Associated Environmental Group, LLC

August 10, 2020

Mr. Frank P. Winslow, LHG
Toxics Cleanup Program
Department of Ecology – Central Regional Office
1250 West Alder Street, Union Gap, Washington 98903-0009
Frank.Winslow@ecy.wa.gov

RE: **Technical Memorandum – Data Gap Investigation April 2020**
Naches Pit Stop
10121 Highway 12
Naches, Washington 98937-9785
VCP ID No.: CE0449

Dear Mr. Winslow:

Associated Environmental Group, LLC (AEG) has prepared this technical memorandum to provide a summary of the data gap subsurface investigation and monitoring well installation performed at the above-referenced address in Naches, Washington (Site). The Site's location and current layout are illustrated in Figure 1, *Vicinity Map*, and Figure 2, *Site Map*.

DATA GAP INVESTIGATION – APRIL/MAY 2020

On September 14, 2018, the Washington State Department of Ecology (Ecology) issued an opinion letter indicating that further action was needed at the Site. In response to the letter, AEG advanced three borings at the Site and completed two as groundwater monitoring wells (B-6, MW-10, and MW-11). Monitoring wells MW-10 and MW-11 were installed to 20 feet with 10 feet of screen. These wells were installed to industry standards, then developed to allow for stabilization of groundwater parameters prior to sampling at a later date. Boring and well logs are included in Appendix A, Supporting Documents, *Boring/Well Logs*.

Analytical results of the soil samples indicated the presence of gasoline-range petroleum hydrocarbons (TPH) in boring B-6 at 1,620 milligrams per kilogram (mg/kg) at 15 feet below ground surface (bgs). This detection exceeded the Model Toxics Control Act (MTCA) Method A cleanup level of 30 mg/kg. All other results from the remaining soil samples were either non-detect or below MTCA cleanup levels. The soil sample from B-6 was further analyzed for volatile and extractable TPH (VPH/EPH) to calculate Site-specific Method B cleanup levels. The results of the calculations indicated a Site-specific Method B cleanup level of 2,230 mg/kg, which indicated the detected gasoline-range TPH in the soil sample was considered protective of the Direct Contact Exposure pathway. Method B calculations are included in Appendix A, Supporting Documents.

Analytical results of the groundwater sample collected from B-6 indicated the presence of gasoline-range TPH at 9,180 micrograms per liter (µg/L), and diesel-range TPH at 1,390 µg/L. These concentrations exceed their respective MTCA Method A cleanup levels of 800 µg/L and 500 µg/L.

AEG returned to the Site in May 2020 and sampled all the monitoring wells at the Site, including the newly installed MW-10 and MW-11. Analytical results of the groundwater samples indicated all analytes were either non-detect or below MTCA Method A cleanup levels.

Soil and groundwater results are summarized in Table 1, *Summary of Soil Analytical Results*, and Table 2, *Summary of Groundwater Analytical Results*, respectively. Laboratory results are included in Appendix A, Supporting Documents, *Laboratory Datasheets*.

CLOSING

AEG is seeking an opinion at this time as to what additional work is needed for the Site to receive a determination of no further action. If you have comments or questions, please contact our office at your convenience at 360.352.9835.

Sincerely,

Associated Environmental Group, LLC

Shawn Lombardini L.H.G.
Project Hydrogeologist

State of Washington
Hydrogeologist
3039
Licensed Geologist
Shawn Lombardini

Scott Rose, L.H.G.
Senior Hydrogeologist

State of Washington
Hydrogeologist
2635
Licensed Geologist
SCOTT I ROSE

Attachments: Figure 1 – *Vicinity Map*
Figure 2 – *Site Map*

Table 1 – *Summary of Soil Analytical Results*
Table 2 – *Summary of Groundwater Analytical Results*

Appendix A – Supporting Documents
Boring/Well Logs
Laboratory Datasheets
Method B Calculations

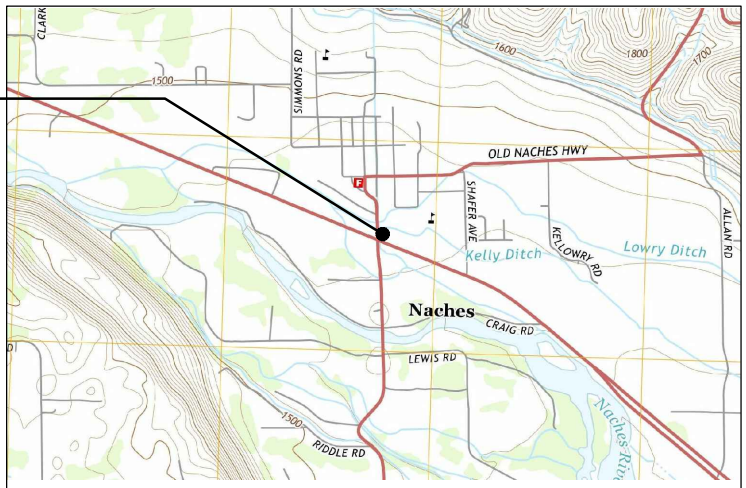
FIGURES

2633 Parkmont Lane SW, Suite A • Olympia, WA • 98502
Phone: 360-352-9835 • Fax: 360-352-8164 • Email: admin@aegwa.com

FILENAME	DRAWN BY		CHECKED BY		APPROVED BY		PROJECT NUMBER
16-102_15Q4.DWG	ICD	2/1/2016	BD	2/1/2016	BD	2/1/2016	16-102

N
W E
S

PROJECT LOCATION

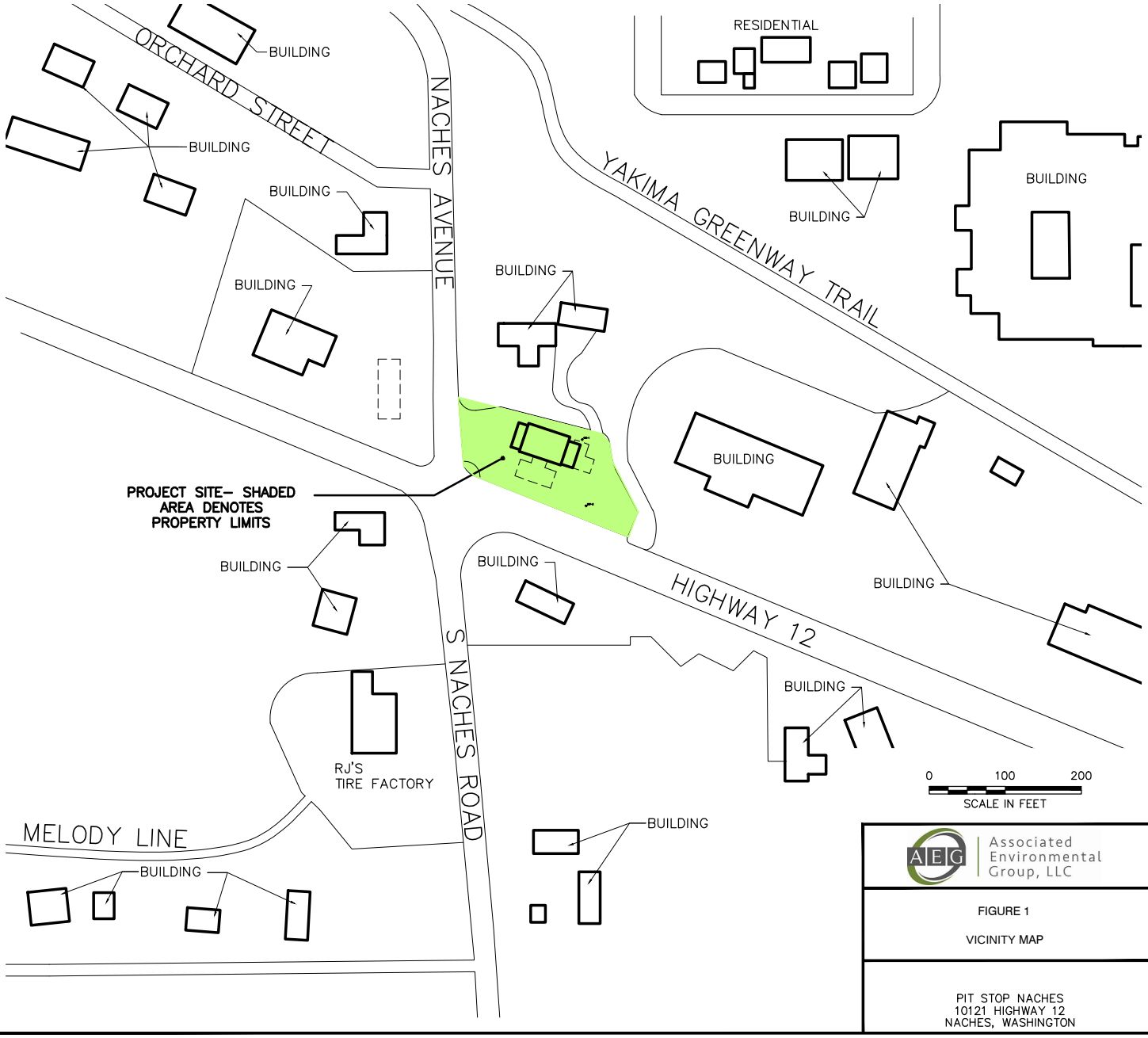


NOTES

1. THE LOCATIONS OF ALL FEATURES SHOWN ARE APPROXIMATE
2. THIS DRAWING IS FOR INFORMATION PURPOSES. IT IS INTENDED TO ASSIST IN SHOWING FEATURES DISCUSSED IN AN ATTACHED DOCUMENT.

REFERENCE

DRAWING CREATED FROM AERIAL PHOTOGRAPH AND NOTES PROVIDED BY AEG, LLC.
VICINITY IMAGE SOURCE: U.S. GEOLOGICAL SURVEY–2013, 7.5 MINUTE QUADRANGLE MAP NACHES, WASHINGTON



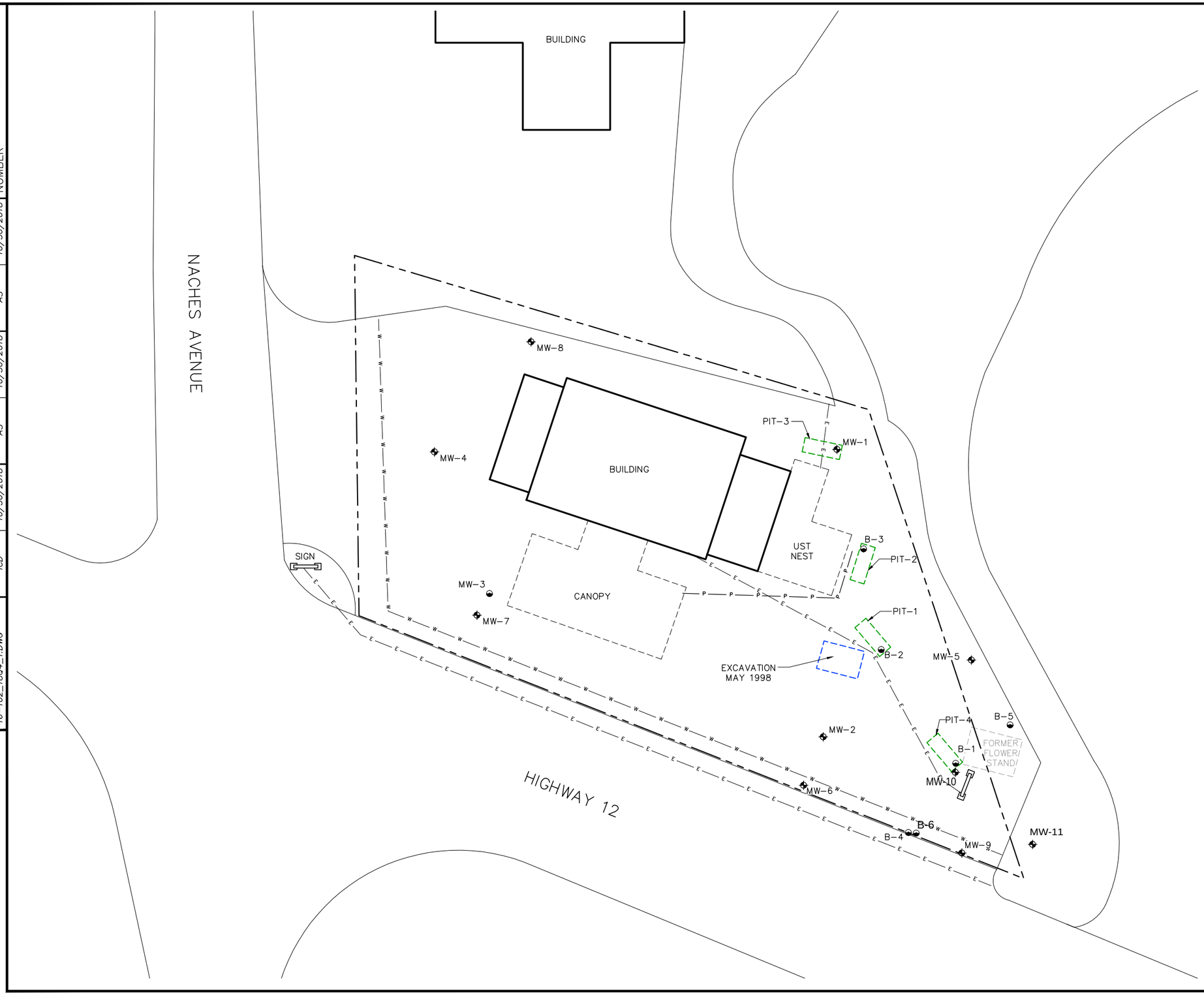
Associated Environmental Group, LLC

FIGURE 1

VICINITY MAP

PIT STOP NACHES
10121 HIGHWAY 12
NACHES, WASHINGTON

FILENAME	DRAWN BY	CHECKED BY	APPROVED BY	PROJECT NUMBER
16-102_1804_1.DWG	ICD 10/30/2018	AS 10/30/2018	AS 10/30/2018	16-102



LEGEND

- PROPERTY LINE
- MW-1 — GROUNDWATER MONITORING WELL LOCATION AND DESIGNATION
- MW-3 — SOIL SAMPLING LOCATION
- ELECTRIC LINE
- WATER LINE
- PRODUCT LINE
- 1991 TEST PIT

NOTES

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REFERENCE

DRAWING CREATED FROM AERIAL PHOTOGRAPH AND NOTES PROVIDED BY AEG, LLC.

0 15 30
SCALE IN FEET

Associated Environmental Group, LLC

FIGURE 2

SITE MAP

PIT STOP NACHES
10121 HIGHWAY 12
NACHES, WASHINGTON

TABLES

2633 Parkmont Lane SW, Suite A • Olympia, WA • 98502
Phone: 360-352-9835 • Fax: 360-352-8164 • Email: admin@aegwa.com

Table 1 - Summary of Soil Analytical Results
Naches Pit Stop
Naches, Washington

Sample Number	Depth Collected (feet)	Date Collected	Total Petroleum Hydrocarbons			Volatile Organic Compounds								Lead
			Gasoline	Diesel	Heavy Oil	Benzene	Toluene	Ethyl-benzene	Xylenes	EDC	EDB	Total Naphthalenes	MTBE	
MW1-13	13.0	1/21/2016	<10	<50	<100	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--
MW1-15	15.0	1/21/2016	<10	<50	<100	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--
MW2-8	8.0	1/21/2016	<10	<50	<100	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--
MW2-13	13.0	1/21/2016	<10	**1,400**	<100	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--
MW2-15	15.0	1/21/2016	<10	<50	<100	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--
MW3-10	10.0	1/21/2016	<10	<50	<100	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--
MW4-5	5.0	5/24/2016	<10	<50	<250	<0.02	<0.10	<0.05	<0.15	<0.03	<0.005	<0.10	<0.05	<5.0
MW4-10	10.0	5/24/2016	<10	<50	<250	<0.02	<0.10	<0.05	<0.15	<0.03	<0.005	<0.10	<0.05	<5.0
MW5-5	5.0	5/23/2016	<10	<50	<250	<0.02	<0.10	<0.05	<0.15	--	--	--	--	--
MW5-10	10.0	5/23/2016	<10	<50	<250	<0.02	<0.10	<0.05	<0.15	--	--	--	--	--
MW6-5	5.0	5/23/2016	<10	<50	<250	<0.02	<0.10	<0.05	<0.15	--	--	--	--	--
MW6-10	10.0	5/23/2016	<10	<50	<250	<0.02	<0.10	<0.05	<0.15	--	--	--	--	--
MW7-5a	5.0	5/24/2016	<10	<50	<250	<0.02	<0.10	<0.05	<0.15	<0.03	<0.005	<0.10	<0.05	<5.0
MW7-6	6.0	5/24/2016	<10	<50	<250	<0.02	<0.10	<0.05	<0.15	<0.03	<0.005	<0.10	<0.05	<5.0
MW7-10	10.0	5/24/2016	<10	<50	<250	<0.02	<0.10	<0.05	<0.15	<0.03	<0.005	<0.10	<0.05	<5.0
MW8-5	5.0	5/24/2016	<10	<50	<250	<0.02	<0.10	<0.05	<0.15	--	--	--	--	--
MW8-10	10.0	5/24/2016	<10	<50	<250	<0.02	<0.10	<0.05	<0.15	--	--	--	--	--
MW8-15	15.0	5/24/2016	<10	<50	<250	<0.02	<0.10	<0.05	<0.15	--	--	--	--	--
MW8-20	20.0	5/24/2016	<10	<50	<250	<0.02	<0.10	<0.05	<0.15	--	--	--	--	--
B1-3	3.0	3/28/2017	<10	<50	<250	<0.02	<0.10	<0.05	<0.15	--	--	--	--	<5.0
B1-8	8.0	3/28/2017	<10	<50	<250	<0.02	<0.10	<0.05	<0.15	--	--	--	--	<5.0
B1-10	10.0	3/28/2017	<10	<50	<250	<0.02	<0.10	<0.05	<0.15	--	--	--	--	<5.0
B1-15	15.0	3/28/2017	<10	**294**	<250	<0.02	<0.10	<0.05	<0.15	--	--	--	--	**7.1**
B2-3	3.0	3/28/2017	<10	<50	<250	<0.02	<0.10	<0.05	<0.15	--	--	--	--	<5.0
B2-9	9.0	3/28/2017	<10	<50	<250	<0.02	<0.10	<0.05	<0.15	--	--	--	--	<5.0
B3-4	4.0	3/28/2017	<10	<50	<250	<0.02	<0.10	<0.05	<0.15	--	--	--	--	**12.6**
B3-9	9.0	3/28/2017	<10	<50	<250	<0.02	<0.10	<0.05	<0.15	--	--	--	--	**8.5**
B4-5	5.0	9/13/2017	<10	<50	<250	<0.02	<0.10	<0.05	<0.15	--	--	--	--	**9.1**
B4-14	14.0	9/13/2017	**464**	**258**	<250	**0.021**	<0.10	**2.6**	**4.73**	--	--	--	--	<5.0
B4-20	20.0	9/13/2017	<10	<50	<250	<0.02	<0.10	<0.05	<0.15	--	--	--	--	--
B5-6	6.0	9/13/2017	<10	<50	<250	<0.02	<0.10	<0.05	<0.15	--	--	--	--	<5.0
B5-15	15.0	9/13/2017	<10	<50	<250	<0.02	<0.10	<0.05	<0.15	--	--	--	--	<5.0
MW9-5	5.0	9/13/2017	<10	<50	<250	<0.02	<0.10	<0.05	<0.15	--	--	--	--	<5.0
MW9-15	15.0	9/13/2017	<10	<50	<250	<0.02	<0.10	<0.05	<0.15	--	--	--	--	<5.0
MW9-20	20.0	9/13/2017	<10	<50	<250	<0.02	<0.10	<0.05	<0.15	--	--	--	--	<5.0
B6-15	15.0	4/17/2020	**1,620**	**1,070**	<250	<0.02	<0.10	**2.9**	**1.6**	--	--	--	--	--
B6-20	20.0	4/17/2020	**19**	<50	<250	<0.02	<0.10	<0.05	<0.15	--	--	--	--	--
B6-25	25.0	4/17/2020	<10	<50	<250	<0.02	<0.10	<0.05	<0.15	--	--	--	--	--
MW10-14	14.0	4/17/2020	<10	**480**	<250	<0.02	<0.10	<0.05	<0.15	--	--	--	--	--
MW10-20	20.0	4/17/2020	<10	<50	<250	<0.02	<0.10	<0.05	<0.15	--	--	--	--	--
MW11-15	15.0	4/20/2020	<10	<50	<250	<0.02	<0.10	<0.05	<0.15	--	--	--	--	--
PQL			10	50	100 / 250	0.02	0.05 / 0.10	0.05	0.15	0.03	0.005	0.10	0.05	5.0
MTCA Method A Cleanup Levels			30*	2,000	2,000	0.03	7	6	9	11**	0.005	5.0	0.1	250

Notes:
All values reported in milligrams per kilogram (mg/kg)
-- = Not analyzed for constituent
< = Not detected at the listed laboratory detection limits
PQL = Practical Quantification Limit (laboratory detection limit)
Red Bold indicates the detected concentration exceeds Ecology MTCA Method A cleanup level
Bold indicates the detected concentration is below Ecology MTCA Method A cleanup levels
* TPH-Gasoline cleanup level with presence of Benzene anywhere at the Site
** No MTCA Method A cleanup level established, Method B cleanup level used

MTBE = Methyl tert-butyl ether
EDC = 1,2-Dichloroethane
EDB = 1,2-Dibromoethane

Table 2 - Summary of Groundwater Analytical Results
Naches Pit Stop
Naches, Washington

Sample Number	Date Collected	Total Petroleum Hydrocarbons			Volatile Organic Compounds								Total Lead	Dissolved Lead	Cadmium	Chromium	Arsenic	Mercury
		Gasoline	Diesel	Heavy Oil	Benzene	Toluene	Ethyl-benzene	Xylenes	EDC	EDB	Total Naphthalenes	MTBE						
MONITORING WELL DATA																		
MW-1	5/27/2016	<100	<200	<400	<1.0	<2.0	<1.0	<2.0	--	--	--	--	--	--	--	--	--	--
	9/28/2016	<100	<200	<400	<1.0	<2.0	<1.0	<2.0	--	--	--	--	<5.0	<5.0	--	--	--	--
	3/27/2017	<100	<200	<400	**1.1**	<2.0	<1.0	**3.1**	--	--	--	--	<5.0	<5.0	--	--	--	--
	12/21/2017	<100	<200	<400	<1.0	<2.0	<1.0	<2.0	--	--	--	--	--	--	--	--	--	--
	3/27/2018	<100	<200	<400	<1.0	<2.0	<1.0	<2.0	--	--	--	--	--	--	--	--	--	--
	5/8/2020	<100	<200	<400	<1.0	<2.0	<1.0	<2.0	--	--	--	--	--	--	--	--	--	--
MW-2	1/21/2016	**3,000**	**61,000**	<500	<1.0	<1.0	<1.0	<3.0	--	--	--	--	--	--	--	--	--	--
	5/27/2016	<100	<200	<400	<1.0	<2.0	<1.0	<2.0	--	--	--	--	--	--	--	--	--	--
	9/28/2016	<100	<200	<400	<1.0	<2.0	<1.0	<2.0	--	--	--	--	<5.0	<5.0	--	--	--	--
	3/27/2017	<100	<200	<400	<1.0	<2.0	<1.0	<2.0	--	--	--	--	<5.0	<5.0	--	--	--	--
	12/20/2017	<100	<200	<400	<1.0	<2.0	<1.0	<2.0	--	--	--	--	--	--	--	--	--	--
	3/27/2018	<100	<200	<400	<1.0	<2.0	<1.0	<2.0	--	--	--	--	--	--	--	--	--	--
	5/8/2020	<100	<200	<400	<1.0	<2.0	<1.0	<2.0	--	--	--	--	--	--	--	--	--	--
MW-4	5/27/2016	<100	<200	<400	<1.0	<1.0	<1.0	<2.0	<1.0	<0.01	<5.0	<5.0	**84**	--	<0.5	<5.0	<3.0	<0.5
	9/28/2016	<100	<200	<400	<1.0	<2.0	<1.0	<2.0	--	--	--	--	<5.0	<5.0	--	--	--	--
	3/27/2017	<100	<200	<400	<1.0	<2.0	<1.0	<2.0	--	--	--	--	<5.0	<5.0	--	--	--	--
	12/21/2017	<100	<200	<400	<1.0	<2.0	<1.0	<2.0	--	--	--	--	--	--	--	--	--	--
	5/8/2020	<100	<200	<400	<1.0	<2.0	<1.0	<2.0	--	--	--	--	--	--	--	--	--	--
MW-5	5/27/2016	<100	<200	<400	<1.0	<2.0	<1.0	<2.0	--	--	--	--	--	--	--	--	--	--
	9/28/2016	<100	<200	<400	<1.0	<2.0	<1.0	<2.0	--	--	--	--	<5.0	<5.0	--	--	--	--
	3/27/2017	<100	<200	<400	<1.0	<2.0	<1.0	<2.0	--	--	--	--	<5.0	<5.0	--	--	--	--
	12/21/2017	<100	<200	<400	<1.0	<2.0	<1.0	<2.0	--	--	--	--	--	--	--	--	--	--
	3/27/2018	<100	<200	<400	<1.0	<2.0	<1.0	<2.0	--	--	--	--	--	--	--	--	--	--
	5/8/2020	<100	<200	<400	<1.0	<2.0	<1.0	<2.0	--	--	--	--	--	--	--	--	--	--
MW-6	5/27/2016	<100	<200	<400	<1.0	<2.0	<1.0	<2.0	--	--	--	--	--	--	--	--	--	--
	9/28/2016	<100	<200	<400	<1.0	<2.0	<1.0	<2.0	--	--	--	--	<5.0	<5.0	--	--	--	--
	3/27/2017	<100	<200	<400	<1.0	<2.0	<1.0	<2.0	--	--	--	--	<5.0	<5.0	--	--	--	--
	12/21/2017	<100	<200	<400	<1.0	<2.0	<1.0	<2.0	--	--	--	--	--	--	--	--	--	--
	3/27/2018	<100	<200	<400	<1.0	<2.0	<1.0	<2.0	--	--	--	--	--	--	--	--	--	--
	5/8/2020	<100	<200	<400	<1.0	<2.0	<1.0	<2.0	--	--	--	--	--	--	--	--	--	--

Table 2 - Summary of Groundwater Analytical Results
Naches Pit Stop
Naches, Washington

Sample Number	Date Collected	Total Petroleum Hydrocarbons			Volatile Organic Compounds								Total Lead	Dissolved Lead	Cadmium	Chromium	Arsenic	Mercury
		Gasoline	Diesel	Heavy Oil	Benzene	Toluene	Ethyl-benzene	Xylenes	EDC	EDB	Total Naphthalenes	MTBE						
MW-7	5/27/2016	<100	<200	<400	<1.0	<2.0	<1.0	<2.0	<1.0	<0.01	<5.0	<5.0	**102**	--	<0.5	<5.0	<3.0	<0.5
	9/28/2016	<100	<200	<400	<1.0	<2.0	<1.0	<2.0	--	--	--	--	**6.4**	<5.0	--	--	--	--
	3/27/2017	<100	<200	<400	<1.0	<2.0	<1.0	<2.0	--	--	--	--	<5.0	<5.0	--	--	--	--
	12/21/2017	<100	<200	<400	<1.0	<2.0	<1.0	<2.0	--	--	--	--	--	--	--	--	--	--
	5/8/2020	<100	<200	<400	<1.0	<2.0	**2.7**	<2.0	--	--	--	--	--	--	--	--	--	--
MW-8	5/27/2016	<100	<200	<400	<1.0	<2.0	<1.0	<2.0	--	--	--	--	--	--	--	--	--	--
	9/28/2016	<100	<200	<400	<1.0	<2.0	<1.0	<2.0	--	--	--	--	<5.0	<5.0	--	--	--	--
	3/27/2017	<100	<200	<400	<1.0	<2.0	<1.0	<2.0	--	--	--	--	<5.0	<5.0	--	--	--	--
	12/21/2017	<100	<200	<400	<1.0	<2.0	<1.0	<2.0	--	--	--	--	--	--	--	--	--	--
	5/8/2020	<100	<200	<400	<1.0	<2.0	<1.0	<2.0	--	--	--	--	--	--	--	--	--	--
MW-9	9/13/2017	<100	<200	<400	<1.0	<2.0	<1.0	<2.0	--	--	--	--	<5.0	<5.0	--	--	--	--
	12/21/2017	<100	<200	<400	<1.0	<2.0	<1.0	<2.0	--	--	--	--	--	--	--	--	--	--
	5/8/2020	**120**	<200	<400	<1.0	<2.0	<1.0	<2.0	--	--	--	--	--	--	--	--	--	--
MW-10	5/8/2020	<100	<200	<400	<1.0	<2.0	<1.0	<2.0	--	--	--	--	--	--	--	--	--	--
MW-11	5/8/2020	<100	<200	<400	<1.0	<2.0	<1.0	<2.0	--	--	--	--	--	--	--	--	--	--
BORING GROUNDWATER																		
B-1	3/28/2017	<100	**29,700**	<400	<1.0	<2.0	<1.0	<2.0	--	--	--	--	**12.9**	<5.0	--	--	--	--
B-2	3/28/2017	<100	<200	<400	<1.0	<2.0	<1.0	<2.0	--	--	--	--	**19.9**	<5.0	--	--	--	--
B-5	9/13/2017	<100	<200	<400	<1.0	<2.0	<1.0	<2.0	--	--	--	--	<5.0	<5.0	--	--	--	--
B6-W	4/17/2020	**9,180**	**1,390**	<400	<2.0	<10.0	**68**	**44**	--	--	--	--	--	--	--	--	--	--
PQL		100	200	400	1.0	1.0 / 2.0	1.0	2.0 / 3.0	1.0	0.01	5.0	5.0	5.0	5.0	0.5	5.0	3.0	0.5
MTCA Method A Cleanup Levels		800*	500	500	5.0	1,000	700	1,000	5	0.01	160	20	15	15	2	19	20	2

Notes:
All values in micrograms per liter (µg/L)
-- = Not analyzed for constituent
< = Not detected at the listed laboratory detection limits
PQL = Practical Quantification Limit (laboratory detection limit)
Red Bold indicates the detected concentration exceeds Ecology MTCA Method A cleanup level
Bold indicates the detected concentration is below Ecology MTCA Method A cleanup levels
* TPH-Gasoline Cleanup Level with presence of Benzene anywhere at the Site

MTBE = Methyl tert-butyl ether
EDC = 1,2-Dichloroethane
EDB = 1,2-Dibromoethane

APPENDIX A

Supporting Documents:
Boring/Well Logs
Laboratory Datasheets
Method B Calculations

2633 Parkmont Lane SW, Suite A • Olympia, WA • 98502
Phone: 360-352-9835 • Fax: 360-352-8164 • Email: admin@aegwa.com

Associated Environmental Group, LLC

LOG OF BOREHOLE

PROJECT: ***Naches Pit Stop***	**JOB #** ***16-102***	**BORING #** ***B-6***	**PAGE 1 OF 1**
Location: *10121 Highway 12, Naches, WA*	**Approximate Elevation:** *1461 feet above sea level*		
Subcontractor / Driller: *Cascade*	**Equipment / Drilling Method:** *Sonic Drilling Rig*		
Date: *4.17.20*	**Logged By:** *B. Dilba*		

Boring Depth (feet)	Soil Description	Unified Soil Symbol	Sample Depth	Sample Recovery	Sample Number	Time	Blows/Foot	PID Reading	Sheen	Observations
	Asphalt surface underlain by; Brown, moist, dense, **GRAVELLY SAND**; coarse grained gravel, coarse grained sand; with silt	SW								
5	At 4 feet; Brown, moist, dense, **SANDY GRAVEL**; coarse grained sand, coarse grained gravel	GW						0.0		
10										
15										
	At 16 feet; Wet	▽			B6 @ 15'			0.0		
20					B6 @ 20'			0.0		
25	Total Depth = 25 feet bgs				B6 @ 25'			0.0		

Explanation

- Sample Advance / Recovery
- No Recovery
- Contact located approximately
- ATD — Groundwater level at time of drilling or date of measurement

Associated Environmental Group, LLC

LOG OF BOREHOLE

PROJECT: *Naches Pit Stop*	**JOB #** *16-102*	**Monitoring Well #** *MW-10*	**PAGE 1 OF 1**
Location: *10121 Highway 12, Naches, WA*	**Approximate Elevation:** *1461 feet above sea level*		
Subcontractor / Driller: Cascade	**Equipment / Drilling Method:** *Sonic Drilling Rig*		
Date: *4.17.20*	**Logged By:** *B. Dilba*		

Boring Depth (feet)	Soil Description	Unified Soil Symbol	Sample Depth	Sample Recovery	Sample Number	Time	Blows/Foot	PID Reading	Sheen	Monitoring Well Construction
	Asphalt surface underlain by; Brown, moist, dense, **GRAVELLY SAND**; coarse grained gravel, coarse grained sand; with silt	SW						0.0		
5	At 4 feet; Brown, moist, dense, **SANDY GRAVEL**; coarse grained sand, coarse grained gravel	GW						0.0		
10										
	At 13 feet; Gray									
15					MW10 @ 14'			0.0		
	At 17 feet; Wet	▽								
20					MW10 @ 20'			0.0		
	Total Depth = 20 feet bgs									
25										

Explanation

- Sample Advance / Recovery
- No Recovery
- Contact located approximately
- ATD ▽ Groundwater level at time of drilling or date of measurement

Monitoring Well Construction

- Grout/Concrete
- 3/4-inch bentonite chips
- Silica sand
- 2-inch diameter blank PVC casing from
- 2-inch diameter PVC 0.02 slotted screen

Ecology Tag #

Associated Environmental Group, LLC

LOG OF BOREHOLE

PROJECT: *Naches Pit Stop*	**JOB #** *16-102*	**Monitoring Well #** *MW-11*	**PAGE 1 OF 1**
Location: *10121 Highway 12, Naches, WA*	**Approximate Elevation:** *1461 feet above sea level*		
Subcontractor / Driller: Cascade	**Equipment / Drilling Method:** *Sonic Drilling Rig*		
Date: *4.20.20*	**Logged By:** *B. Dilba*		

Boring Depth (feet)	Soil Description	Unified Soil Symbol	Sample Depth	Sample Recovery	Sample Number	Time	Blows/Foot	PID Reading	Sheen	Monitoring Well Construction
	Asphalt surface underlain by; Brown, moist, dense, **GRAVELLY SAND**; coarse grained gravel, coarse grained sand; with silt	SW						0.0		
5	At 4 feet; Brown, moist, dense, **SANDY GRAVEL**; coarse grained sand, coarse grained gravel	GW						0.0		
10										
	At 13 feet; Gray									
15						MW11 @ 15'		0.0		
	At 17 feet; Wet	▽								
20										
	Total Depth = 20 feet bgs									
25										

Explanation

- Sample Advance / Recovery
- No Recovery
- Contact located approximately
- ATD ▽ Groundwater level at time of drilling or date of measurement

Monitoring Well Construction

- Grout/Concrete
- 3/4-inch bentonite chips
- Silica sand
- 2-inch diameter blank PVC casing from
- 2-inch diameter PVC 0.02 slotted screen

Ecology Tag #

Libby Environmental, Inc.

3322 South Bay Road NE • Olympia, WA 98506-2957

April 24, 2020

Becky Dilba
Associated Environmental Group, LLC
2633 Parkmont Lane SW, Suite A
Olympia, WA 98502

Dear Ms. Dilba:

Please find enclosed the analytical data report for the Naches Pit Stop Project located in Naches, Washington.

The results of the analyses are summarized in the attached tables. Applicable detection limits and QA/QC data are included. The sample(s) will be disposed of in 30 days unless we are contacted to arrange long term storage.

Libby Environmental, Inc. appreciates the opportunity to have provided analytical services for this project. If you have any further questions about the data report, please give me a call. It was a pleasure working with you on this project, and we are looking forward to the next opportunity to work together.

Sincerely,

Sherry L. Chilcutt
Senior Chemist
Libby Environmental, Inc.

Phone (360) 352-2110 • Fax (360) 352-4154 • libbyenv@gmail.com

Libby Environmental, Inc.

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Olympia, WA 98506
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Email: libbyenv@gmail.com

NACHES PIT STOP PROJECT
AEG, LLC
Naches, Washington
Libby Project # L200421-4
Client Project # 16-102

Analyses of Gasoline (NWTPH-Gx) & BTEX (EPA Method 8260D) in Soil

Sample Description		Method Blank	MW11-15
Date Sampled		N/A	4/20/2020
Date Analyzed	PQL (mg/kg)	4/21/2020 (mg/kg)	4/21/2020 (mg/kg)
Benzene	0.02	nd	nd
Toluene	0.10	nd	nd
Ethylbenzene	0.05	nd	nd
Total Xylenes	0.15	nd	nd
Gasoline	10	nd	nd
Surrogate Recovery			
Dibromofluoromethane		111	111
1,2-Dichloroethane-d4		133	134
Toluene-d8		99	99
4-Bromofluorobenzene		68	68

"nd" Indicates not detected at listed detection limit.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 65% TO 135%

ANALYSES PERFORMED BY: Sherry Chilcutt

Libby Environmental, Inc.

3322 South Bay Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@gmail.com

NACHES PIT STOP PROJECT
AEG, LLC
Naches, Washington
Libby Project # L200421-4
Client Project # 16-102

QA/QC for Gasoline (NWTPH-Gx) & BTEX (EPA Method 8260D) in Soil

Matrix Spike Sample Identification: L200417-2

	Spiked Conc. (mg/kg)	MS Response (mg/kg)	MSD Response (mg/kg)	MS Recovery (%)	MSD Recovery (%)	RPD (%)	Limits Recovery (%)	Data Flag
Benzene	0.25	0.23	0.24	92	96	5.1	65-135	
Toluene	0.25	0.31	0.25	126	98	24.7	65-135	
Ethylbenzene	0.25	0.22	0.23	90	91	1.8	65-135	
Total Xylenes	0.75	0.90	0.72	119	96	22.1	65-135	

Surrogate Recovery (%)	MS	MSD	
Dibromofluoromethane	106	108	65-135
1,2-Dichloroethane-d4	125	127	65-135
Toluene-d8	98	99	65-135
4-Bromofluorobenzene	73	98	65-135

ACCEPTABLE RPD IS 35%

ANALYSES PERFORMED BY: Sherry Chilcutt

Laboratory Control Sample

	Spiked Conc. (mg/kg)	LCS Response (mg/kg)	LCS Recovery (%)	LCS Recovery Limits (%)	Data Flag
Benzene	0.25	0.21	84	80-120	
Toluene	0.25	0.20	80	80-120	
Ethylbenzene	0.25	0.21	82	80-120	
Total Xylenes	0.75	0.64	85	80-120	

Surrogate Recovery		
Dibromofluoromethane	104	65-135
1,2-Dichloroethane-d4	122	65-135
Toluene-d8	95	65-135
4-Bromofluorobenzene	74	65-135

Libby Environmental, Inc.

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NACHES PIT STOP PROJECT
AEG, LLC
Naches, Washington
Libby Project # L200421-4
Client Project # 16-102

Analyses of Diesel & Oil (NWTPH-Dx/Dx Extended) in Soil

Sample Number	Date Analyzed	Surrogate Recovery (%)	Diesel (mg/kg)	Oil (mg/kg)
Method Blank	4/22/2020	80	nd	nd
MW11-15	4/22/2020	91	nd	nd
MW11-15 Dup	4/22/2020	85	nd	nd
Practical Quantitation Limit			50	250

"nd" Indicates not detected at the listed detection limits.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (2-F Biphenyl): 65% TO 135%

ANALYSES PERFORMED BY: Sherry Chilcutt

Libby Environmental, Inc.

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Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@gmail.com

NACHES PIT STOP PROJECT
AEG, LLC
Libby Project # L200421-4
Date Received 4/21/2020
Time Received 8:21 AM

Received By MH

Sample Receipt Checklist

Chain of Custody

1. Is the Chain of Custody complete?	☑ Yes	☐ No	
2. How was the sample delivered?	☑ Hand Delivered	☐ Picked Up	☐ Shipped

Log In

3. Cooler or Shipping Container is present.	☑ Yes	☐ No	☐ N/A
4. Cooler or Shipping Container is in good condition.	☑ Yes	☐ No	☐ N/A
5. Cooler or Shipping Container has Custody Seals present.	☐ Yes	☑ No	☐ N/A
6. Was an attempt made to cool the samples?	☑ Yes	☐ No	☐ N/A
7. Temperature of cooler (0°C to 8°C recommended)	1.7 °C		
8. Temperature of sample(s) (0°C to 8°C recommended)	16.8 °C		
9. Did all containers arrive in good condition (unbroken)?	☑ Yes	☐ No	
10. Is it clear what analyses were requested?	☑ Yes	☐ No	
11. Did container labels match Chain of Custody?	☑ Yes	☐ No	
12. Are matrices correctly identified on Chain of Custody?	☑ Yes	☐ No	
13. Are correct containers used for the analysis indicated?	☑ Yes	☐ No	
14. Is there sufficient sample volume for indicated analysis?	☑ Yes	☐ No	
15. Were all containers properly preserved per each analysis?	☑ Yes	☐ No	
16. Were VOA vials collected correctly (no headspace)?	☑ Yes	☐ No	☐ N/A
17. Were all holding times able to be met?	☑ Yes	☐ No	

Discrepancies/ Notes

18. Was client notified of all discrepancies? ☐ Yes ☐ No ☑ N/A

Person Notified: _____ Date: _____

By Whom: _____ Via: _____

Regarding: _____

19. Comments. _____

Libby Environmental, Inc.

Chain of Custody Record

www.LibbyEnvironmental.com

4139 Libby Road NE
Olympia, WA 98506

Ph: 360-352-2110
Fax: 360-352-4154

Date: 4/21/2020 Page: 1 of 1

Client: AEG

Project Manager: B. Alba

Address:

Project Name: Naches pit stop

City: State: Zip:

Location: City, State: Naches, WA

Phone: Fax:

Collector: B. Alba Date of Collection: 4/20/2020

Client Project # 16-102

Email: balba @ aegwa.com

Sample Number	Depth	Time	Sample Type	Container Type	VOC 8260	NWTPH-Gx	BTEX 8021	NWTPH-HCID	NWTPH-Dx	NWTPH-Dx/Dx	c PAH 8270	PAH 8270	Semi Vol 8270	PCB 8082	MTCA 5 Metals	RCRA 8 Metals			Field Notes
1 MW11-5	5	1348																	
2 MW11-10	10	1357																	
3 MW11-15	15	1402				X	X			X									
4 MW11-20	20	1409																	
5																			
6																			
7																			
8																			
9																			
10																			
11																			
12																			
13																			
14																			
15																			
16																			
17																			

Relinquished by:	Date / Time	Received by:	Date / Time
[signature]	4/21/2020	Melissa [signature]	4/21/2020 0821
Relinquished by:	Date / Time	Received by:	Date / Time
Relinquished by:	Date / Time	Received by:	Date / Time

Sample Receipt

Good Condition? Y N

Temp. °C

Seals Intact? Y N N/A

Total Number of Containers

Remarks:

TAT: 24HR 48HR 5-DAY (circled)

Distribution: White - Lab, Yellow - File, Pink - Originator

Libby Environmental, Inc.

3322 South Bay Road NE • Olympia, WA 98506-2957

May 5, 2020

Becky Dilba
Associated Environmental Group, LLC
2633 Parkmont Lane SW, Suite A
Olympia, WA 98502

Dear Ms. Dilba:

Please find enclosed the analytical data report for the Naches Pit Stop Project located in Naches, Washington.

The results of the analyses are summarized in the attached tables. Applicable detection limits and QA/QC data are included. The sample(s) will be disposed of in 30 days unless we are contacted to arrange long term storage.

Libby Environmental, Inc. appreciates the opportunity to have provided analytical services for this project. If you have any further questions about the data report, please give me a call. It was a pleasure working with you on this project, and we are looking forward to the next opportunity to work together.

Sincerely,

Sherry L. Chilcutt
Senior Chemist
Libby Environmental, Inc.

Phone (360) 352-2110 • Fax (360) 352-4154 • libbyenv@gmail.com

Libby Environmental, Inc.

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NACHES PIT STOP PROJECT
AEG, LLC
Naches, Washington
Libby Project # L200417-3
Client Project # 16-102

Analyses of Gasoline (NWTPH-Gx) & BTEX (EPA Method 8260D) in Soil

Sample Description		Method Blank	MW10-14	MW10-20	B6-15	B6-20	B6-20 Dup
Date Sampled		N/A	4/17/2020	4/17/2020	4/17/2020	4/17/2020	4/17/2020
Date Analyzed	PQL	4/19/2020	4/19/2020	4/19/2020	4/19/2020	4/20/2020	4/19/2020
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Benzene	0.02	nd	nd	nd	nd	nd	nd
Toluene	0.10	nd	nd	nd	nd	nd	nd
Ethylbenzene	0.05	nd	nd	nd	2.9	nd	nd
Total Xylenes	0.15	nd	nd	nd	1.6	nd	nd
Gasoline	10	nd	nd	nd	1620	15	19
Surrogate Recovery							
Dibromofluoromethane		110	108	104	103	100	101
1,2-Dichloroethane-d4		129	127	115	121	113	114
Toluene-d8		98	97	96	104	95	96
4-Bromofluorobenzene		71	99	96	111	86	100

"nd" Indicates not detected at listed detection limit.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 65% TO 135%

ANALYSES PERFORMED BY: Sherry Chilcutt

Libby Environmental, Inc.

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NACHES PIT STOP PROJECT
AEG, LLC
Naches, Washington
Libby Project # L200417-3
Client Project # 16-102

Analyses of Gasoline (NWTPH-Gx) & BTEX (EPA Method 8260D) in Soil

Sample Description		B6-25	Method Blank
Date Sampled		4/17/2020	N/A
Date Analyzed	PQL (mg/kg)	4/19/2020 (mg/kg)	4/20/2020 (mg/kg)
Benzene	0.02	nd	nd
Toluene	0.10	nd	nd
Ethylbenzene	0.05	nd	nd
Total Xylenes	0.15	nd	nd
Gasoline	10	nd	nd
Surrogate Recovery			
Dibromofluoromethane		103	105
1,2-Dichloroethane-d4		114	122
Toluene-d8		96	82
4-Bromofluorobenzene		97	88

"nd" Indicates not detected at listed detection limit.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 65% TO 135%

ANALYSES PERFORMED BY: Sherry Chilcutt

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NACHES PIT STOP PROJECT
AEG, LLC
Naches, Washington
Libby Project # L200417-3
Client Project # 16-102

QA/QC for Gasoline (NWTPH-Gx) & BTEX (EPA Method 8260D) in Soil

Matrix Spike Sample Identification: L200415-1

	Spiked Conc. (mg/kg)	MS Response (mg/kg)	MSD Response (mg/kg)	MS Recovery (%)	MSD Recovery (%)	RPD (%)	Limits Recovery (%)	Data Flag
Benzene	0.25	0.23	0.24	94	95	1.3	65-135	
Toluene	0.25	0.17	0.21	68	85	22.6	65-135	
Ethylbenzene	0.25	0.23	0.23	91	91	0.0	65-135	
Total Xylenes	0.75	0.60	0.76	81	101	22.2	65-135	

Surrogate Recovery (%)	MS	MSD	
Dibromofluoromethane	111	111	65-135
1,2-Dichloroethane-d4	134	134	65-135
Toluene-d8	82	100	65-135
4-Bromofluorobenzene	110	109	65-135

ACCEPTABLE RPD IS 35%

ANALYSES PERFORMED BY: Sherry Chilcutt

Laboratory Control Sample

	Spiked Conc. (mg/kg)	LCS Response (mg/kg)	LCS Recovery (%)	LCS Recovery Limits (%)	Data Flag
Benzene	0.25	0.25	98	80-120	
Toluene	0.25	0.21	84	80-120	
Ethylbenzene	0.25	0.21	82	80-120	
Total Xylenes	0.75	0.62	82	80-120	

Surrogate Recovery		
Dibromofluoromethane	113	65-135
1,2-Dichloroethane-d4	133	65-135
Toluene-d8	99	65-135
4-Bromofluorobenzene	68	65-135

ANALYSES PERFORMED BY: Sherry Chilcutt

Libby Environmental, Inc.

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NACHES PIT STOP PROJECT
AEG, LLC
Naches, Washington
Libby Project # L200417-3
Client Project # 16-102

Analyses of Diesel & Oil (NWTPH-Dx/Dx Extended) in Soil

Sample Number	Date Analyzed	Surrogate Recovery (%)	Diesel (mg/kg)	Oil (mg/kg)
Method Blank	4/20/2020	89	nd	nd
MW10-14	4/20/2020	int	480	nd
MW10-20	4/20/2020	90	nd	nd
B6-15	4/20/2020	int	1070	nd
B6-20	4/20/2020	85	nd	nd
B6-25	4/20/2020	89	nd	nd
B6-25 Dup	4/20/2020	89	nd	nd
Practical Quantitation Limit			50	250

"nd" Indicates not detected at the listed detection limits.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (2-F Biphenyl): 65% TO 135%

ANALYSES PERFORMED BY: Sherry Chilcutt

Libby Environmental, Inc.

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Email: libbyenv@gmail.com

NACHES PIT STOP PROJECT
AEG, LLC
Naches, Washington
Libby Project # L200417-3
Client Project # 16-102

Analyses of Gasoline (NWTPH-Gx) & BTEX (EPA Method 8260D) in Water

Sample Description		Method Blank	B6-W	B6-W Dup
Date Sampled		N/A	4/17/2020	4/17/2020
Date Analyzed	PQL (µg/L)	4/24/2020 (µg/L)	4/24/2020 (µg/L)	4/24/2020 (µg/L)
Benzene	1.0	nd	<2.0	<2.0
Toluene	2.0	nd	<10.0	<10.0
Ethylbenzene	1.0	nd	63	68
Total Xylenes	2.0	nd	44	43
Gasoline	100	nd	8790	9180
Surrogate Recovery				
Dibromofluoromethane		116	118	120
1,2-Dichloroethane-d4		128	133	131
Toluene-d8		97	97	70
4-Bromofluorobenzene		67	97	99

"nd" Indicates not detected at listed detection limit.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 65% TO 135%

ANALYSES PERFORMED BY: Paul Burke

Libby Environmental, Inc.

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NACHES PIT STOP PROJECT
AEG, LLC
Naches, Washington
Libby Project # L200417-3
Client Project # 16-102

QA/QC Data - EPA 8260D Analyses

Matrix Spike Sample Identification: B6-W

	Spiked Conc. (µg/L)	MS Response (µg/L)	MSD Response (µg/L)	MS Recovery (%)	MSD Recovery (%)	RPD (%)	Limits Recovery (%)	Data Flag
Benzene	5.0	5.0	5.4	100	108	7.5	65-135	
Toluene	5.0	4.4	4.6	89	92	3.8	65-135	
Ethylbenzene	5.0	4.9	2.4	98	48	68.5	65-135	R, S
Total Xylenes	15.0	14.1	11.7	94	78	18.6	65-135	

Surrogate Recovery (%)	MS	MSD	
Dibromofluoromethane	112	117	65-135
1,2-Dichloroethane-d4	121	129	65-135
Toluene-d8	95	95	65-135
4-Bromofluorobenzene	101	84	65-135

ACCEPTABLE RPD IS 35%
"S" Spike compound recovery is outside acceptance limits due to high sample contamination.
"R" High relative percent difference observed due to high sample concentration.

ANALYSES PERFORMED BY: Paul Burke

Laboratory Control Sample

	Spiked Conc. (µg/L)	LCS Response (µg/L)	LCS Recovery (%)	LCS Recovery Limits (%)	Data Flag
Benzene	5.0	5.3	106	80-120	
Toluene	5.0	4.7	94	80-120	
Ethylbenzene	5.0	4.5	90	80-120	
Total Xylenes	15.0	12.9	86	80-120	

Surrogate Recovery		
Dibromofluoromethane	113	65-135
1,2-Dichloroethane-d4	120	65-135
Toluene-d8	94	65-135
4-Bromofluorobenzene	71	65-135

ANALYSES PERFORMED BY: Paul Burke

Libby Environmental, Inc.

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Olympia, WA 98506
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Email: libbyenv@gmail.com

NACHES PIT STOP PROJECT
AEG, LLC
Naches, Washington
Libby Project # L200417-3
Client Project # 16-102

Analyses of Diesel & Oil (NWTPH-Dx/Dx Extended) in Water

Sample Number	Date Analyzed	Surrogate Recovery (%)	Diesel (µg/L)	Oil (µg/L)
Method Blank	4/23/2020	85	nd	nd
B6-W	4/23/2020	87	1390	nd
Practical Quantitation Limit			200	400

"nd" Indicates not detected at the listed detection limits.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (2-F Biphenyl): 65% TO 135%

ANALYSES PERFORMED BY: Sherry Chilcutt

Libby Environmental, Inc.

3322 South Bay Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@gmail.com

NACHES PIT STOP PROJECT
AEG, LLC
Libby Project # L200417-3
Date Received 4/17/2020
Time Received 3:20 PM

Received By KE

Sample Receipt Checklist

Chain of Custody

1. Is the Chain of Custody complete?	☑ Yes	☐ No	
2. How was the sample delivered?	☑ Hand Delivered	☐ Picked Up	☐ Shipped

Log In

3. Cooler or Shipping Container is present.	☑ Yes	☐ No	☐ N/A
4. Cooler or Shipping Container is in good condition.	☑ Yes	☐ No	☐ N/A
5. Cooler or Shipping Container has Custody Seals present.	☐ Yes	☑ No	☐ N/A
6. Was an attempt made to cool the samples?	☐ Yes	☑ No	☐ N/A
7. Temperature of cooler (0°C to 8°C recommended)	15.8 °C		
8. Temperature of sample(s) (0°C to 8°C recommended)	15.8 °C		
9. Did all containers arrive in good condition (unbroken)?	☑ Yes	☐ No	
10. Is it clear what analyses were requested?	☑ Yes	☐ No	
11. Did container labels match Chain of Custody?	☑ Yes	☐ No	
12. Are matrices correctly identified on Chain of Custody?	☑ Yes	☐ No	
13. Are correct containers used for the analysis indicated?	☑ Yes	☐ No	
14. Is there sufficient sample volume for indicated analysis?	☑ Yes	☐ No	
15. Were all containers properly preserved per each analysis?	☐ Yes	☑ No	
16. Were VOA vials collected correctly (no headspace)?	☑ Yes	☐ No	☐ N/A
17. Were all holding times able to be met?	☑ Yes	☐ No	

Discrepancies/ Notes

18. Was client notified of all discrepancies? ☐ Yes ☑ No ☐ N/A

Person Notified: _____ Date: _____

By Whom: _____ Via: _____

Regarding: _____

19. Comments. Soil VOAs preserved upon reciept.

Libby Environmental, Inc.

Chain of Custody Record

www.LibbyEnvironmental.com

3322 South Bay Road NE
Olympia, WA 98506
Ph: 360-352-2110
Fax: 360-352-4154

Date: 4-17-20 Page: 1 of 1

Client: AEG

Project Manager: B. Dilba

Address:

Project Name: Nachs Pit Stop

City: State: Zip:

Location: City, State: Nachs, WA

Phone: Fax:

Collector: B. Dilba Date of Collection: 4/17/2020

Client Project # 16-102

Email: bdilba@aegwa.com

Sample Number	Depth	Time	Sample Type	Container Type	VOC 8260	NWTPH-Gx	BTEX 8021	NWTPH-HCID	NWTPH-Dx	NWTPH-Dx/Dx	c PAH 8270	PAH 8270	Semi Vol 8270	PCB 8082	MTCA 5 Metals	RCRA 8 Metals	VPH	EPH	Field Notes
1 MW10-5	5	813																	
2 MW10-10	10	835																	
3 MW10-15	15	847				x	x			y									
4 MW10-20		903				x	x			x									
5 MW10-25		925																	
6 B6-5		1034																	
7 B6-10		1044																	
8 B6-15		1056				x	x			x						x	y		
9 B6-20		1101				x	x			x									
10 B6-25		1107				x	x			x									
11 B6-W						(x)	(x)			(x)									added per Becky 4-23-20
12																			
13																			
14																			
15																			
16																			
17																			

Relinquished by:	Date / Time	Received by:	Date / Time
		Rodney Eley	4/17/20 1520
Relinquished by:	Date / Time	Received by:	Date / Time
Relinquished by:	Date / Time	Received by:	Date / Time

Sample Receipt

Good Condition?	Y	N
Cooler Temp.		°C
Sample Temp.		°C
Total Number of Containers		

Remarks: Standard TAT

TAT: 24HR 48HR 5-DAY

Distribution: White - Lab, Yellow - File, Pink - Originator

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Libby Environmental
Sherry Chilcutt
3322 South Bay Road NE
Olympia, WA 98506

RE: Naches Pit Stop
Work Order Number: 2004212

May 04, 2020

Attention Sherry Chilcutt:

Fremont Analytical, Inc. received 1 sample(s) on 4/20/2020 for the analyses presented in the following report.

Extractable Petroleum Hydrocarbons by NWEPH
Sample Moisture (Percent Moisture)
Volatile Petroleum Hydrocarbons by NWVPH

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

Date: *05/04/2020*

CLIENT: Libby Environmental
Project: Naches Pit Stop
Work Order: 2004212

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2004212-001	B6-15	04/17/2020 10:56 AM	04/20/2020 9:30 AM

Case Narrative

WO#: **2004212**
Date: **5/4/2020**

CLIENT: Libby Environmental
Project: Naches Pit Stop

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF)
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Analytical Report

Work Order: **2004212**
Date Reported: **5/4/2020**

Client: Libby Environmental
Collection Date: 4/17/2020 10:56:00 AM
Project: Naches Pit Stop
Lab ID: 2004212-001
Matrix: Soil
Client Sample ID: **B6-15**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Extractable Petroleum Hydrocarbons by NWEPH				Batch ID: 28165		Analyst: DW
Aliphatic Hydrocarbon (C8-C10)	58.3	22.5	*	mg/Kg-dry	1	5/1/2020 8:29:00 PM
Aliphatic Hydrocarbon (C10-C12)	67.9	11.3		mg/Kg-dry	1	5/1/2020 8:29:00 PM
Aliphatic Hydrocarbon (C12-C16)	275	11.3		mg/Kg-dry	1	5/1/2020 8:29:00 PM
Aliphatic Hydrocarbon (C16-C21)	265	11.3		mg/Kg-dry	1	5/1/2020 8:29:00 PM
Aliphatic Hydrocarbon (C21-C34)	49.5	11.3		mg/Kg-dry	1	5/1/2020 8:29:00 PM
Aromatic Hydrocarbon (C8-C10)	ND	11.3	*	mg/Kg-dry	1	5/2/2020 3:53:00 AM
Aromatic Hydrocarbon (C10-C12)	46.9	11.3		mg/Kg-dry	1	5/2/2020 3:53:00 AM
Aromatic Hydrocarbon (C12-C16)	94.2	11.3		mg/Kg-dry	1	5/2/2020 3:53:00 AM
Aromatic Hydrocarbon (C16-C21)	212	11.3		mg/Kg-dry	1	5/2/2020 3:53:00 AM
Aromatic Hydrocarbon (C21-C34)	33.3	11.3		mg/Kg-dry	1	5/2/2020 3:53:00 AM
Surr: 1-Chlorooctadecane	80.9	60 - 140		%Rec	1	5/1/2020 8:29:00 PM
Surr: o-Terphenyl	83.8	60 - 140		%Rec	1	5/2/2020 3:53:00 AM

NOTES:
* - Flagged value is not within established control limits.

Volatile Petroleum Hydrocarbons by NWVPH				Batch ID: 28129		Analyst: CR
Aliphatic Hydrocarbon (C5-C6)	ND	1.83		mg/Kg-dry	1	4/23/2020 3:39:44 AM
Aliphatic Hydrocarbon (C6-C8)	114	2.61		mg/Kg-dry	1	4/23/2020 3:39:44 AM
Aliphatic Hydrocarbon (C8-C10)	78.7	1.46		mg/Kg-dry	1	4/23/2020 3:39:44 AM
Aliphatic Hydrocarbon (C10-C12)	ND	1.57		mg/Kg-dry	1	4/23/2020 3:39:44 AM
Aromatic Hydrocarbon (C8-C10)	107	3.14		mg/Kg-dry	1	4/23/2020 3:39:44 AM
Aromatic Hydrocarbon (C10-C12)	680	62.8	D	mg/Kg-dry	100	4/23/2020 1:54:31 PM
Aromatic Hydrocarbon (C12-C13)	1,230	732	D	mg/Kg-dry	100	4/23/2020 1:54:31 PM
Surr: 1,4-Difluorobenzene	113	65 - 140		%Rec	1	4/23/2020 3:39:44 AM
Surr: Bromofluorobenzene	117	65 - 140		%Rec	1	4/23/2020 3:39:44 AM

Sample Moisture (Percent Moisture)				Batch ID: R58698		Analyst: EH
Percent Moisture	12.6	0.500		wt%	1	4/21/2020 9:56:13 AM

Work Order: 2004212
CLIENT: Libby Environmental
Project: Naches Pit Stop

QC SUMMARY REPORT

Extractable Petroleum Hydrocarbons by NWEPH

Sample ID: **MB-28165** SampType: **MBLK** Units: **mg/Kg** Prep Date: **4/27/2020** RunNo: **58951**
Client ID: **MBLKS** Batch ID: **28165** Analysis Date: **5/1/2020** SeqNo: **1177614**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C8-C10)	ND	20.0									*
Aliphatic Hydrocarbon (C10-C12)	ND	10.0									
Aliphatic Hydrocarbon (C12-C16)	ND	10.0									
Aliphatic Hydrocarbon (C16-C21)	ND	10.0									
Aliphatic Hydrocarbon (C21-C34)	ND	10.0									
Surr: 1-Chlorooctadecane	86.8		100.0		86.8	60	140				

NOTES:
* - Flagged value is not within established control limits.

Sample ID: **LCS-28165** SampType: **LCS** Units: **mg/Kg** Prep Date: **4/27/2020** RunNo: **58951**
Client ID: **LCSS** Batch ID: **28165** Analysis Date: **5/1/2020** SeqNo: **1177613**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C8-C10)	136	20.0	250.0	0	54.3	70	130				S
Aliphatic Hydrocarbon (C10-C12)	105	10.0	125.0	0	83.8	70	130				
Aliphatic Hydrocarbon (C12-C16)	119	10.0	125.0	0	95.3	70	130				
Aliphatic Hydrocarbon (C16-C21)	122	10.0	125.0	0	97.5	70	130				
Aliphatic Hydrocarbon (C21-C34)	126	10.0	125.0	0	101	70	130				
Surr: 1-Chlorooctadecane	82.8		100.0		82.8	60	140				

NOTES:
S - Outlying spike recovery observed (low bias). Samples will be qualified with a *.

Sample ID: **2004212-001ADUP** SampType: **DUP** Units: **mg/Kg-dry** Prep Date: **4/27/2020** RunNo: **58951**
Client ID: **B6-15** Batch ID: **28165** Analysis Date: **5/1/2020** SeqNo: **1177612**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C8-C10)	47.0	21.4						58.25	21.4	25	*
Aliphatic Hydrocarbon (C10-C12)	54.3	10.7						67.85	22.3	25	
Aliphatic Hydrocarbon (C12-C16)	274	10.7						274.9	0.163	25	
Aliphatic Hydrocarbon (C16-C21)	269	10.7						264.8	1.42	25	
Aliphatic Hydrocarbon (C21-C34)	56.8	10.7						49.47	13.7	25	
Surr: 1-Chlorooctadecane	96.2		107.1		89.9	60	140		0		

Work Order: 2004212
CLIENT: Libby Environmental
Project: Naches Pit Stop

QC SUMMARY REPORT

Extractable Petroleum Hydrocarbons by NWEPH

Sample ID: **2004212-001ADUP** SampType: **DUP** Units: **mg/Kg-dry** Prep Date: **4/27/2020** RunNo: **58951**
Client ID: **B6-15** Batch ID: **28165** Analysis Date: **5/1/2020** SeqNo: **1177612**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

NOTES:
* - Flagged value is not within established control limits.

Sample ID: **2004212-001AMS** SampType: **MS** Units: **mg/Kg-dry** Prep Date: **4/27/2020** RunNo: **58951**
Client ID: **B6-15** Batch ID: **28165** Analysis Date: **5/1/2020** SeqNo: **1177615**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C8-C10)	162	21.8	273.0	58.25	38.0	70	130				S
Aliphatic Hydrocarbon (C10-C12)	170	10.9	136.5	67.85	74.8	70	130				
Aliphatic Hydrocarbon (C12-C16)	416	10.9	136.5	274.9	103	70	130				
Aliphatic Hydrocarbon (C16-C21)	397	10.9	136.5	264.8	97.0	70	130				
Aliphatic Hydrocarbon (C21-C34)	213	10.9	136.5	49.47	120	70	130				
Surr: 1-Chlorooctadecane	98.1		109.2		89.8	60	140				

NOTES:
S - Outlying spike recovery observed (low bias).

Sample ID: **2004212-001AMSD** SampType: **MSD** Units: **mg/Kg-dry** Prep Date: **4/27/2020** RunNo: **58951**
Client ID: **B6-15** Batch ID: **28165** Analysis Date: **5/1/2020** SeqNo: **1177616**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C8-C10)	135	21.4	267.6	58.25	28.6	70	130	162.1	18.4	30	S
Aliphatic Hydrocarbon (C10-C12)	136	10.7	133.8	67.85	50.8	70	130	169.9	22.2	30	S
Aliphatic Hydrocarbon (C12-C16)	354	10.7	133.8	274.9	58.9	70	130	416.1	16.2	30	S
Aliphatic Hydrocarbon (C16-C21)	349	10.7	133.8	264.8	63.3	70	130	397.2	12.8	30	S
Aliphatic Hydrocarbon (C21-C34)	190	10.7	133.8	49.47	105	70	130	212.9	11.2	30	
Surr: 1-Chlorooctadecane	85.8		107.1		80.2	60	140		0		

NOTES:
S - Outlying spike recovery observed (low bias).

Work Order: 2004212
CLIENT: Libby Environmental
Project: Naches Pit Stop

QC SUMMARY REPORT

Extractable Petroleum Hydrocarbons by NWEPH

Sample ID: **MB-28165** SampType: **MBLK** Units: **mg/Kg** Prep Date: **4/27/2020** RunNo: **58951**
Client ID: **MBLKS** Batch ID: **28165** Analysis Date: **5/2/2020** SeqNo: **1177623**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C8-C10)	ND	10.0									*
Aromatic Hydrocarbon (C10-C12)	ND	10.0									
Aromatic Hydrocarbon (C12-C16)	ND	10.0									
Aromatic Hydrocarbon (C16-C21)	ND	10.0									
Aromatic Hydrocarbon (C21-C34)	ND	10.0									
Surr: o-Terphenyl	97.4		100.0		97.4	60	140				

NOTES:
* - Flagged value is not within established control limits.

Sample ID: **LCS-28165** SampType: **LCS** Units: **mg/Kg** Prep Date: **4/27/2020** RunNo: **58951**
Client ID: **LCSS** Batch ID: **28165** Analysis Date: **5/2/2020** SeqNo: **1177622**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C8-C10)	144	10.0	250.0	0	57.6	70	130				S
Aromatic Hydrocarbon (C10-C12)	104	10.0	125.0	0	82.8	70	130				
Aromatic Hydrocarbon (C12-C16)	117	10.0	125.0	0	93.6	70	130				
Aromatic Hydrocarbon (C16-C21)	138	10.0	125.0	0	110	70	130				
Aromatic Hydrocarbon (C21-C34)	99.2	10.0	125.0	0	79.4	70	130				
Surr: o-Terphenyl	99.8		100.0		99.8	60	140				

NOTES:
S - Outlying spike recovery observed (low bias). Samples will be qualified with a *.

Sample ID: **2004212-001ADUP** SampType: **DUP** Units: **mg/Kg-dry** Prep Date: **4/27/2020** RunNo: **58951**
Client ID: **B6-15** Batch ID: **28165** Analysis Date: **5/2/2020** SeqNo: **1177621**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C8-C10)	ND	10.7						0		25	*
Aromatic Hydrocarbon (C10-C12)	60.1	10.7						46.88	24.7	25	R
Aromatic Hydrocarbon (C12-C16)	117	10.7						94.17	21.3	25	
Aromatic Hydrocarbon (C16-C21)	259	10.7						212.4	19.6	25	
Aromatic Hydrocarbon (C21-C34)	32.7	10.7						33.33	1.99	25	
Surr: o-Terphenyl	112		107.1		105	60	140		0		

Work Order: 2004212
CLIENT: Libby Environmental
Project: Naches Pit Stop

QC SUMMARY REPORT

Extractable Petroleum Hydrocarbons by NWEPH

Sample ID: **2004212-001ADUP** SampType: **DUP** Units: **mg/Kg-dry** Prep Date: **4/27/2020** RunNo: **58951**
Client ID: **B6-15** Batch ID: **28165** Analysis Date: **5/2/2020** SeqNo: **1177621**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

NOTES:
R - High RPD due to suspected sample inhomogeneity.
* - Flagged value is not within established control limits.

Sample ID: **2004212-001AMS** SampType: **MS** Units: **mg/Kg-dry** Prep Date: **4/27/2020** RunNo: **58951**
Client ID: **B6-15** Batch ID: **28165** Analysis Date: **5/2/2020** SeqNo: **1177624**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C8-C10)	152	10.9	273.0	6.289	53.3	70	130				S
Aromatic Hydrocarbon (C10-C12)	175	10.9	136.5	46.88	93.9	70	130				
Aromatic Hydrocarbon (C12-C16)	258	10.9	136.5	94.17	120	70	130				
Aromatic Hydrocarbon (C16-C21)	381	10.9	136.5	212.4	123	70	130				
Aromatic Hydrocarbon (C21-C34)	127	10.9	136.5	33.33	68.3	70	130				S
Surr: o-Terphenyl	102		109.2		93.8	60	140				

NOTES:
S - Outlying spike recovery observed (low bias).

Sample ID: **2004212-001AMSD** SampType: **MSD** Units: **mg/Kg-dry** Prep Date: **4/27/2020** RunNo: **58951**
Client ID: **B6-15** Batch ID: **28165** Analysis Date: **5/2/2020** SeqNo: **1177625**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C8-C10)	155	10.7	267.6	6.289	55.5	70	130	151.9	1.97	30	S
Aromatic Hydrocarbon (C10-C12)	168	10.7	133.8	46.88	90.4	70	130	175.0	4.15	30	
Aromatic Hydrocarbon (C12-C16)	238	10.7	133.8	94.17	108	70	130	257.5	7.83	30	
Aromatic Hydrocarbon (C16-C21)	376	10.7	133.8	212.4	123	70	130	380.7	1.11	30	
Aromatic Hydrocarbon (C21-C34)	135	10.7	133.8	33.33	76.0	70	130	126.6	6.52	30	
Surr: o-Terphenyl	109		107.1		102	60	140		0		

NOTES:
S - Outlying spike recovery observed (low bias).

Work Order: 2004212
CLIENT: Libby Environmental
Project: Naches Pit Stop

QC SUMMARY REPORT

Volatile Petroleum Hydrocarbons by NWVPH

Sample ID: **LCS-28129** SampType: **LCS** Units: **mg/Kg** Prep Date: **4/22/2020** RunNo: **58886**
Client ID: **LCSS** Batch ID: **28129** Analysis Date: **4/22/2020** SeqNo: **1176018**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	30.6	1.75	30.00	0	102	70	130				
Aliphatic Hydrocarbon (C6-C8)	9.88	2.50	10.00	0	98.8	70	130				
Aliphatic Hydrocarbon (C8-C10)	9.49	1.40	10.00	0	94.9	70	130				
Aliphatic Hydrocarbon (C10-C12)	10.2	1.50	10.00	0	102	70	130				
Aromatic Hydrocarbon (C8-C10)	43.8	3.00	40.00	0	110	70	130				
Aromatic Hydrocarbon (C10-C12)	10.6	0.600	10.00	0	106	70	130				
Aromatic Hydrocarbon (C12-C13)	10.8	7.00	10.00	0	108	70	130				
Surr: 1,4-Difluorobenzene	2.88		2.500		115	65	140				
Surr: Bromofluorobenzene	2.76		2.500		110	65	140				

Sample ID: **LCSD-28129** SampType: **LCSD** Units: **mg/Kg** Prep Date: **4/22/2020** RunNo: **58886**
Client ID: **LCSS02** Batch ID: **28129** Analysis Date: **4/22/2020** SeqNo: **1176019**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	30.9	1.75	30.00	0	103	70	130	30.57	0.956	20	
Aliphatic Hydrocarbon (C6-C8)	9.67	2.50	10.00	0	96.7	70	130	9.882	2.21	20	
Aliphatic Hydrocarbon (C8-C10)	10.2	1.40	10.00	0	102	70	130	9.493	6.83	20	
Aliphatic Hydrocarbon (C10-C12)	10.2	1.50	10.00	0	102	70	130	10.24	0.0854	20	
Aromatic Hydrocarbon (C8-C10)	43.8	3.00	40.00	0	109	70	130	43.85	0.182	20	
Aromatic Hydrocarbon (C10-C12)	10.3	0.600	10.00	0	103	70	130	10.64	3.75	20	
Aromatic Hydrocarbon (C12-C13)	10.5	7.00	10.00	0	105	70	130	10.77	2.62	20	
Surr: 1,4-Difluorobenzene	2.88		2.500		115	65	140		0		
Surr: Bromofluorobenzene	2.72		2.500		109	65	140		0		

Sample ID: **MB-28129** SampType: **MBLK** Units: **mg/Kg** Prep Date: **4/22/2020** RunNo: **58886**
Client ID: **MBLKS** Batch ID: **28129** Analysis Date: **4/22/2020** SeqNo: **1176020**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	ND	1.75		0	0						
Aliphatic Hydrocarbon (C6-C8)	ND	2.50		0	0						

Work Order: 2004212
CLIENT: Libby Environmental
Project: Naches Pit Stop

QC SUMMARY REPORT

Volatile Petroleum Hydrocarbons by NWVPH

Sample ID: **MB-28129** SampType: **MBLK** Units: **mg/Kg** Prep Date: **4/22/2020** RunNo: **58886**
Client ID: **MBLKS** Batch ID: **28129** Analysis Date: **4/22/2020** SeqNo: **1176020**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C8-C10)	ND	1.40		0	0						
Aliphatic Hydrocarbon (C10-C12)	ND	1.50		0	0						
Aromatic Hydrocarbon (C8-C10)	ND	3.00		0	0						
Aromatic Hydrocarbon (C10-C12)	ND	0.600		0	0						
Aromatic Hydrocarbon (C12-C13)	ND	7.00		0	0						
Surr: 1,4-Difluorobenzene	2.78		2.500		111	65	140				
Surr: Bromofluorobenzene	2.75		2.500		110	65	140				

Sample ID: **2004212-001BDUP** SampType: **DUP** Units: **mg/Kg-dry** Prep Date: **4/22/2020** RunNo: **58886**
Client ID: **B6-15** Batch ID: **28129** Analysis Date: **4/23/2020** SeqNo: **1176014**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	ND	18.3		0	0			0		25	D
Aliphatic Hydrocarbon (C6-C8)	100	26.1		0	0			86.75	14.1	25	D
Aliphatic Hydrocarbon (C8-C10)	78.0	14.6		0	0			79.04	1.27	25	D
Aliphatic Hydrocarbon (C10-C12)	225	15.7		0	0			237.2	5.24	25	D
Aromatic Hydrocarbon (C8-C10)	112	31.4		0	0			111.9	0.0664	25	D
Aromatic Hydrocarbon (C10-C12)	764	6.28		0	0			738.7	3.42	25	D
Aromatic Hydrocarbon (C12-C13)	1,140	73.2		0	0			1,111	2.76	25	D
Surr: 1,4-Difluorobenzene	29.5		26.15		113	65	140		0		D
Surr: Bromofluorobenzene	29.3		26.15		112	65	140		0		D

Sample Log-In Check List

Client Name:	**LIBBY**	Work Order Number:	**2004212**
Logged by:	**Carissa True**	Date Received:	**4/20/2020 9:30:00 AM**

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	UPS		

Log In

3.	Coolers are present?	Yes ☑	No ☐	NA ☐
4.	Shipping container/cooler in good condition?	Yes ☑	No ☐	
5.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes ☐	No ☑	Not Required ☐
6.	Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
7.	Were all items received at a temperature of >2°C to 6°C *	Yes ☐	No ☑	NA ☐
		Approved by client.		
8.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
9.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
10.	Are samples properly preserved?	Yes ☑	No ☐	
11.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
12.	Is there headspace in the VOA vials?	Yes ☐	No ☐	NA ☑
13.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
14.	Does paperwork match bottle labels?	Yes ☑	No ☐	
15.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
16.	Is it clear what analyses were requested?	Yes ☑	No ☐	
17.	Were all holding times able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

18.	Was client notified of all discrepancies with this order?	Yes ☑	No ☐	NA ☐

Person Notified:	Kodev Elev	Date:	4/20/2020
By Whom:	Carissa True	Via:	☑ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:	Confirm VPH and TAT		
Client Instructions:	Ranges only , STD		

19. Additional remarks:

Item Information

Item #	Temp ºC
Cooler 1	8.8
Sample 1	8.6

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

Libby Environmental, Inc.

3322 South Bay Road NE
Olympia, WA 98506
Ph: 360-352-2110
Fax: 360-352-4154

Chain of Custody Record

www.LibbyEnvironmental.com

2004212

Date: 4/17/2020 Page: 1 of 1

Client: Libby Environmental
Address: See above
City: State: Zip:
Phone: Fax:
Client Project #

Project Manager: Sherry Chilcutt
Project Name: Naches Pit Stop
Location: City, State: Naches, Wa
Collector: BD Date of Collection: 4/17/2020
Email: libbyenv@gmail.com

	Sample Number	Depth	Time	Sample Type	Container Type	VOC 8260	NWTPH-Gx	BTEX 8021	NWTPH-HCID	NWTPH-Dx	NWTPH-Dx/Dx	c PAH 8270	PAH 8270	Semi Vol 8270	PCB 8082	MTCA 5 Metals	RCRA 8 Metals	EPH	VPH		Field Notes
1	B6-15	15'	1056	Soil	Jar, VOA													X	X		
2																					
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					
11																					
12																					
13																					
14																					
15																					
16																					
17																					

Relinquished by:	Date / Time	Received by:	Date / Time
Kayley Eley	4/17/20	UPS	4/17/20
UPS	4/ /20	[illegible]	4/20/20 0930

Sample Receipt

Good Condition?	Y	N
Cooler Temp.		°C
Sample Temp.		°C
Total Number of Containers		

Remarks:

TAT: 24HR 48HR 5-DAY

Distribution: White - Lab, Yellow - File, Pink - Originator

Libby Environmental, Inc.

3322 South Bay Road NE • Olympia, WA 98506-2957

May 15, 2020

Scott Rose
Associated Environmental Group, LLC
2633 Parkmont Lane SW, Suite A
Olympia, WA 98502

Dear Mr. Rose:

Please find enclosed the analytical data report for the Naches Pit Stop Project located in Naches, Washington.

The results of the analyses are summarized in the attached tables. Applicable detection limits and QA/QC data are included. The sample(s) will be disposed of in 30 days unless we are contacted to arrange long term storage.

Libby Environmental, Inc. appreciates the opportunity to have provided analytical services for this project. If you have any further questions about the data report, please give me a call. It was a pleasure working with you on this project, and we are looking forward to the next opportunity to work together.

Sincerely,

Sherry L. Chilcutt
Senior Chemist
Libby Environmental, Inc.

Phone (360) 352-2110 • Fax (360) 352-4154 • libbyenv@gmail.com

Libby Environmental, Inc.

3322 South Bay Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@gmail.com

NACHES PIT STOP PROJECT
AEG, LLC
Naches, Washington
Libby Project # L200511-1
Client Project # 16-102

Analyses of Gasoline (NWTPH-Gx) & BTEX (EPA Method 8260D) in Water

Sample Description		Method Blank	Method Blank	MW-1	MW-2	MW-4	MW-5
Date Sampled		N/A	N/A	5/8/2020	5/8/2020	5/8/2020	5/8/2020
Date Analyzed	PQL (µg/L)	5/13/2020 (µg/L)	5/14/2020 (µg/L)	5/13/2020 (µg/L)	5/13/2020 (µg/L)	5/13/2020 (µg/L)	5/13/2020 (µg/L)
Benzene	1.0	nd	nd	nd	nd	nd	nd
Toluene	2.0	nd	nd	nd	nd	nd	nd
Ethylbenzene	1.0	nd	nd	nd	nd	nd	nd
Total Xylenes	2.0	nd	nd	nd	nd	nd	nd
Gasoline	100	nd	nd	nd	nd	nd	nd
Surrogate Recovery							
Dibromofluoromethane		102	101	97	95	96	97
1,2-Dichloroethane-d4		100	98	89	81	92	86
Toluene-d8		100	98	101	100	100	100
4-Bromofluorobenzene		92	90	94	92	93	91

"nd" Indicates not detected at listed detection limit.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 65% TO 135%

ANALYSES PERFORMED BY: Kodey Eley

Libby Environmental, Inc.

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NACHES PIT STOP PROJECT
AEG, LLC
Naches, Washington
Libby Project # L200511-1
Client Project # 16-102

Analyses of Gasoline (NWTPH-Gx) & BTEX (EPA Method 8260D) in Water

Sample Description		MW-6	MW-7	MW-8	MW-9	MW-10	MW-11
Date Sampled		5/8/2020	5/8/2020	5/8/2020	5/8/2020	5/8/2020	5/8/2020
Date Analyzed	PQL (µg/L)	5/14/2020 (µg/L)	5/14/2020 (µg/L)	5/14/2020 (µg/L)	5/14/2020 (µg/L)	5/14/2020 (µg/L)	5/13/2020 (µg/L)
Benzene	1.0	nd	nd	nd	nd	nd	nd
Toluene	2.0	nd	nd	nd	nd	nd	nd
Ethylbenzene	1.0	nd	2.7	nd	nd	nd	nd
Total Xylenes	2.0	nd	nd	nd	nd	nd	nd
Gasoline	100	nd	nd	nd	120	nd	nd
Surrogate Recovery							
Dibromofluoromethane		99	97	97	97	97	92
1,2-Dichloroethane-d4		94	87	94	89	87	79
Toluene-d8		100	99	101	100	101	100
4-Bromofluorobenzene		98	93	95	95	94	87

"nd" Indicates not detected at listed detection limit.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 65% TO 135%

ANALYSES PERFORMED BY: Kodey Eley

Libby Environmental, Inc.

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NACHES PIT STOP PROJECT
AEG, LLC
Naches, Washington
Libby Project # L200511-1
Client Project # 16-102

QA/QC for Gasoline (NWTPH-Gx) & BTEX (EPA Method 8260D) in Water

Matrix Spike Sample Identification: MW-11

	Spiked Conc. (µg/L)	MS Response (µg/L)	MSD Response (µg/L)	MS Recovery (%)	MSD Recovery (%)	RPD (%)	Limits Recovery (%)	Data Flag
Benzene	5.0	5.2	4.5	104	89	16.0	65-135	
Toluene	5.0	5.2	4.4	104	88	16.7	65-135	
Ethylbenzene	5.0	5.4	4.5	108	90	18.5	65-135	
Total Xylenes	15.0	15.8	12.7	105	85	21.5	65-135	

Surrogate Recovery (%)	MS	MSD	
Dibromofluoromethane	100	102	65-135
1,2-Dichloroethane-d4	89	92	65-135
Toluene-d8	109	112	65-135
4-Bromofluorobenzene	93	93	65-135

ACCEPTABLE RPD IS 35%

ANALYSES PERFORMED BY: Kodey Eley

Laboratory Control Sample

	Spiked Conc. (µg/L)	LCS Response (µg/L)	LCS Recovery (%)	LCS Recovery Limits (%)	Data Flag
Benzene	5.0	4.4	89	80-120	
Toluene	5.0	4.4	89	80-120	
Ethylbenzene	5.0	4.7	94	80-120	
Total Xylenes	15.0	13.8	92	80-120	

Surrogate Recovery		
Dibromofluoromethane	96	65-135
1,2-Dichloroethane-d4	95	65-135
Toluene-d8	103	65-135
4-Bromofluorobenzene	97	65-135

ANALYSES PERFORMED BY: Kodey Eley

Libby Environmental, Inc.

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Olympia, WA 98506
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Email: libbyenv@gmail.com

NACHES PIT STOP PROJECT
AEG, LLC
Naches, Washington
Libby Project # L200511-1
Client Project # 16-102

Analyses of Diesel & Oil (NWTPH-Dx/Dx Extended) in Water

Sample Number	Date Analyzed	Surrogate Recovery (%)	Diesel (µg/L)	Oil (µg/L)
Method Blank	5/13/2020	111	nd	nd
MW-1	5/13/2020	112	nd	nd
MW-2	5/13/2020	95	nd	nd
MW-4	5/13/2020	107	nd	nd
MW-5	5/13/2020	95	nd	nd
MW-6	5/13/2020	110	nd	nd
MW-7	5/13/2020	93	nd	nd
MW-8	5/13/2020	106	nd	nd
MW-9	5/13/2020	92	nd	nd
MW-10	5/13/2020	108	nd	nd
MW-11	5/13/2020	93	nd	nd
MW-11 Dup	5/13/2020	94	nd	nd
Practical Quantitation Limit			200	400

"nd" Indicates not detected at the listed detection limits.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (2-F Biphenyl): 65% TO 135%

ANALYSES PERFORMED BY: Kodey Eley

Libby Environmental, Inc.

3322 South Bay Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@gmail.com

NACHES PIT STOP PROJECT
AEG, LLC
Libby Project # L200511-1
Date Received 5/11/2020
Time Received 11:10 AM

Received By KE

Sample Receipt Checklist

Chain of Custody

1. Is the Chain of Custody complete?	☑ Yes	☐ No	
2. How was the sample delivered?	☑ Hand Delivered	☐ Picked Up	☐ Shipped

Log In

3. Cooler or Shipping Container is present.	☑ Yes	☐ No	☐ N/A
4. Cooler or Shipping Container is in good condition.	☑ Yes	☐ No	☐ N/A
5. Cooler or Shipping Container has Custody Seals present.	☐ Yes	☑ No	☐ N/A
6. Was an attempt made to cool the samples?	☑ Yes	☐ No	☐ N/A
7. Temperature of cooler (0°C to 8°C recommended)	0.1 °C		
8. Temperature of sample(s) (0°C to 8°C recommended)	4.2 °C		
9. Did all containers arrive in good condition (unbroken)?	☑ Yes	☐ No	
10. Is it clear what analyses were requested?	☑ Yes	☐ No	
11. Did container labels match Chain of Custody?	☑ Yes	☐ No	
12. Are matrices correctly identified on Chain of Custody?	☑ Yes	☐ No	
13. Are correct containers used for the analysis indicated?	☑ Yes	☐ No	
14. Is there sufficient sample volume for indicated analysis?	☑ Yes	☐ No	
15. Were all containers properly preserved per each analysis?	☑ Yes	☐ No	
16. Were VOA vials collected correctly (no headspace)?	☑ Yes	☐ No	☐ N/A
17. Were all holding times able to be met?	☑ Yes	☐ No	

Discrepancies/ Notes

18. Was client notified of all discrepancies? ☐ Yes ☐ No ☑ N/A

Person Notified: _____ Date: _____

By Whom: _____ Via: _____

Regarding: _____

19. Comments. _____

Libby Environmental, Inc.

Chain of Custody Record

www.LibbyEnvironmental.com

3322 South Bay Road NE
Olympia, WA 98506
Ph: 360-352-2110
Fax: 360-352-4154

Date: 5/8/20 Page: 1 of 1

Client: AEG

Project Manager: Scott Rose

Address: 605 11th Ave SE Suite 201

Project Name: Naches Pit Stop

City: Olympia State: WA Zip: 98501

Location: 10121 Hwy 12 City, State: Naches WA

Phone: (360) 352-2110 Fax:

Collector: Foster Koetzel Date of Collection: 5/8/20

Client Project # 16-102

Email: SRose@AEGWA.com

	Sample Number	Depth	Time	Sample Type	Container Type	VOC 8260	NWTPH-Gx	BTEX ~~8021~~ 8260	NWTPH-HCID	NWTPH-Dx	NWTPH-Dx/Dx	c PAH 8270	PAH 8270	Semi Vol 8270	PCB 8082	MTCA 5 Metals	RCRA 8 Metals			Field Notes
1	MW-1		0841	GW	VOA Amber		X	X			X									
2	MW-2		0918	GW	VOA, Amber		X	X			X									
3	MW-4		0953	GW	VOA, Amber		X	X			X									
4	MW-5		1309	GW	VOA, Amber		X	X			X									
5	MW-6		1057	GW	VOA, Amber		X	X			X									
6	MW-7		1334	GW	VOA, Amber		X	X			X									
7	MW-8		1023	GW	VOA, Amber		X	X			X									
8	MW-9		1208	GW	VOA, Amber		X	X			X									
9	MW-10		1236	GW	VOA, Amber		X	X			X									
10	MW-11		1128	GW	VOA, Amber		X	X			X									
11																				
12																				
13																				
14																				
15																				
16																				
17																				

Relinquished by:	Date / Time	Received by:	Date / Time
[signature]	5/8/20 1630	[signature]	5/8/20 1630
[signature]	5/11/20 1110	Kimberly Ellers	5/11/20 1110

Sample Receipt

Good Condition?	(Y) N
Cooler Temp.	0.1 °C
Sample Temp.	4.2 °C
Total Number of Containers	40

Remarks:

TAT: 24HR 48HR (5-DAY)

Distribution: White - Lab, Yellow - File, Pink - Originator

A1 Soil Cleanup Levels: Worksheet for Soil Data Entry: Refer to WAC 173-340-720, 740,745, 747, 750

1. Enter Site Information

Date: 04/17/20
Site Name: Naches Pit Stop
Sample Name: B6-15

2. Enter Soil Concentration Measured

Chemical of Concern or Equivalent Carbon Group	Measured Soil Conc dry basis mg/kg	Composition Ratio %
Petroleum EC Fraction		
AL_EC >5-6	0.915	0.05%
AL_EC >6-8	114	5.98%
AL_EC >8-10	78.7	4.13%
AL_EC >10-12	0.785	0.04%
AL_EC >12-16	275	14.43%
AL_EC >16-21	265	13.90%
AL_EC >21-34	49.5	2.60%
AR_EC >8-10	102.5	5.38%
AR_EC >10-12	680	35.68%
AR_EC >12-16	94.2	4.94%
AR_EC >16-21	212	11.12%
AR_EC >21-34	33.3	1.75%
Benzene	0.01	0.00%
Toluene	0.05	0.00%
Ethylbenzene	0	0.00%
Total Xylenes	0	0.00%
Naphthalene	0	0.00%
1-Methyl Naphthalene	0	0.00%
2-Methyl Naphthalene	0	0.00%
n-Hexane	0	0.00%
MTBE	0	0.00%
Ethylene Dibromide (EDB)	0	0.00%
1,2 Dichloroethane (EDC)	0	0.00%
Benzo(a)anthracene	0	0.00%
Benzo(b)fluoranthene	0	0.00%
Benzo(k)fluoranthene	0	0.00%
Benzo(a)pyrene	0	0.00%
Chrysene	0	0.00%
Dibenz(a,h)anthracene	0	0.00%
Indeno(1,2,3-cd)pyrene	0	0.00%
Sum	1905.96	100.00%

Notes for Data Entry | Set Default Hydrogeology

Clear All Soil Concentration Data Entry Cells

Restore All Soil Concentration Data cleared previously

REMARK:
Enter site-specific information here.....

3. Enter Site-Specific Hydrogeological Data

Total soil porosity:	0.43	Unitless
Volumetric water content:	0.3	Unitless
Volumetric air content:	0.13	Unitless
Soil bulk density measured:	1.5	kg/L
Fraction Organic Carbon:	0.001	Unitless
Dilution Factor:	20	Unitless

4. Target TPH Ground Water Concentation (if adjusted)

If you adjusted the target TPH ground water concentration, enter adjusted value here:	800	ug/L

A2 Soil Cleanup Levels: Calculation and Summary of Results. Refer to WAC 173-340-720, 740, 745, 747, 750

Site Information

Date: 4/17/2020
Site Name: Naches Pit Stop
Sample Name: B6-15
Measured Soil TPH Concentration, mg/kg: **1,905.960**

1. Summary of Calculation Results

Exposure Pathway	Method/Goal	Protective Soil TPH Conc, mg/kg	With Measured Soil Conc		Does Measured Soil Conc Pass or Fail?
			RISK @	HI @	
Protection of Soil Direct Contact: Human Health	Method B	2,230	5.51E-10	8.55E-01	Pass
	Method C	34,901	7.37E-11	5.46E-02	Pass
Protection of Method B Ground Water Quality (Leaching)	Potable GW: Human Health Protectior	0	2.24E-06	8.40E+01	Fail
	Target TPH GW Conc. @ 800 ug/L	10,000	NA	NA	Fail

Warning! Check to determine if a simplified or site-specific Terrestrial Ecological Evaluation may be required (Refer to WAC 173-340-7490 through ~7494).

Warning! Check Residual Saturation (WAC340-747(10)).

2. Results for Protection of Soil Direct Contact Pathway: Human Health

	Method B: Unrestricted Land Use	Method C: Industrial Land Use
Protective Soil Concentration, TPH mg/kg	**2,230.07**	**34,901.31**
Most Stringent Criterion	**HI =1**	**HI =1**

Soil Criteria	Protective Soil Concentration @Method B				Protective Soil Concentration @Method C			
	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @
HI =1	YES	2.23E+03	6.44E-10	1.00E+00	YES	3.49E+04	1.35E-09	1.00E+00
Total Risk=1E-5	*NO*	3.46E+07	1.00E-05	1.55E+04	*NO*	2.59E+08	1.00E-05	7.41E+03
Risk of Benzene= 1E-6	*NO*	3.46E+06	1.00E-06	1.55E+03	NA			
Risk of cPAHs mixture= 1E-6	NA	NA	NA	NA				
EDB	NA	NA	NA	NA				
EDC	NA	NA	NA	NA				

3. Results for Protection of Ground Water Quality (Leaching Pathway)

3.1. Protection of Potable Ground Water Quality (Method B): Human Health Protection

Most Stringent Criterion	**#N/A**
Protective Ground Water Concentration, ug/L	**0.00**
Protective Soil Concentration, mg/kg	**0.00**

Ground Water Criteria	Protective Potable Ground Water Concentration @Method B				Protective Soil Conc, mg/kg
	Most Stringent?	TPH Conc, ug/L	RISK @	HI @	
HI=1	*NO*	7.08E+04	1.15E-05	3.43E+02	1.00E+04
Total Risk = 1E-5	*NO*	8.10E+02	1.14E-06	3.69E+00	100% NAPL
Total Risk = 1E-6	*NO*	7.08E+04	1.15E-05	3.43E+02	1.00E+04
Risk of cPAHs mixture= 1E-5	NA	NA	NA	NA	NA
Benzene MCL = 5 ug/L	*NO*	8.10E+02	1.14E-06	3.69E+00	100% NAPL
MTBE = 20 ug/L	NA	NA	NA	NA	NA

3.2 Protection of Ground Water Quality for TPH Ground Water Concentration previously adjusted and entered

Ground Water Criteria	Protective Ground Water Concentration			Protective Soil Conc, mg/kg
	TPH Conc, ug/L	Risk @	HI @	
Target TPH GW Conc = 800 ug/L	7.08E+04	1.15E-05	3.43E+02	**1.00E+04**