November 19, 2024

Mr. Roger Wilson
Wilson Real Estate
222 S 1st St.
Yakima, Washington 98901
roger@wilsonrm.com

RE: **Technical Memorandum – Confirmation Soil Sampling**
Starbucks Diesel Release
2013 East 1st Street
Port Angeles, Washington 98362
AEG Atlas Project # 24-155
VCP ID No. SW1835

Dear Mr. Wilson,

AEG Atlas, LLC (AEG) has prepared this Technical Memorandum for the purpose of presenting a summary of confirmation soil sampling event at the *Starbucks Diesel Release* property, located at the above-referenced address in Port Angeles, Clallam County, Washington (Site). The sampling event was performed to resolve data gaps outlined in a Washington State Department of Ecology (Ecology) No Further Action (NFA) Likely opinion letter, dated August 23, 2024. Figure 1, *Subject Property Vicinity Map*, presents the general vicinity of the Site. The Site's current layout and sample locations are illustrated in Figure 2, *Site Plan*, and Figure 3, *Excavation and Building Location Map*.

BACKGROUND

According to an Atlas Geosciences NW *Summary of Previous Environmental Assessments* report, dated June 21, 2024, an approximately 900-gallon abandoned heating oil underground storage tank (UST) was encountered during property redevelopment activities in October 2022 and removed from the Site. Confirmation soil samples were collected from the north and south sides of the UST and submitted for laboratory analysis to confirm impacts to soil. Analytical results of these soil samples indicated concentrations of total petroleum hydrocarbons (TPH), and associated volatile organic compounds (VOCs) in excess of their respective Model Toxics Control Act (MTCA) Method A cleanup levels.

A subsequent petroleum-contaminated soil (PCS) excavation occurred on November 15, 2022 expanding the original UST excavation vertically and to the east. Confirmation soil samples were collected from the southern sidewall and base of the excavation and submitted for laboratory analysis, the results of which indicated the presence of gasoline-range TPH, benzene, ethylbenzene, and xylenes at concentrations exceeding their respective MTCA Method A cleanup levels in selected

samples. The excavation was expanded further to remove additional PCS, and confirmation soil samples were collected from the sidewalls and base of the excavation. Analytical results of the confirmation soil samples indicated no detectable concentrations of gasoline-range TPH, benzene, toluene, ethylbenzene, and xylenes (BTEX). A total of 381.88 tons of PCS was reportedly excavated and transported off Site for disposal.

On August 23, 2024, Ecology issued an opinion letter for the Site indicating that an NFA is likely pending the following actions:

1. "*Given diesel was detected in the initial soil boring samples from each end of the UST, diesel should have been analyzed in the final soil confirmation sample suite. Although Ecology concurs that diesel did occur below the MTCA Method A CUL in said samples, contaminant distribution is also often anisotropic in soil as a heterogeneous medium and as such, may migrate as high concentrations based on stratigraphic irregularities. Please incorporate TPH-D and associated Table 830-1 analytes in the additional soil borings recommended below.*"
2. "*Please conduct additional soil boring at and north of former soil borings SL-02 and SL-04 to delineate TPH-G, BTEX, and missing Table 830-1 analytes in that direction. Soil boring samples should be collected at depths of 5, 10, and 15 feet bgs. Based on the analytical results, additional excavation should be performed if the results are above the MTCA Method A CULs*

   Specific to future soil boring/sampling and given the Site has been redeveloped with a different grade, please specify the surface datum that will be used and how that will be correlated with the prior SL-02 and SL-04 sample depths…"
3. "*Please expand reporting of the existing October 2022 VPH results from SL-02 and SL-03 to include EDB/EDC.*"

In response to Ecology's opinion letter, AEG submitted a Work Plan, dated October 1, 2024, to Ecology for review. The Work Plan outlined AEG's plans for addressing the above-noted comments. Ecology subsequently approved the Work Plan, but requested a third boring be advanced at the former soil boring location SL-4 (not to be confused with boring location SL-04), which exhibited gasoline-range TPH above the MTCA cleanup level.

SITE INVESTIGATION

On November 8, 2024, AEG mobilized to the Site to advance three soil borings (B-1 through B-3) using a direct-push drill rig operated by Holocene Drilling. The three soil borings were advanced to a total depth of 20 feet below ground surface (bgs) to evaluate potential residual TPH impacts to soil. AEG collected soil samples from the soil cores at 5-foot intervals. Each sample core was screened for volatiles using a photoionization detector (PID). No elevated PID readings were measured in any

of the sample cores. Also, no visual or olfactory evidence of contamination was noted by AEG field staff in any of the borings to the total depth explored of 20 feet bgs. The locations of the soil borings are illustrated on Figure 2, *Site Plan*, and Figure 3, *Excavation and Building Location Map.* Soil boring logs are presented in Appendix A, *Soil Boring Logs.*

Soil samples from the 5-, 10-, and 15-foot intervals of each of the three borings were submitted to a Washington State-Accredited analytical laboratory for the analysis of the following:

- Gasoline-range TPH using Northwest Method NWTPH-Gx
- Diesel- and oil-range TPH using Northwest Method NWTPH-Dx/Dx-extended
- MTCA VOCs, including BTEX, 1,2-dibromoethane (EDB), 1,2-dichloroethane (EDC), methyl tert-butyl ether (MTBE), and naphthalenes using EPA Method 8260.

Analytical results of the soil samples indicated the constituents analyzed were either not detected at the laboratory method reporting limits, or were detected at concentrations below MTCA cleanup levels. The soil analytical results are presented in Table 1, *Summary of Soil Analytical Results.* The laboratory analytical report is presented in Appendix B, *Laboratory Analytical Report*.

CONCLUSIONS AND RECOMMENDATIONS

An abandoned heating oil tank was discovered at the Site during redevelopment activities. An excavation was conducted in November 2022 to remove the tank and any associated PCS, and a report submitted to Ecology for consideration of Site closure. Upon review, Ecology determined the confirmation soil sampling from the excavation was insufficient to demonstrate all PCS had been successfully removed.

AEG was retained to resolve Ecology's comments, and mobilized to the Site to advance three soil borings to depths of 20 feet bgs in areas where PCS was previously documented. Analytical results of the soil samples indicated the constituents analyzed were either not detected at the laboratory method reporting limits, or were detected at concentrations below MTCA cleanup levels.

It should be noted that Ecology's opinion letter also indicated a request to specify the surface datum that will be used and how that will correlate to the prior SL-2 and SL-04 sample depths. In response to this comment, please note the Site has already been redeveloped into a commercial center that includes a Starbucks and Chipotle restaurant with a new asphalt-paved parking lot. Given this current layout, the new ground surface (asphalt parking lot) is the ground surface at the Site for the foreseeable future, and is the datum the soil sample depths correspond to in this report. The point of compliance of 15 feet bgs is measured from this surface. While it is unclear from previous reports exactly at what depths the previous samples were collected, AEG advanced all three borings up to 20 feet bgs to account for any increases in elevation of the Site surface during redevelopment. As

previously stated, no elevated PID readings were measured in any of the sample cores, and no visual or olfactory evidence of contamination was noted by AEG field staff in any of the borings to the total depth explored of 20 feet bgs. Per AEG's Ecology-approved Work Plan, soil samples collected from each boring at 5, 10, and 15 feet bgs were submitted for laboratory analysis. All results were either non-detect or below MTCA cleanup levels.

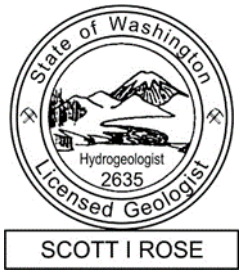
AEG recommends submitting this report to Ecology in consideration of a NFA determination for the Site.

If you have comments or questions, please contact our office at your convenience at 360.352.9835.

Sincerely,

AEG Atlas, LLC

Scott Rose, L.H.G.
Director of Technical Services



Attachments:

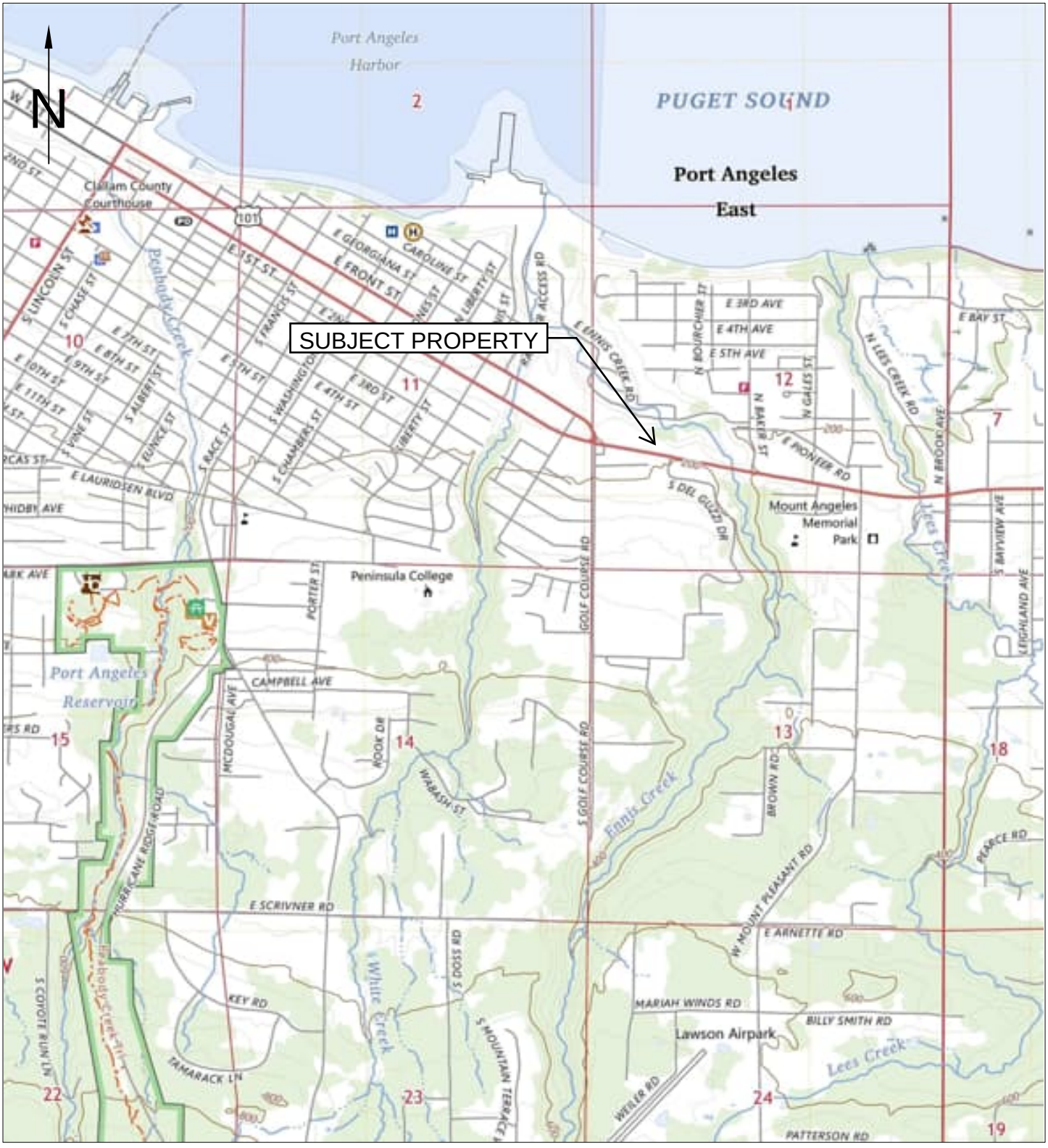
Figure 1 – *Subject Property Vicinity Map, Atlas GeoSciences NW*
Figure 2 – *Site Plan, Krazan & Associates (modified by AEG)*
Figure 3 – *Excavation and Building Location Map, Zenovic & Associates (modified by AEG)*

Table 1 – *Summary of Soil Analytical Results*

Appendix A: *Soil Boring Logs*
Appendix B: *Laboratory Analytical Report*

FIGURES

2633 Parkmont Lane SW, Suite A • Olympia, WA • 98502-5751
Phone: 360-352-9835 • Fax: 360-352-8164 • Email: admin@aegwa.com



BASEMAP TAKEN FROM THE PORT ANGELES QUADRANGLE, WASHINGTON 7.5-MINUTE SERIES, 2023

0 475 950 1900
FEET

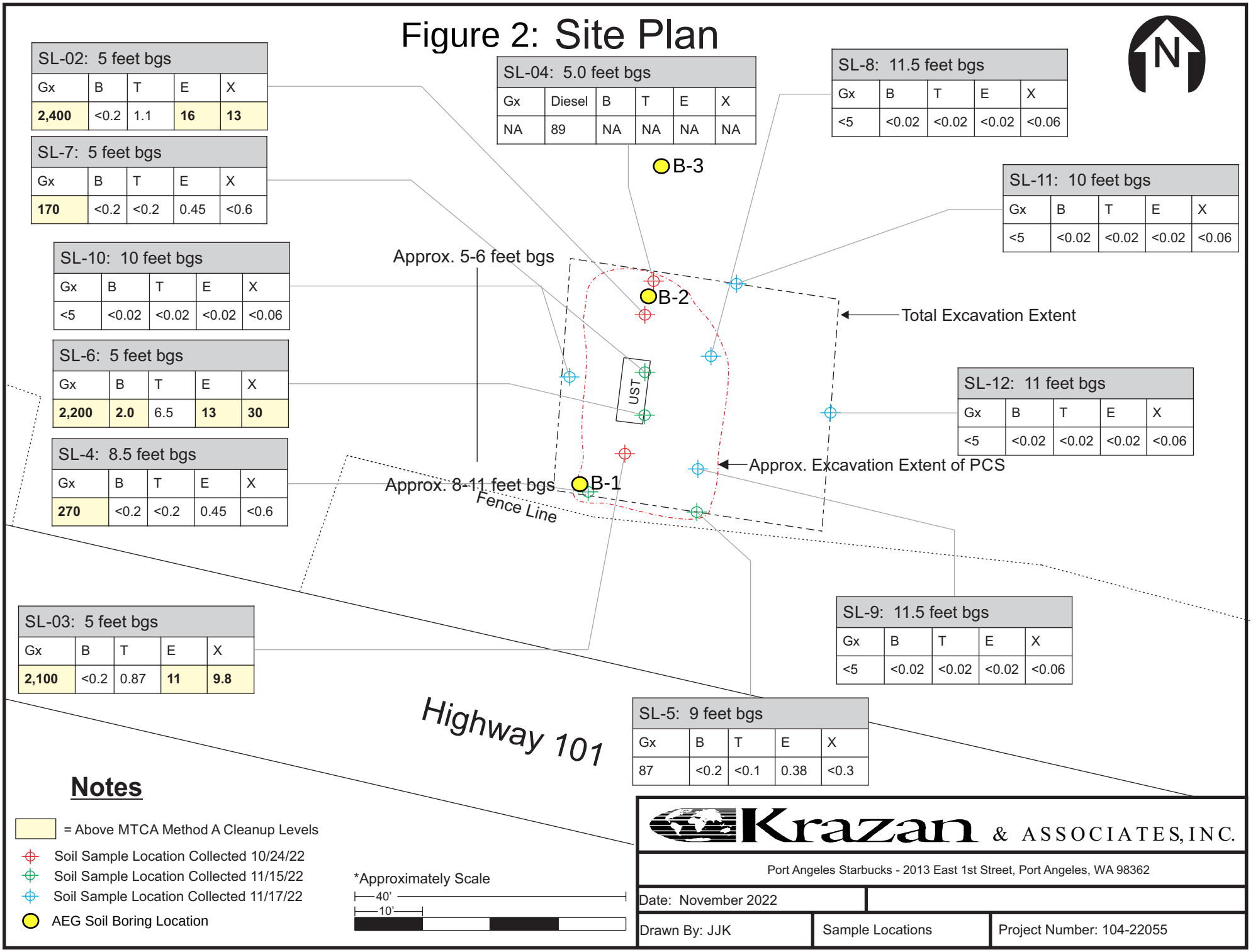
ATLAS GEOSCIENCES NW
P.O. BOX 1009
SUMNER, WA 98390

DRAWN BY:	HVS
PROJ. NO:	02-0191-B
DATE:	JUNE 2024
APPROX SCALE:	SEE ABOVE
PRJ MGR:	EAR

SUBJECT PROPERTY VICINITY MAP | FIGURE 1

PORT ANGELES STARBUCKS
2013 EAST 1ST STREET
PORT ANGELES, WASHINGTON

Figure 2: Site Plan



Notes

= Above MTCA Method A Cleanup Levels

Soil Sample Location Collected 10/24/22

Soil Sample Location Collected 11/15/22

Soil Sample Location Collected 11/17/22

AEG Soil Boring Location

*Approximately Scale

40'

10'

Krazan & ASSOCIATES, INC.

Port Angeles Starbucks - 2013 East 1st Street, Port Angeles, WA 98362

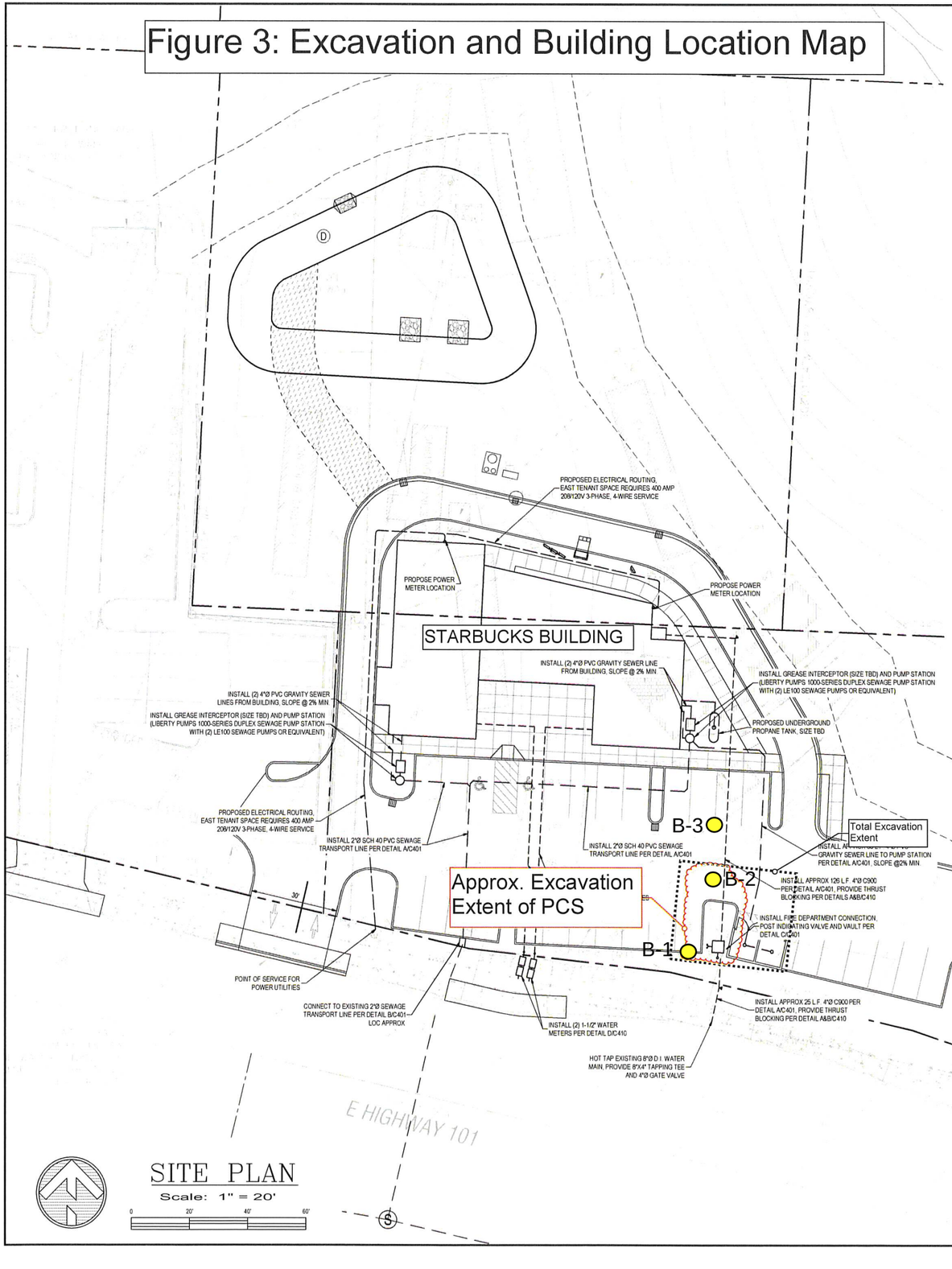
Date: November 2022

Drawn By: JJK

Sample Locations

Project Number: 104-22055

Figure 3: Excavation and Building Location Map



SITE PLAN

Scale: 1" = 20'

0 20' 40' 60'

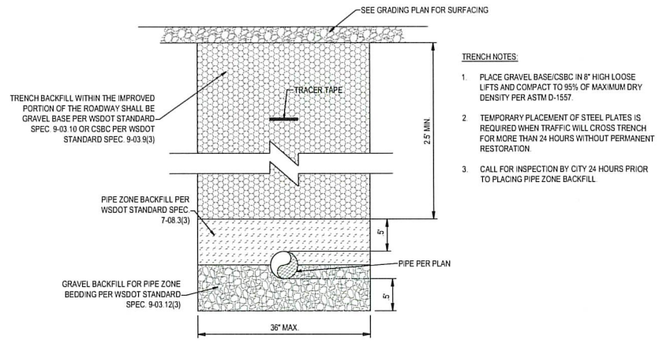
LEGEND (UNLESS OTHERWISE NOTED)

TESC/DEMOLITION
- SILT FENCE
- SAW CUT LINE
- CONSTRUCTION ENTRANCE

PAVING & GRADING
- PROPERTY LINE
- 5' PROPOSED CONTOUR
- 1' PROPOSED CONTOUR
- 5' EXISTING CONTOUR
- EDGE OF EXISTING ASPHALT
- PROPOSED EDGE OF CURB
- PARKING LOT MARKINGS
- EDGE OF EXISTING SIDEWALK
- HIGHWAY 101 PARKINGS
- EDGE OF EXISTING GRAVEL
- TOP OF BLUFF
- BLUFF BUILDING SETBACK
- PROPOSED BUILDING FOOTPRINT
- PROPERTY EASEMENT
- PROPOSED CONCRETE
- PROPOSED ASPHALT

STORM
- EXISTING STORM PIPE
- EXISTING CATCH BASIN
- PROPOSED STORM PIPE
- PROPOSED TY. 1 CATCH BASIN

UTILITIES
- PROPOSED SANITARY SEWER LINE
- PROPOSED WATER LINE
- UGP — PROPOSED POWER SERVICE LINE
- SAN — EXISTING SANITARY SEWER LINE
- WTR — WTR — EXISTING WATER LINE
- UGP — EXISTING UNDERGROUND POWER LINE
- WTR — WTR — PROPOSED WATER SERVICE
- —T— — EXISTING UNDERGROUND TELEPHONE LINE
- OHP — EXISTING OVERHEAD POWER LINE
- PROPOSED WATER SERVICE
- T — EXISTING TRANSFORMER VAULT
- EXISTING UTILITY POLE
- AEG SOIL BORING LOCATION

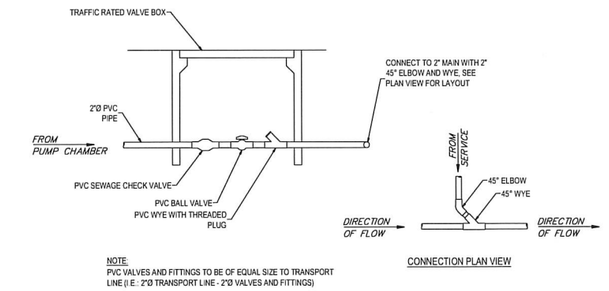


TRENCH NOTES:
1. PLACE GRAVEL BASE/CSBC IN 8" HIGH LOOSE LIFTS AND COMPACT TO 95% OF MAXIMUM DRY DENSITY PER ASTM D-1557.
2. TEMPORARY PLACEMENT OF STEEL PLATES IS REQUIRED WHEN TRAFFIC WILL CROSS TRENCH FOR MORE THAN 24 HOURS WITHOUT PERMANENT RESTORATION.
3. CALL FOR INSPECTION BY CITY 24 HOURS PRIOR TO PLACING PIPE ZONE BACKFILL

ALL WORK AND MATERIAL TO BE IN ACCORDANCE WITH THE CURRENT WASHINGTON STATE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD, "STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION"

A / C401 UTILITIY TRENCH IN ROADWAY

Scale: N.T.S.

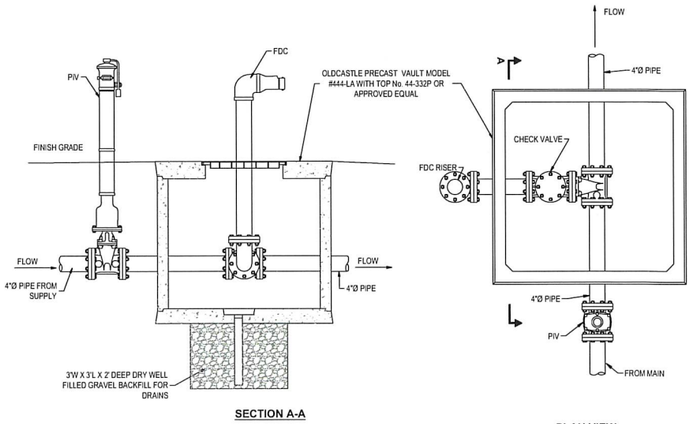


NOTE:
PVC VALVES AND FITTINGS TO BE OF EQUAL SIZE TO TRANSPORT LINE (I.E.: 2"Ø TRANSPORT LINE - 2"Ø VALVES AND FITTINGS)

CONNECTION PLAN VIEW

B / C401 PRESSURE SEWER CONNECTION

Scale: NTS



C / C401 PIV/FDC LAYOUT

Scale: NTS

ZENOVIC & ASSOCIATES
INCORPORATED
301 E. 68TH STREET, SUITE 1
PORT ANGELES, WA 98362
PHONE: (360) 417-0501
FAX: (360) 417-0514
EMAIL: ZENOVIC@ZENOVIC.NET

REVISIONS:

DATE	MARK	NOTE

UTILITY PLANS

TITLE: SITE PLAN FOR KIDDER MATTHEWS, CITY OF PORT ANGELES WASHINGTON - PARCEL NO. 06-30-12-004000, & 0436

CLIENT: KIDDER MATTHEWS
1201 PACIFIC AVENUE, SUITE 1400
TACOMA, WASHINGTON 98402

SCALE: 1" = 20'

FILE: 20247 - E8

JOB NO: 20247

DATE: July 19, 2022

SET: PERMIT

SETH J. RODMAN
STATE OF WASHINGTON
53777
REGISTERED
PROFESSIONAL ENGINEER
7/19/2022

SHEET C401

TABLES

2633 Parkmont Lane SW, Suite A • Olympia, WA • 98502-5751
Phone: 360-352-9835 • Fax: 360-352-8164 • Email: admin@aegwa.com

Table 1 - Summary of Soil Analytical Results
Starbucks Diesel Release (24-155)
Port Angeles, Washington

Sample Number	Depth Collected (feet)	Date Collected	Total Petroleum Hydrocarbons (TPH)			Volatile Organic Compounds (VOCs)									
			Gasoline	Diesel	Oil	Benzene	Toluene	Ethyl-benzene	Xylene	EDB	EDC	MTBE	Naphthalene	1-Methyl-naphthalene	2-Methyl-naphthalene
B-1-5	5	11/8/2024	< 7.3	< 55	< 270	< 0.015	< 0.073	< 0.036	< 0.11	< 0.0018	< 0.022	< 0.036	< 0.073	< 0.29	< 0.29
B-1-10	10	11/8/2024	< 6.7	< 59	< 300	< 0.013	< 0.067	< 0.033	< 0.10	< 0.0017	< 0.020	< 0.033	< 0.067	< 0.27	< 0.27
B-1-15	15	11/8/2024	< 6.0	< 57	< 280	< 0.012	< 0.060	< 0.030	< 0.090	< 0.0015	< 0.018	< 0.030	< 0.060	< 0.24	< 0.24
B-2-5	5	11/8/2024	< 5.1	< 54	< 270	< 0.010	< 0.051	< 0.025	< 0.076	< 0.0013	< 0.015	< 0.025	< 0.051	< 0.20	< 0.20
B-2-10	10	11/8/2024	< 6.6	< 58	< 290	< 0.013	< 0.066	< 0.033	< 0.099	< 0.0016	< 0.020	< 0.033	< 0.066	< 0.26	< 0.26
B-2-15	15	11/8/2024	< 5.7	< 56	< 280	**0.012**	< 0.057	< 0.028	< 0.085	< 0.0014	< 0.017	< 0.028	< 0.057	< 0.23	< 0.23
B-3-5	5	11/8/2024	< 5.9	< 53	< 270	< 0.012	< 0.059	< 0.029	< 0.088	< 0.0015	< 0.018	< 0.029	< 0.059	< 0.24	< 0.24
B-3-10	10	11/8/2024	< 4.6	< 55	< 280	< 0.0091	< 0.016	< 0.023	< 0.069	< 0.0011	< 0.014	< 0.023	< 0.046	< 0.18	< 0.18
B-3-15	15	11/8/2024	< 6.5	< 58	< 290	< 0.013	< 0.065	< 0.033	< 0.098	< 0.0016	< 0.020	< 0.033	< 0.065	< 0.26	< 0.26
MTCA Method A Cleanup Levels			100	2,000		0.03	7	6	9	0.005	11 (1) (2)	0.1	5	320 (1)	34 (1) (2)

Notes:
All results are presented in milligrams per kilogram (mg/kg)
-- = Not analyzed for this constituent.
< = Not detected at the listed laboratory detection limits
Red Bold indicates the detected concentration exceeds MTCA Method A cleanup level
Bold indicates the detected concentration is below MTCA Method A cleanup levels
(1) Method B cleanup level; no Method A cleanup level has been promulgated for this constituent
(2) Method B cancer cleanup level

EDC = 1,2-Dichloroethane
EDB = 1,2-Dibromoethane
MTBE = Methyl tert-Butyl Ether

APPENDIX A

Soil Boring Logs

2633 Parkmont Lane SW, Suite A • Olympia, WA • 98502-5751
Phone: 360-352-9835 • Fax: 360-352-8164 • Email: admin@aegwa.com

AEG Atlas, LLC **LOG OF BOREHOLE**

Project Name:	*Starbucks Diesel Release*	**PN:** *24-155*	**Boring ID:** ***B-1***	**PAGE 1 of 1**	
Site Address:	*2013 E 1st St, Port Angeles, WA*	**Approximate elevation:**			
Subcontractor:	*Holocene Drilling*	**Equipment / Drilling Method:**	*Geoprobe 6011 DT*		
Date of Drilling:	*11/08/20204*	**Logged by:**	*Paul Hitch*		

Boring Depth (feet)	Soil Description	Unified Soil Symbol	Sample Type	Recovery (%)	Sample Name	Time	PID (PPM)	Sheen	Comments
	Asphalt surface underlain with crushed rock (fill)	F							
5			S	100%	B-1-5	9:20	0.1	NS	
7	Brown silty sand, fine, well sorted sand, moist	SM							
10			S	100%	B-1-10	9:30	0.1	NS	
13									
	Gray silt, very stiff, dry	ML							
15			S	100%	B-1-15	9:40	0.0	NS	
20			S	100%	B-1-20	9:50	0.0	NS	
	Total depth of borehole = 20 ft bgs								
	Borehole backfilled with hydrated bentonite and surface patched with asphalt.								
25									
30									

Explanation

- Soil sample interval
- No Recovery
- Contact located approximately
- ATD — Groundwater level at time of drilling or date of measurement

AEG Atlas, LLC **LOG OF BOREHOLE**

Project Name:	*Starbucks Diesel Release*	**PN:** *24-155*	**Boring ID:** ***B-2***	**PAGE 1 of 1**	
Site Address:	*2013 E 1st St, Port Angeles, WA*	**Approximate elevation:**			
Subcontractor:	*Holocene Drilling*	**Equipment / Drilling Method:**	*Geoprobe 6011 DT*		
Date of Drilling:	*11/08/20204*	**Logged by:**	*Paul Hitch*		

Boring Depth (feet)	Soil Description	Unified Soil Symbol	Sample Type	Recovery (%)	Sample Name	Time	PID (PPM)	Sheen	Comments
	Asphalt underlain by crushed rock (fill)	F							
5			S	100%	B-2-5	10:00	0.0	NS	
7	Brown silty sand, fine, well sorted sand, moist	SM							
10			S	100%	B-2-10	10:05	0.0	NS	
13	Gray silt, very stiff, dry	ML							
15			S	100%	B-2-15	10:10	0.0	NS	
20			S	100%	B-2-20	10:20	0.0	NS	
	Total depth of borehole = 20 ft bgs Borehole backfilled with hydrated bentonite and surface patched with asphalt.								
25									
30									

Explanation

- Soil sample interval
- No Recovery
- Contact located approximately
- ATD — Groundwater level at time of drilling or date of measurement

AEG Atlas, LLC **LOG OF BOREHOLE**

Project Name:	*Starbucks Diesel Release*	**PN:** *24-155*	**Boring ID:** *B-3*	**PAGE 1 of 1**	
Site Address:	*2013 E 1st St, Port Angeles, WA*	**Approximate elevation:**			
Subcontractor:	*Holocene Drilling*	**Equipment / Drilling Method:**	*Geoprobe 6011 DT*		
Date of Drilling:	*11/08/20204*	**Logged by:**	*Paul Hitch*		

Boring Depth (feet)	Soil Description	Unified Soil Symbol	Sample Type	Recovery (%)	Sample Name	Time	PID (PPM)	Sheen	Comments
	Asphalt underlain by crushed rock (fill)	F							
5			S	100%	B-3-5	11:05	0.1	NS	
7									
	Brown silty sand, fine, well sorted sand, moist	SM							
10			S	100%	B-3-10	11:10	0.1	NS	
12									
	Gray silt, very stiff, dry	ML							
15			S	100%	B-3-15	11:15	0.0	NS	
	Gray silty sand, poorly sorted, moderately dense, moist	SM							
20			S	100%	B-3-20	11:20	0.1	NS	
	Total depth of borehole = 20 ft bgs Borehole backfilled with hydrated bentonite chips and surface patched with asphalt.								
25									
30									

Explanation

- Soil sample interval
- No Recovery
- Contact located approximately
- ATD — Groundwater level at time of drilling or date of measurement

APPENDIX B

Laboratory Analytical Report

2633 Parkmont Lane SW, Suite A • Olympia, WA • 98502-5751
Phone: 360-352-9835 • Fax: 360-352-8164 • Email: admin@aegwa.com

Libby Environmental, Inc.

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

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

November 15, 2024

Scott Rose
AEG an Atlas Geosciences NW Company
2633 Parkmont Lane SW, Suite A
Olympia, WA 98502

RE: Starbucks Port Angeles
Work Order Number: L24K047

Enclosed are the results of analyses for samples received by our laboratory on 11/8/2024.

Applicable detection limits and QA/QC data are included. The sample(s) will be disposed of within 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 feel free to contact us. It was a pleasure working with you on this project, and we are looking forward to the next opportunity to work together.

Sincerely,

Sherry Chilcutt
Senior Chemist

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.c

Date: 11/08/2024 Page: 1 of 1

Client: AEG Atlas
Project Manager: Scott Rose
Address: 2633 Parkmont Ln SW, Ste A
Project Name: Starbucks Port Angeles
City: Olympia State: WA Zip: 98502
Location: 2013 E 1st St. City, State: Port Angeles, WA
Phone: 360-352-9835 Fax: —
Collector: Paul Hitch Date of Collection: 11/08/2024
Client Project # 24-155
Email: SROSE@AEGWA.COM

	Sample Number	Depth	Time	Sample Type	Container Type	VOC 8260	PCE & Daughter Prod.	NWTPH-Gx	BTEX (8260) / (8021)	NWTPH-HCID	NWTPH-Dx / Dx	PCB 8082	MTCA 5 Metals	RCRA 8 Metals	c PAH 8270	PAH 8270	Semi Vol 8270	MTCA VOCs		Field Notes
1	B-1-5	5	09:20	Soil	1J, 2V			X			X						X			
2	B-1-10	10	09:30					X			X						X			
3	B-1-15	15	09:40					X			X						X			
4	B-1-20	20	09:50																	Hold
5	B-2-5	5	10:00					X			X						X			
6	B-2-10	10	10:05					X			X						X			
7	B-2-15	15	10:10					X			X						X			
8	B-2-20	20	10:20																	Hold
9	B-3-5	5	11:05					X			X						X			
10	B-3-10	10	11:10					X			X						X			
11	B-3-15	15	11:15					X			X						X			
12	B-3-20	20	11:20																	Hold
13																				
14																				
15																				
16																				
17																				

Relinquished by:	Date / Time	Received by:	Date / Time
Paul Hitch	11/08/24 (14:47)	[signature]	11.8.24 1447
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:

TAT: 1-Day 2-Day 5-DAY

LEGAL ACTION CLAUSE: *In the event of default of payment and/or failure to pay, Client agrees to pay the costs of collection including court costs and reasonable attorney fees to be determined by a court of law.*

Distribution: White - Lab, Yellow - Originator

Libby Environmental, Inc.

AEG an Atlas Geosciences NW Company	**Project:** Starbucks Port Angeles	**City/State:** Port Angeles, WA
2633 Parkmont Lane SW, Suite A	**Project Number:** 24-155	**Work Order:** L24K047
Olympia, WA 98502	**Project Manager:** Scott Rose	**Reported:** 11/15/2024 13:43

Notes and Definitions

Item	Definition
S4	Outlying surrogate recovery(ies) observed.
RL	Reporting Limit
ND	Analyte NOT DETECTED at or above the reporting limit
DET	Analyte DETECTED at or above the reporting limit
Qual	Qualifier
	All results reported on an "as received" basis unless indicated by "Dry"
RPD	Relative Percent Difference
%REC	Percent Recovery
Parent	Sample that was matrix spiked or duplicated

Work Order Sample Summary

Lab ID	Sample	Matrix	Date Sampled	Date Received
L24K047-01	B-1-5	Soil	11/08/2024	11/08/2024
L24K047-02	B-1-10	Soil	11/08/2024	11/08/2024
L24K047-03	B-1-15	Soil	11/08/2024	11/08/2024
L24K047-04	B-1-20	Soil	11/08/2024	11/08/2024
L24K047-05	B-2-5	Soil	11/08/2024	11/08/2024
L24K047-06	B-2-10	Soil	11/08/2024	11/08/2024
L24K047-07	B-2-15	Soil	11/08/2024	11/08/2024
L24K047-08	B-2-20	Soil	11/08/2024	11/08/2024
L24K047-09	B-3-5	Soil	11/08/2024	11/08/2024
L24K047-10	B-3-10	Soil	11/08/2024	11/08/2024
L24K047-11	B-3-15	Soil	11/08/2024	11/08/2024
L24K047-12	B-3-20	Soil	11/08/2024	11/08/2024

Libby Environmental, Inc.

AEG an Atlas Geosciences NW Company	**Project:** Starbucks Port Angeles	**City/State:** Port Angeles, WA
2633 Parkmont Lane SW, Suite A	**Project Number:** 24-155	**Work Order:** L24K047
Olympia, WA 98502	**Project Manager:** Scott Rose	**Reported:** 11/15/2024 13:43

Libby Environmental Sample Detection Summary

Analyte	Result	Qual	Units	RL	Method
Sample: **B-2-15**			Lab#: L24K047-07		
Benzene	0.012		mg/kg dry	0.011	8260D

Note: If no entry is made, then no target compounds were detected.

AEG an Atlas Geosciences NW Company
2633 Parkmont Lane SW, Suite A
Olympia, WA 98502

Project: Starbucks Port Angeles
Project Number: 24-155
Project Manager: Scott Rose

City/State: Port Angeles, WA
Work Order: L24K047
Reported: 11/15/2024 13:43

Sample Results

Client Sample ID: B-1-5

Lab ID: L24K047-01 (Soil)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
Volatile Organic Compounds by EPA Method 8260D						
Methyl tert-Butyl Ether (MTBE)	ND		0.036	mg/kg dry	11/13/2024	ES
Benzene	ND		0.015	mg/kg dry	11/13/2024	ES
1,2-Dichloroethane (EDC)	ND		0.022	mg/kg dry	11/13/2024	ES
Toluene	ND		0.073	mg/kg dry	11/13/2024	ES
1,2-Dibromoethane (EDB) (SIM)	ND		0.0018	mg/kg dry	11/13/2024	ES
Ethylbenzene	ND		0.036	mg/kg dry	11/13/2024	ES
Total Xylenes	ND		0.11	mg/kg dry	11/13/2024	ES
Naphthalene	ND		0.073	mg/kg dry	11/13/2024	ES
2-Methylnaphthalene	ND		0.29	mg/kg dry	11/13/2024	ES
1-Methylnaphthalene	ND		0.29	mg/kg dry	11/13/2024	ES
Surrogate: Dibromofluoromethane	*118%*		*49.6-175*		*11/13/2024*	*ES*
Surrogate: 1,2-Dichloroethane-d4	*105%*		*31.7-194*		*11/13/2024*	*ES*
Surrogate: Toluene-d8	*99.6%*		*52.9-135*		*11/13/2024*	*ES*
Surrogate: 4-Bromofluorobenzene	*90.1%*		*50.8-121*		*11/13/2024*	*ES*
Gasoline by Method NWTPH-Gx						
Gasoline	ND		7.3	mg/kg dry	11/13/2024	ES
Surrogate: Toluene-d8	*99.6%*		*52.9-135*		*11/13/2024*	*ES*
Diesel and Oil by NWTPH-Dx/Dx						
Diesel	ND		55	mg/kg dry	11/13/2024	KLI
Oil	ND		270	mg/kg dry	11/13/2024	KLI
Surrogate: 2-FBP	*101%*		*38.9-154*		*11/13/2024*	*KLI*
Moisture by ASTM D2216-19						
Moisture	9.0		0.50	%	11/12/2024	JC

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Project: Starbucks Port Angeles
Project Number: 24-155
Project Manager: Scott Rose

City/State: Port Angeles, WA
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Sample Results (Continued)

Client Sample ID: B-1-10

Lab ID: L24K047-02 (Soil)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
Volatile Organic Compounds by EPA Method 8260D						
Methyl tert-Butyl Ether (MTBE)	ND		0.033	mg/kg dry	11/13/2024	ES
Benzene	ND		0.013	mg/kg dry	11/13/2024	ES
1,2-Dichloroethane (EDC)	ND		0.020	mg/kg dry	11/13/2024	ES
Toluene	ND		0.067	mg/kg dry	11/13/2024	ES
1,2-Dibromoethane (EDB) (SIM)	ND		0.0017	mg/kg dry	11/13/2024	ES
Ethylbenzene	ND		0.033	mg/kg dry	11/13/2024	ES
Total Xylenes	ND		0.10	mg/kg dry	11/13/2024	ES
Naphthalene	ND		0.067	mg/kg dry	11/13/2024	ES
2-Methylnaphthalene	ND		0.27	mg/kg dry	11/13/2024	ES
1-Methylnaphthalene	ND		0.27	mg/kg dry	11/13/2024	ES
Surrogate: Dibromofluoromethane	*114%*		*49.6-175*		*11/13/2024*	*ES*
Surrogate: 1,2-Dichloroethane-d4	*103%*		*31.7-194*		*11/13/2024*	*ES*
Surrogate: Toluene-d8	*105%*		*52.9-135*		*11/13/2024*	*ES*
Surrogate: 4-Bromofluorobenzene	*100%*		*50.8-121*		*11/13/2024*	*ES*
Gasoline by Method NWTPH-Gx						
Gasoline	ND		6.7	mg/kg dry	11/13/2024	ES
Surrogate: Toluene-d8	*105%*		*52.9-135*		*11/13/2024*	*ES*
Diesel and Oil by NWTPH-Dx/Dx						
Diesel	ND		59	mg/kg dry	11/13/2024	KLI
Oil	ND		300	mg/kg dry	11/13/2024	KLI
Surrogate: 2-FBP	*103%*		*38.9-154*		*11/13/2024*	*KLI*
Moisture by ASTM D2216-19						
Moisture	16		0.50	%	11/12/2024	JC

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Project: Starbucks Port Angeles
Project Number: 24-155
Project Manager: Scott Rose

City/State: Port Angeles, WA
Work Order: L24K047
Reported: 11/15/2024 13:43

Sample Results (Continued)

Client Sample ID: B-1-15

Lab ID: L24K047-03 (Soil)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
Volatile Organic Compounds by EPA Method 8260D						
Methyl tert-Butyl Ether (MTBE)	ND		0.030	mg/kg dry	11/13/2024	ES
Benzene	ND		0.012	mg/kg dry	11/13/2024	ES
1,2-Dichloroethane (EDC)	ND		0.018	mg/kg dry	11/13/2024	ES
Toluene	ND		0.060	mg/kg dry	11/13/2024	ES
1,2-Dibromoethane (EDB) (SIM)	ND		0.0015	mg/kg dry	11/13/2024	ES
Ethylbenzene	ND		0.030	mg/kg dry	11/13/2024	ES
Total Xylenes	ND		0.090	mg/kg dry	11/13/2024	ES
Naphthalene	ND		0.060	mg/kg dry	11/13/2024	ES
2-Methylnaphthalene	ND		0.24	mg/kg dry	11/13/2024	ES
1-Methylnaphthalene	ND		0.24	mg/kg dry	11/13/2024	ES
Surrogate: Dibromofluoromethane	*107%*		*49.6-175*		*11/13/2024*	*ES*
Surrogate: 1,2-Dichloroethane-d4	*89.6%*		*31.7-194*		*11/13/2024*	*ES*
Surrogate: Toluene-d8	*106%*		*52.9-135*		*11/13/2024*	*ES*
Surrogate: 4-Bromofluorobenzene	*101%*		*50.8-121*		*11/13/2024*	*ES*
Gasoline by Method NWTPH-Gx						
Gasoline	ND		6.0	mg/kg dry	11/13/2024	ES
Surrogate: Toluene-d8	*106%*		*52.9-135*		*11/13/2024*	*ES*
Diesel and Oil by NWTPH-Dx/Dx						
Diesel	ND		57	mg/kg dry	11/13/2024	KLI
Oil	ND		280	mg/kg dry	11/13/2024	KLI
Surrogate: 2-FBP	*99.4%*		*38.9-154*		*11/13/2024*	*KLI*
Moisture by ASTM D2216-19						
Moisture	12		0.50	%	11/12/2024	JC

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Project: Starbucks Port Angeles
Project Number: 24-155
Project Manager: Scott Rose

City/State: Port Angeles, WA
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Sample Results (Continued)

Client Sample ID: B-2-5

Lab ID: L24K047-05 (Soil)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
Volatile Organic Compounds by EPA Method 8260D						
Methyl tert-Butyl Ether (MTBE)	ND		0.025	mg/kg dry	11/13/2024	ES
Benzene	ND		0.010	mg/kg dry	11/13/2024	ES
1,2-Dichloroethane (EDC)	ND		0.015	mg/kg dry	11/13/2024	ES
Toluene	ND		0.051	mg/kg dry	11/13/2024	ES
1,2-Dibromoethane (EDB) (SIM)	ND		0.0013	mg/kg dry	11/13/2024	ES
Ethylbenzene	ND		0.025	mg/kg dry	11/13/2024	ES
Total Xylenes	ND		0.076	mg/kg dry	11/13/2024	ES
Naphthalene	ND		0.051	mg/kg dry	11/13/2024	ES
2-Methylnaphthalene	ND		0.20	mg/kg dry	11/13/2024	ES
1-Methylnaphthalene	ND		0.20	mg/kg dry	11/13/2024	ES
Surrogate: Dibromofluoromethane	*123%*		*49.6-175*		*11/13/2024*	*ES*
Surrogate: 1,2-Dichloroethane-d4	*120%*		*31.7-194*		*11/13/2024*	*ES*
Surrogate: Toluene-d8	*109%*		*52.9-135*		*11/13/2024*	*ES*
Surrogate: 4-Bromofluorobenzene	*99.0%*		*50.8-121*		*11/13/2024*	*ES*
Gasoline by Method NWTPH-Gx						
Gasoline	ND		5.1	mg/kg dry	11/13/2024	ES
Surrogate: Toluene-d8	*109%*		*52.9-135*		*11/13/2024*	*ES*
Diesel and Oil by NWTPH-Dx/Dx						
Diesel	ND		54	mg/kg dry	11/13/2024	KLI
Oil	ND		270	mg/kg dry	11/13/2024	KLI
Surrogate: 2-FBP	*101%*		*38.9-154*		*11/13/2024*	*KLI*
Moisture by ASTM D2216-19						
Moisture	8.0		0.50	%	11/12/2024	JC

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Project: Starbucks Port Angeles
Project Number: 24-155
Project Manager: Scott Rose

City/State: Port Angeles, WA
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Sample Results (Continued)

Client Sample ID: B-2-10

Lab ID: L24K047-06 (Soil)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
Volatile Organic Compounds by EPA Method 8260D						
Methyl tert-Butyl Ether (MTBE)	ND		0.033	mg/kg dry	11/13/2024	ES
Benzene	ND		0.013	mg/kg dry	11/13/2024	ES
1,2-Dichloroethane (EDC)	ND		0.020	mg/kg dry	11/13/2024	ES
Toluene	ND		0.066	mg/kg dry	11/13/2024	ES
1,2-Dibromoethane (EDB) (SIM)	ND		0.0016	mg/kg dry	11/13/2024	ES
Ethylbenzene	ND		0.033	mg/kg dry	11/13/2024	ES
Total Xylenes	ND		0.099	mg/kg dry	11/13/2024	ES
Naphthalene	ND		0.066	mg/kg dry	11/13/2024	ES
2-Methylnaphthalene	ND		0.26	mg/kg dry	11/13/2024	ES
1-Methylnaphthalene	ND		0.26	mg/kg dry	11/13/2024	ES
Surrogate: Dibromofluoromethane	*114%*		*49.6-175*		*11/13/2024*	*ES*
Surrogate: 1,2-Dichloroethane-d4	*108%*		*31.7-194*		*11/13/2024*	*ES*
Surrogate: Toluene-d8	*101%*		*52.9-135*		*11/13/2024*	*ES*
Surrogate: 4-Bromofluorobenzene	*87.6%*		*50.8-121*		*11/13/2024*	*ES*
Gasoline by Method NWTPH-Gx						
Gasoline	ND		6.6	mg/kg dry	11/13/2024	ES
Surrogate: Toluene-d8	*101%*		*52.9-135*		*11/13/2024*	*ES*
Diesel and Oil by NWTPH-Dx/Dx						
Diesel	ND		58	mg/kg dry	11/13/2024	KLI
Oil	ND		290	mg/kg dry	11/13/2024	KLI
Surrogate: 2-FBP	*100%*		*38.9-154*		*11/13/2024*	*KLI*
Moisture by ASTM D2216-19						
Moisture	14		0.50	%	11/12/2024	JC

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Project: Starbucks Port Angeles
Project Number: 24-155
Project Manager: Scott Rose

City/State: Port Angeles, WA
Work Order: L24K047
Reported: 11/15/2024 13:43

Sample Results (Continued)

Client Sample ID: B-2-15

Lab ID: L24K047-07 (Soil)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
Volatile Organic Compounds by EPA Method 8260D						
Methyl tert-Butyl Ether (MTBE)	ND		0.028	mg/kg dry	11/13/2024	ES
Benzene	0.012		0.011	mg/kg dry	11/13/2024	ES
1,2-Dichloroethane (EDC)	ND		0.017	mg/kg dry	11/13/2024	ES
Toluene	ND		0.057	mg/kg dry	11/13/2024	ES
1,2-Dibromoethane (EDB) (SIM)	ND		0.0014	mg/kg dry	11/13/2024	ES
Ethylbenzene	ND		0.028	mg/kg dry	11/13/2024	ES
Total Xylenes	ND		0.085	mg/kg dry	11/13/2024	ES
Naphthalene	ND		0.057	mg/kg dry	11/13/2024	ES
2-Methylnaphthalene	ND		0.23	mg/kg dry	11/13/2024	ES
1-Methylnaphthalene	ND		0.23	mg/kg dry	11/13/2024	ES
Surrogate: Dibromofluoromethane	*114%*		*49.6-175*		*11/13/2024*	*ES*
Surrogate: 1,2-Dichloroethane-d4	*104%*		*31.7-194*		*11/13/2024*	*ES*
Surrogate: Toluene-d8	*104%*		*52.9-135*		*11/13/2024*	*ES*
Surrogate: 4-Bromofluorobenzene	*89.8%*		*50.8-121*		*11/13/2024*	*ES*
Gasoline by Method NWTPH-Gx						
Gasoline	ND		5.7	mg/kg dry	11/13/2024	ES
Surrogate: Toluene-d8	*104%*		*52.9-135*		*11/13/2024*	*ES*
Diesel and Oil by NWTPH-Dx/Dx						
Diesel	ND		56	mg/kg dry	11/13/2024	KLI
Oil	ND		280	mg/kg dry	11/13/2024	KLI
Surrogate: 2-FBP	*102%*		*38.9-154*		*11/13/2024*	*KLI*
Moisture by ASTM D2216-19						
Moisture	11		0.50	%	11/12/2024	JC

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Project: Starbucks Port Angeles
Project Number: 24-155
Project Manager: Scott Rose

City/State: Port Angeles, WA
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Reported: 11/15/2024 13:43

Sample Results (Continued)

Client Sample ID: B-3-5

Lab ID: L24K047-09 (Soil)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
Volatile Organic Compounds by EPA Method 8260D						
Methyl tert-Butyl Ether (MTBE)	ND		0.029	mg/kg dry	11/13/2024	ES
Benzene	ND		0.012	mg/kg dry	11/13/2024	ES
1,2-Dichloroethane (EDC)	ND		0.018	mg/kg dry	11/13/2024	ES
Toluene	ND		0.059	mg/kg dry	11/13/2024	ES
1,2-Dibromoethane (EDB) (SIM)	ND		0.0015	mg/kg dry	11/13/2024	ES
Ethylbenzene	ND		0.029	mg/kg dry	11/13/2024	ES
Total Xylenes	ND		0.088	mg/kg dry	11/13/2024	ES
Naphthalene	ND		0.059	mg/kg dry	11/13/2024	ES
2-Methylnaphthalene	ND		0.24	mg/kg dry	11/13/2024	ES
1-Methylnaphthalene	ND		0.24	mg/kg dry	11/13/2024	ES
Surrogate: Dibromofluoromethane	*114%*		*49.6-175*		*11/13/2024*	*ES*
Surrogate: 1,2-Dichloroethane-d4	*109%*		*31.7-194*		*11/13/2024*	*ES*
Surrogate: Toluene-d8	*103%*		*52.9-135*		*11/13/2024*	*ES*
Surrogate: 4-Bromofluorobenzene	*90.2%*		*50.8-121*		*11/13/2024*	*ES*
Gasoline by Method NWTPH-Gx						
Gasoline	ND		5.9	mg/kg dry	11/13/2024	ES
Surrogate: Toluene-d8	*103%*		*52.9-135*		*11/13/2024*	*ES*
Diesel and Oil by NWTPH-Dx/Dx						
Diesel	ND		53	mg/kg dry	11/13/2024	KLI
Oil	ND		270	mg/kg dry	11/13/2024	KLI
Surrogate: 2-FBP	*104%*		*38.9-154*		*11/13/2024*	*KLI*
Moisture by ASTM D2216-19						
Moisture	6.4		0.50	%	11/12/2024	JC

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Project: Starbucks Port Angeles
Project Number: 24-155
Project Manager: Scott Rose

City/State: Port Angeles, WA
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Sample Results (Continued)

Client Sample ID: B-3-10

Lab ID: L24K047-10 (Soil)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
Volatile Organic Compounds by EPA Method 8260D						
Methyl tert-Butyl Ether (MTBE)	ND		0.023	mg/kg dry	11/14/2024	PB
Benzene	ND		0.0091	mg/kg dry	11/14/2024	PB
1,2-Dichloroethane (EDC)	ND		0.014	mg/kg dry	11/14/2024	PB
Toluene	ND		0.046	mg/kg dry	11/14/2024	PB
1,2-Dibromoethane (EDB) (SIM)	ND		0.0011	mg/kg dry	11/14/2024	PB
Ethylbenzene	ND		0.023	mg/kg dry	11/14/2024	PB
Total Xylenes	ND		0.069	mg/kg dry	11/14/2024	PB
Naphthalene	ND		0.046	mg/kg dry	11/14/2024	PB
2-Methylnaphthalene	ND		0.18	mg/kg dry	11/14/2024	PB
1-Methylnaphthalene	ND		0.18	mg/kg dry	11/14/2024	PB
Surrogate: Dibromofluoromethane	*108%*		*49.6-175*		*11/14/2024*	*PB*
Surrogate: 1,2-Dichloroethane-d4	*94.2%*		*31.7-194*		*11/14/2024*	*PB*
Surrogate: Toluene-d8	*112%*		*52.9-135*		*11/14/2024*	*PB*
Surrogate: 4-Bromofluorobenzene	*114%*		*50.8-121*		*11/14/2024*	*PB*
Gasoline by Method NWTPH-Gx						
Gasoline	ND		4.6	mg/kg dry	11/14/2024	PB
Surrogate: Toluene-d8	*112%*		*52.9-135*		*11/14/2024*	*PB*
Diesel and Oil by NWTPH-Dx/Dx						
Diesel	ND		55	mg/kg dry	11/13/2024	KLI
Oil	ND		280	mg/kg dry	11/13/2024	KLI
Surrogate: 2-FBP	*100%*		*38.9-154*		*11/13/2024*	*KLI*
Moisture by ASTM D2216-19						
Moisture	9.9		0.50	%	11/12/2024	JC

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Project: Starbucks Port Angeles
Project Number: 24-155
Project Manager: Scott Rose

City/State: Port Angeles, WA
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Sample Results (Continued)

Client Sample ID: B-3-15

Lab ID: L24K047-11 (Soil)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
Volatile Organic Compounds by EPA Method 8260D						
Methyl tert-Butyl Ether (MTBE)	ND		0.033	mg/kg dry	11/14/2024	PB
Benzene	ND		0.013	mg/kg dry	11/14/2024	PB
1,2-Dichloroethane (EDC)	ND		0.020	mg/kg dry	11/14/2024	PB
Toluene	ND		0.065	mg/kg dry	11/14/2024	PB
1,2-Dibromoethane (EDB) (SIM)	ND		0.0016	mg/kg dry	11/14/2024	PB
Ethylbenzene	ND		0.033	mg/kg dry	11/14/2024	PB
Total Xylenes	ND		0.098	mg/kg dry	11/14/2024	PB
Naphthalene	ND		0.065	mg/kg dry	11/14/2024	PB
2-Methylnaphthalene	ND		0.26	mg/kg dry	11/14/2024	PB
1-Methylnaphthalene	ND		0.26	mg/kg dry	11/14/2024	PB
Surrogate: Dibromofluoromethane	*115%*		*49.6-175*		*11/14/2024*	*PB*
Surrogate: 1,2-Dichloroethane-d4	*104%*		*31.7-194*		*11/14/2024*	*PB*
Surrogate: Toluene-d8	*111%*		*52.9-135*		*11/14/2024*	*PB*
Surrogate: 4-Bromofluorobenzene	*110%*		*50.8-121*		*11/14/2024*	*PB*
Gasoline by Method NWTPH-Gx						
Gasoline	ND		6.5	mg/kg dry	11/14/2024	PB
Surrogate: Toluene-d8	*111%*		*52.9-135*		*11/14/2024*	*PB*
Diesel and Oil by NWTPH-Dx/Dx						
Diesel	ND		58	mg/kg dry	11/13/2024	KLI
Oil	ND		290	mg/kg dry	11/13/2024	KLI
Surrogate: 2-FBP	*102%*		*38.9-154*		*11/13/2024*	*KLI*
Moisture by ASTM D2216-19						
Moisture	13		0.50	%	11/12/2024	JC

AEG an Atlas Geosciences NW Company
2633 Parkmont Lane SW, Suite A
Olympia, WA 98502

Project: Starbucks Port Angeles
Project Number: 24-155
Project Manager: Scott Rose

City/State: Port Angeles, WA
Work Order: L24K047
Reported: 11/15/2024 13:43

Quality Control

Volatile Organic Compounds by EPA Method 8260D

Analyte	Result	Qual	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BYK0086 - VOA										
Blank (BYK0086-BLK1)					Prepared & Analyzed: 11/13/2024					
Methyl tert-Butyl Ether (MTBE)	ND		0.050	mg/kg wet						
Benzene	ND		0.020	mg/kg wet						
1,2-Dichloroethane (EDC)	ND		0.030	mg/kg wet						
Toluene	ND		0.10	mg/kg wet						
1,2-Dibromoethane (EDB) (SIM)	ND		0.0025	mg/kg wet						
Ethylbenzene	ND		0.050	mg/kg wet						
Total Xylenes	ND		0.15	mg/kg wet						
Naphthalene	ND		0.10	mg/kg wet						
2-Methylnaphthalene	ND		0.40	mg/kg wet						
1-Methylnaphthalene	ND		0.40	mg/kg wet						
Surrogate: Dibromofluoromethane			*23.0*	*ug/L*	*20.0*		*115*	*49.6-175*		
Surrogate: 1,2-Dichloroethane-d4			*22.3*	*ug/L*	*20.0*		*111*	*31.7-194*		
Surrogate: Toluene-d8			*19.9*	*ug/L*	*20.0*		*99.4*	*52.9-135*		
Surrogate: 4-Bromofluorobenzene			*18.3*	*ug/L*	*20.0*		*91.6*	*50.8-121*		
LCS (BYK0086-BS1)					Prepared & Analyzed: 11/13/2024					
Methyl tert-Butyl Ether (MTBE)	0.132		0.050	mg/kg wet	0.250		52.7	29.6-190		
Benzene	0.218		0.020	mg/kg wet	0.250		87.0	54.1-136		
1,2-Dichloroethane (EDC)	0.290		0.030	mg/kg wet	0.250		116	52.8-185		
Toluene	0.224		0.10	mg/kg wet	0.250		89.6	53.3-135		
1,2-Dibromoethane (EDB)	0.254		0.10	mg/kg wet	0.250		102	49.9-155		
Ethylbenzene	0.209		0.050	mg/kg wet	0.250		83.6	51.1-125		
Total Xylenes	0.655		0.15	mg/kg wet	0.750		87.3	47.2-123		
Naphthalene	0.159		0.10	mg/kg wet	0.250		63.6	10-220		
2-Methylnaphthalene	0.142		0.40	mg/kg wet	0.250		56.7	16.1-204		
1-Methylnaphthalene	0.144		0.40	mg/kg wet	0.250		57.8	10-205		
Surrogate: Dibromofluoromethane			*21.7*	*ug/L*	*20.0*		*109*	*49.6-175*		
Surrogate: 1,2-Dichloroethane-d4			*21.3*	*ug/L*	*20.0*		*107*	*31.7-194*		
Surrogate: Toluene-d8			*19.8*	*ug/L*	*20.0*		*99.1*	*52.9-135*		
Surrogate: 4-Bromofluorobenzene		*S4*	*24.9*	*ug/L*	*20.0*		*124*	*50.8-121*		
Duplicate (BYK0086-DUP1)		**Parent: L24K047-01**			Prepared & Analyzed: 11/13/2024					
Methyl tert-Butyl Ether (MTBE)	ND		0.036	mg/kg dry		ND				35
Benzene	ND		0.014	mg/kg dry		ND				35
1,2-Dichloroethane (EDC)	ND		0.022	mg/kg dry		ND				35
Toluene	ND		0.072	mg/kg dry		ND				35
1,2-Dibromoethane (EDB) (SIM)	ND		0.0018	mg/kg dry		ND				35
Ethylbenzene	ND		0.036	mg/kg dry		ND				35
Total Xylenes	ND		0.11	mg/kg dry		ND				35
Naphthalene	ND		0.072	mg/kg dry		ND				35
2-Methylnaphthalene	ND		0.29	mg/kg dry		ND				35
1-Methylnaphthalene	ND		0.29	mg/kg dry		ND				35
Surrogate: Dibromofluoromethane			*23.2*	*ug/L*	*20.0*		*116*	*49.6-175*		
Surrogate: 1,2-Dichloroethane-d4			*21.7*	*ug/L*	*20.0*		*108*	*31.7-194*		
Surrogate: Toluene-d8			*20.6*	*ug/L*	*20.0*		*103*	*52.9-135*		
Surrogate: 4-Bromofluorobenzene			*18.5*	*ug/L*	*20.0*		*92.4*	*50.8-121*		

AEG an Atlas Geosciences NW Company
2633 Parkmont Lane SW, Suite A
Olympia, WA 98502

Project: Starbucks Port Angeles
Project Number: 24-155
Project Manager: Scott Rose

City/State: Port Angeles, WA
Work Order: L24K047
Reported: 11/15/2024 13:43

Quality Control
(Continued)

Volatile Organic Compounds by EPA Method 8260D (Continued)

Analyte	Result	Qual	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Matrix Spike (BYK0086-MS1)		**Parent: L24K047-01**			Prepared & Analyzed: 11/13/2024					
Methyl tert-Butyl Ether (MTBE)	0.100		0.036	mg/kg dry	0.182	ND	55.1	10.2-198		
Benzene	0.163		0.015	mg/kg dry	0.182	ND	89.5	37-148		
1,2-Dichloroethane (EDC)	0.225		0.022	mg/kg dry	0.182	ND	124	27.3-209		
Toluene	0.180		0.073	mg/kg dry	0.182	ND	98.8	28.1-154		
1,2-Dibromoethane (EDB)	0.185		0.073	mg/kg dry	0.182	ND	102	24.6-182		
Ethylbenzene	0.169		0.036	mg/kg dry	0.182	ND	92.9	27-142		
Total Xylenes	0.511		0.11	mg/kg dry	0.546	ND	93.7	23.4-152		
Naphthalene	0.104		0.073	mg/kg dry	0.182	ND	57.0	10-222		
2-Methylnaphthalene	0.185		0.29	mg/kg dry	0.182	ND	102	16.1-204		
1-Methylnaphthalene	0.177		0.29	mg/kg dry	0.182	ND	97.1	10-205		
Surrogate: Dibromofluoromethane			*23.4*	*ug/L*	*20.0*		*117*	*49.6-175*		
Surrogate: 1,2-Dichloroethane-d4			*21.5*	*ug/L*	*20.0*		*108*	*31.7-194*		
Surrogate: Toluene-d8			*20.8*	*ug/L*	*20.0*		*104*	*52.9-135*		
Surrogate: 4-Bromofluorobenzene		*S4*	*24.4*	*ug/L*	*20.0*		*122*	*50.8-121*		
Matrix Spike Dup (BYK0086-MSD1)		**Parent: L24K047-01**			Prepared & Analyzed: 11/13/2024					
Methyl tert-Butyl Ether (MTBE)	0.100		0.036	mg/kg dry	0.182	ND	55.1	10.2-198	0.00	35
Benzene	0.163		0.015	mg/kg dry	0.182	ND	89.5	37-148	0.00	35
1,2-Dichloroethane (EDC)	0.225		0.022	mg/kg dry	0.182	ND	124	27.3-209	0.00	35
Toluene	0.180		0.073	mg/kg dry	0.182	ND	98.8	28.1-154	0.00	35
1,2-Dibromoethane (EDB)	0.190		0.073	mg/kg dry	0.182	ND	104	24.6-182	2.64	35
Ethylbenzene	0.166		0.036	mg/kg dry	0.182	ND	91.2	27-142	1.83	35
Total Xylenes	0.526		0.11	mg/kg dry	0.546	ND	96.4	23.4-152	2.86	35
Naphthalene	0.104		0.073	mg/kg dry	0.182	ND	57.2	10-222	0.280	35
2-Methylnaphthalene	0.185		0.29	mg/kg dry	0.182	ND	102	16.1-204	0.00	35
1-Methylnaphthalene	0.177		0.29	mg/kg dry	0.182	ND	97.1	10-205	0.00	35
Surrogate: Dibromofluoromethane			*23.6*	*ug/L*	*20.0*		*118*	*49.6-175*		
Surrogate: 1,2-Dichloroethane-d4			*21.6*	*ug/L*	*20.0*		*108*	*31.7-194*		
Surrogate: Toluene-d8			*20.8*	*ug/L*	*20.0*		*104*	*52.9-135*		
Surrogate: 4-Bromofluorobenzene		*S4*	*24.4*	*ug/L*	*20.0*		*122*	*50.8-121*		
Blank (BYK0099-BLK1)					Prepared & Analyzed: 11/14/2024					
Methyl tert-Butyl Ether (MTBE)	ND		0.050	mg/kg wet						
Benzene	ND		0.020	mg/kg wet						
1,2-Dichloroethane (EDC)	ND		0.030	mg/kg wet						
Toluene	ND		0.10	mg/kg wet						
1,2-Dibromoethane (EDB) (SIM)	ND		0.0025	mg/kg wet						
Ethylbenzene	ND		0.050	mg/kg wet						
Total Xylenes	ND		0.15	mg/kg wet						
Naphthalene	ND		0.10	mg/kg wet						
2-Methylnaphthalene	ND		0.40	mg/kg wet						
1-Methylnaphthalene	ND		0.40	mg/kg wet						
Surrogate: Dibromofluoromethane			*22.2*	*ug/L*	*20.0*		*111*	*49.6-175*		
Surrogate: 1,2-Dichloroethane-d4			*21.0*	*ug/L*	*20.0*		*105*	*31.7-194*		
Surrogate: Toluene-d8			*20.8*	*ug/L*	*20.0*		*104*	*52.9-135*		
Surrogate: 4-Bromofluorobenzene			*20.1*	*ug/L*	*20.0*		*101*	*50.8-121*		

AEG an Atlas Geosciences NW Company
2633 Parkmont Lane SW, Suite A
Olympia, WA 98502

Project: Starbucks Port Angeles
Project Number: 24-155
Project Manager: Scott Rose

City/State: Port Angeles, WA
Work Order: L24K047
Reported: 11/15/2024 13:43

Quality Control
(Continued)

Volatile Organic Compounds by EPA Method 8260D (Continued)

Analyte	Result	Qual	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
LCS (BYK0099-BS1)					Prepared & Analyzed: 11/14/2024					
Methyl tert-Butyl Ether (MTBE)	0.138		0.050	mg/kg wet	0.250		55.1	29.6-190		
Benzene	0.232		0.020	mg/kg wet	0.250		92.6	54.1-136		
1,2-Dichloroethane (EDC)	0.306		0.030	mg/kg wet	0.250		122	52.8-185		
Toluene	0.263		0.10	mg/kg wet	0.250		105	53.3-135		
1,2-Dibromoethane (EDB)	0.242		0.10	mg/kg wet	0.250		96.6	49.9-155		
Ethylbenzene	0.238		0.050	mg/kg wet	0.250		95.3	51.1-125		
Total Xylenes	0.689		0.15	mg/kg wet	0.750		91.9	47.2-123		
Naphthalene	0.189		0.10	mg/kg wet	0.250		75.6	10-220		
2-Methylnaphthalene	0.390		0.40	mg/kg wet				16.1-204		
1-Methylnaphthalene	0.389		0.40	mg/kg wet				10-205		
Surrogate: Dibromofluoromethane			*22.8*	*ug/L*	*20.0*		*114*	*49.6-175*		
Surrogate: 1,2-Dichloroethane-d4			*22.0*	*ug/L*	*20.0*		*110*	*31.7-194*		
Surrogate: Toluene-d8			*22.0*	*ug/L*	*20.0*		*110*	*52.9-135*		
Surrogate: 4-Bromofluorobenzene		*S4*	*24.3*	*ug/L*	*20.0*		*121*	*50.8-121*		
Duplicate (BYK0099-DUP1)		**Parent: L24K065-01**			Prepared & Analyzed: 11/14/2024					
Methyl tert-Butyl Ether (MTBE)	ND		0.042	mg/kg dry		ND				35
Benzene	ND		0.017	mg/kg dry		ND				35
1,2-Dichloroethane (EDC)	ND		0.025	mg/kg dry		ND				35
Toluene	ND		0.085	mg/kg dry		ND				35
1,2-Dibromoethane (EDB) (SIM)	ND		0.0021	mg/kg dry		ND				35
Ethylbenzene	ND		0.042	mg/kg dry		ND				35
Total Xylenes	ND		0.13	mg/kg dry		ND				35
Naphthalene	ND		0.085	mg/kg dry		ND				35
2-Methylnaphthalene	ND		0.34	mg/kg dry		ND				35
1-Methylnaphthalene	ND		0.34	mg/kg dry		ND				35
Surrogate: Dibromofluoromethane			*24.5*	*ug/L*	*20.0*		*123*	*49.6-175*		
Surrogate: 1,2-Dichloroethane-d4			*23.6*	*ug/L*	*20.0*		*118*	*31.7-194*		
Surrogate: Toluene-d8			*21.1*	*ug/L*	*20.0*		*105*	*52.9-135*		
Surrogate: 4-Bromofluorobenzene			*19.4*	*ug/L*	*20.0*		*97.0*	*50.8-121*		
Matrix Spike (BYK0099-MS1)		**Parent: L24K065-01**			Prepared & Analyzed: 11/14/2024					
Methyl tert-Butyl Ether (MTBE)	0.127		0.042	mg/kg dry	0.212	ND	60.0	10.2-198		
Benzene	0.214		0.017	mg/kg dry	0.212	ND	101	37-148		
1,2-Dichloroethane (EDC)	0.288		0.025	mg/kg dry	0.212	ND	136	27.3-209		
Toluene	0.236		0.085	mg/kg dry	0.212	ND	111	28.1-154		
1,2-Dibromoethane (EDB)	0.209		0.085	mg/kg dry	0.212	ND	98.5	24.6-182		
Ethylbenzene	0.203		0.042	mg/kg dry	0.212	ND	96.1	27-142		
Total Xylenes	0.600		0.13	mg/kg dry	0.635	ND	94.4	23.4-152		
Naphthalene	0.131		0.085	mg/kg dry	0.212	ND	61.7	10-222		
2-Methylnaphthalene	0.186		0.34	mg/kg dry		ND		16.1-204		
1-Methylnaphthalene	0.183		0.34	mg/kg dry		ND		10-205		
Surrogate: Dibromofluoromethane			*24.4*	*ug/L*	*20.0*		*122*	*49.6-175*		
Surrogate: 1,2-Dichloroethane-d4			*23.6*	*ug/L*	*20.0*		*118*	*31.7-194*		
Surrogate: Toluene-d8			*21.8*	*ug/L*	*20.0*		*109*	*52.9-135*		
Surrogate: 4-Bromofluorobenzene		*S4*	*24.5*	*ug/L*	*20.0*		*123*	*50.8-121*		

AEG an Atlas Geosciences NW Company
2633 Parkmont Lane SW, Suite A
Olympia, WA 98502

Project: Starbucks Port Angeles
Project Number: 24-155
Project Manager: Scott Rose

City/State: Port Angeles, WA
Work Order: L24K047
Reported: 11/15/2024 13:43

Quality Control
(Continued)

Volatile Organic Compounds by EPA Method 8260D (Continued)

Analyte	Result	Qual	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Matrix Spike Dup (BYK0099-MSD1)		**Parent: L24K065-01**			Prepared & Analyzed: 11/14/2024					
Methyl tert-Butyl Ether (MTBE)	0.112		0.042	mg/kg dry	0.212	ND	53.1	10.2-198	12.3	35
Benzene	0.186		0.017	mg/kg dry	0.212	ND	87.8	37-148	14.2	35
1,2-Dichloroethane (EDC)	0.267		0.025	mg/kg dry	0.212	ND	126	27.3-209	7.65	35
Toluene	0.209		0.085	mg/kg dry	0.212	ND	98.8	28.1-154	12.0	35
1,2-Dibromoethane (EDB)	0.209		0.085	mg/kg dry	0.212	ND	98.9	24.6-182	0.426	35
Ethylbenzene	0.188		0.042	mg/kg dry	0.212	ND	88.6	27-142	8.10	35
Total Xylenes	0.552		0.13	mg/kg dry	0.635	ND	86.9	23.4-152	8.25	35
Naphthalene	0.121		0.085	mg/kg dry	0.212	ND	57.1	10-222	7.84	35
2-Methylnaphthalene	0.222		0.34	mg/kg dry		ND		16.1-204	17.7	35
1-Methylnaphthalene	0.249		0.34	mg/kg dry		ND		10-205	30.3	35
Surrogate: Dibromofluoromethane			*24.3*	*ug/L*	*20.0*		*122*	*49.6-175*		
Surrogate: 1,2-Dichloroethane-d4			*22.8*	*ug/L*	*20.0*		*114*	*31.7-194*		
Surrogate: Toluene-d8			*22.2*	*ug/L*	*20.0*		*111*	*52.9-135*		
Surrogate: 4-Bromofluorobenzene		*S4*	*25.3*	*ug/L*	*20.0*		*126*	*50.8-121*		

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Project: Starbucks Port Angeles
Project Number: 24-155
Project Manager: Scott Rose

City/State: Port Angeles, WA
Work Order: L24K047
Reported: 11/15/2024 13:43

Quality Control
(Continued)

Gasoline by Method NWTPH-Gx

Analyte	Result	Qual	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BYK0086 - VOA										
Blank (BYK0086-BLK1)					Prepared & Analyzed: 11/13/2024					
Gasoline	ND		10	mg/kg wet						
Surrogate: Toluene-d8			*19.9*	*ug/L*	*20.0*		*99.4*	*52.9-135*		
Duplicate (BYK0086-DUP1)		**Parent: L24K047-01**			Prepared & Analyzed: 11/13/2024					
Gasoline	ND		7.2	mg/kg dry		ND				35
Surrogate: Toluene-d8			*20.6*	*ug/L*	*20.0*		*103*	*52.9-135*		
Blank (BYK0099-BLK1)					Prepared & Analyzed: 11/14/2024					
Gasoline	ND		10	mg/kg wet						
Surrogate: Toluene-d8			*20.8*	*ug/L*	*20.0*		*104*	*52.9-135*		
Duplicate (BYK0099-DUP1)		**Parent: L24K065-01**			Prepared & Analyzed: 11/14/2024					
Gasoline	ND		8.5	mg/kg dry		ND				35
Surrogate: Toluene-d8			*21.1*	*ug/L*	*20.0*		*105*	*52.9-135*		

AEG an Atlas Geosciences NW Company	**Project:** Starbucks Port Angeles	**City/State:** Port Angeles, WA
2633 Parkmont Lane SW, Suite A	**Project Number:** 24-155	**Work Order:** L24K047
Olympia, WA 98502	**Project Manager:** Scott Rose	**Reported:** 11/15/2024 13:43

Quality Control
(Continued)

Diesel and Oil by NWTPH-Dx/Dx

Analyte	Result	Qual	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BYK0085 - Extraction										
Blank (BYK0085-BLK1)					Prepared & Analyzed: 11/13/2024					
Diesel	ND		50	mg/kg wet						
Oil	ND		250	mg/kg wet						
Surrogate: 2-FBP			*20.4*	*ug/mL*	*20.0*		*102*	*38.9-154*		
LCS (BYK0085-BS1)					Prepared & Analyzed: 11/13/2024					
Diesel	157		50	mg/kg wet	100		157	52-159		
Surrogate: 2-FBP			*20.7*	*ug/mL*	*20.0*		*104*	*38.9-154*		
Duplicate (BYK0085-DUP1)		**Parent: L24K047-01**			Prepared & Analyzed: 11/13/2024					
Diesel	ND		55	mg/kg dry		ND				35
Oil	ND		270	mg/kg dry		ND				35
Surrogate: 2-FBP			*19.6*	*ug/mL*	*20.0*		*98.2*	*38.9-154*		

AEG an Atlas Geosciences NW Company	**Project:** Starbucks Port Angeles	**City/State:** Port Angeles, WA
2633 Parkmont Lane SW, Suite A	**Project Number:** 24-155	**Work Order:** L24K047
Olympia, WA 98502	**Project Manager:** Scott Rose	**Reported:** 11/15/2024 13:43

Quality Control
(Continued)

Moisture by ASTM D2216-19

Analyte	Result	Qual	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BYK0080 - Gen Chem										
LCS (BYK0080-BS1)					Prepared & Analyzed: 11/12/2024					
Moisture	18			%	17.0		106	90-115		

Libby Environmental, Inc.

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

Starbucks Port Angeles Project
AEG an Atlas Geosciences NW Company
Libby Work Order # L24K047
Date Received 11/8/2024
Time Received 2:47 PM

Received By MF

Sample Receipt Checklist

Chain of Custody

1. Is the Chain of Custody is 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)	0.0 °C		
8. Temperature of sample(s) (0°C to 8°C recommended)	1.9 °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. _____