/19/2019 10:45	580-90933-2	TPH-Dx
S2-BD-111919	11/19/2019 10:58	580-90933-3	TPH-Dx
S2-AD-111919	11/19/2019 11:28	580-90933-4	TPH-Dx
GW-1-111919	11/19/2019 11:42	580-90933-5	TPH-Dx
S2-AU-111919	11/19/2019 12:00	580-90933-6	TPH-Dx
WG-WV-111919	11/19/2019 12:35	580-90933-7	TPH-Dx
5-W-43-111919	11/19/2019 12:36	580-90933-8	TPH-Dx
EW-1-111919	11/19/2019 13:31	580-90933-9	TPH-Dx
FWG-WV-111919	11/19/2019 13:39	580-90933-10	TPH-Dx
FWG-EV-111919	11/19/2019 14:15	580-90933-11	TPH-Dx
PZ-8-111919	11/19/2019 14:25	580-90933-12	TPH-Dx
WG-EV-111919	11/19/2019 14:46	580-90933-13	TPH-Dx
PZ-7S-111919	11/19/2019 15:22	580-90933-14	TPH-Dx

Samples were analyzed by Test America, Tacoma, Washington.

A stage 2A summary validation was performed on the analytical results including both the hardcopy (portable document format) and electronic data deliverable, earning EPA OSWER validation label code S2AVEM. Validation was performed by Cari Sayler.

Data qualifiers are assigned based only on the criteria reviewed and do not include calibration or instrument performance issues unless noted in the laboratory narrative. No qualifiers were assigned based on this review.

## 2.0 Precision, Accuracy, Representativeness, Comparability, and Completeness

<u>Sample analysis frequencies:</u> 14 locations are sampled monthly. Samples were collected from required locations and the required analysis was completed by the laboratory for each collected sample.

<u>Analysis methods</u>: Each sample was analyzed by method NWTPH-Dx and prepared by method SW3510C. These methods are approved EPA methods and therefore meet comparability requirements.

<u>Precision, accuracy and completeness:</u> Accuracy and precision measurements were within control limits. A data completeness of 100% was calculated based on 14 of 14 intended sample analyses completed. This meets the project goal of 90%.

# 3.0 Diesel Range Petroleum Hydrocarbon Analysis

<u>Quality control analysis frequencies:</u> The method specifies that a method blank must be analyzed one per analytical batch or one per twenty samples, whichever is more frequent, and a laboratory duplicate must be analyzed one per ten samples. In addition, surrogate compounds must be measured in each field and quality control sample.

This batch included a method blank, laboratory control sample (LCS), and LCS duplicate (LCSD), as well as appropriate surrogates. Data qualifiers are not required due to a lack of laboratory duplicate results.

<u>Holding times:</u> Unpreserved water samples must be extracted within 7 days of collection. Preserved water samples must be extracted within 14 days of collection. Extracts must be analyzed within 40 days of extraction. Samples were extracted and analyzed within holding times.

<u>Laboratory blank results</u>: Criteria for blanks are that analyte concentrations must be below the PQL, or below 5% of the lowest associated sample concentration. No target compounds were detected in the method blanks.

<u>Surrogate recoveries:</u> Laboratory control limits were 50-150%. Surrogate recoveries were within limits.

<u>LCS recoveries:</u> Laboratory control limits were 50-120% and 64-120%. LCS recoveries were within limits.

<u>LCS/LCSD RPDs:</u> The laboratory control limits were <24 and <26%. LCS/LCSD RPD values were within limits.

<u>Reporting limits</u>: The reporting limit goals are 0.1 mg/L for both diesel range hydrocarbons and oil range hydrocarbons. These goals were met.

<u>Laboratory narrative and flags</u>: No qualifiers were added based on a review of the laboratory narrative or data flags.

Diesel and oil range petroleum hydrocarbon data are acceptable for use as reported.

## 4.0 Abbreviations and Definitions

## DV Qualifier Definition

U

The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample reporting limit or the amount of contaminant detected in the sample.

DV Qualifier	Definition
J	The analyte was positively identified. The associated numerical value is the
N	approximate concentration of the analyte in the sample. The analysis indicates the presence of an analyte for which there is presumptive evidence to make a tentative identification.
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# DATA VALIDATION REPORT

Skykomish Hydraulic Control and Containment Pilot Study December 2019 Data

Prepared for: Farallon Consulting, LLC 975 5th Avenue NW Issaquah, Washington 98027

January 13, 2020

## 1.0 Introduction

Data validation was performed on the following water samples:

Sample ID	Sample Date/Time	Lab ID	Analyses
PZ-80-121819	12/18/2019 11:25	580-91664-1	TPH-Dx
S2-AU-121819	12/18/2019 13:32	580-91664-2	TPH-Dx
GW-1-121819	12/18/2019 13:55	580-91664-3	TPH-Dx
S2-AD-121819	12/18/2019 11:38	580-91664-4	TPH-Dx
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FWG-EV-121819	12/18/2019 14:35	580-91664-9	TPH-Dx
S2-BU-121819	12/18/2019 10:18	580-91664-10	TPH-Dx
FWG-WV-121819	12/18/2019 15:00	580-91664-11	TPH-Dx
WG-EV-121819	12/18/2019 10:49	580-91664-12	TPH-Dx
PZ-7S-121819	12/18/2019 14:52	580-91664-13	TPH-Dx
GW-2-121819	12/18/2019 15:48	580-91664-14	TPH-Dx
GW-20-121819	12/18/2019 15:55	580-91664-15	TPH-Dx

Samples were analyzed by Test America, Tacoma, Washington.

Please note: Sample PZ-80-121819 was listed on the chain of custody as PZ-8-12-1819. Sample FWG-EV-121819 was listed on the chain of custody AS FWG-EV.

A stage 2A summary validation was performed on the analytical results including both the hardcopy (portable document format) and electronic data deliverable, earning EPA OSWER validation label code S2AVEM. Validation was performed by Cari Sayler.

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<u>LCS recoveries:</u> Laboratory control limits were 50-120% and 64-120%. LCS recoveries were within limits.

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<u>Reporting limits</u>: The reporting limit goals are 0.1 mg/L for both diesel range hydrocarbons and oil range hydrocarbons. These goals were met.

<u>Laboratory narrative and flags:</u> No qualifiers were added based on a review of the laboratory narrative or data flags.

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## 4.0 Abbreviations and Definitions

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R	The sample result is rejected. The presence or absence of the analyte cannot be verified and data are not usable.
R1	The sample result has been replaced by a more reliable or more conservative result.
R2	The sample result has been replaced by a result from a different analysis method.
Abbreviation DV LCS LCSD MS MSD RL RPD RSD	Definition Data Validation Laboratory control sample Laboratory control sample duplicate Matrix spike Matrix spike duplicate Reporting limit Relative percent difference Relative standard deviation

- USEPA National Functional Guidelines for Organic Superfund Methods Data Review, Office of Superfund Remediation and Technology Innovation, U.S. Environmental Protection Agency. January 2017, EPA-540-R-2017-002.
- USEPA Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use, Office of Solid Waste and Emergency Response, U.S. Environmental Protection Agency, January 2009, EPA 540-R-08-005.