Krazan & ASSOCIATES, INC.

GEOTECHNICAL ENGINEERING • ENVIRONMENTAL ENGINEERING
CONSTRUCTION TESTING & INSPECTION

April 29, 2022 Project No. 104-21020

Mr. Duane Meszaros, Director of Development
Russell Square Consulting
41428 Mackenzie Court
Murrieta, CA 92562

RE: Groundwater Quarterly Monitoring – Fourth Quarter Summary Letter
Lots 25 & 26 of the JSP Silverdale site
NW Brian Lane
Silverdale, Washington

Dear Mr. Meszaros:

This report summarizes the four quarters of groundwater monitoring activities conducted to date for the referenced site in Silverdale, Washington (see Figure 1, Vicinity Map). Data collected from these samples confirms whether contaminants of potential concern (COPC) originating from alleged solid waste disposal or other potential sources of contamination migrated from soil to groundwater at five locations of concern on the subject site (Figure 2, Site Map). This work is being conducted in response to a request for further groundwater characterization outlined in a letter sent from the Department of Ecology (DOE) to Mr. Andrew Seitz on March 9, 2021, and to determine if any remedial action is required to meet substantive requirements of the Model Toxics Control Act (MTCA), Chapter 70A.305 RCW. Monitoring results for the first and second quarters, collected on July 21, 2021, and October 6, 2021, respectively, were previously summarized in a Remedial Investigation Report, dated October 19, 2021. Third quarter monitoring results were summarized in a quarterly monitoring report dated February 22, 2022. The work was conducted in general accordance with Proposal No. E21042WAP, dated June 23, 2021, which was approved by Mr. Blaise Hilton on July 22, 2021.

Monitoring Well Installation

In response to DOE's Opinion, dated February 24, 2022, and subsequent meetings with the DOE project manager, Krazan installed an additional monitoring well adjacent to the former house and drum area for further groundwater monitoring as shown on Figure 2.

Representatives of Krazan collected subsurface soil samples and logged the installation of the monitoring well MW-6 on March 21, 2022. The monitoring well was drilled and installed using a track-mounted, hollow-stem auger drill rig to a maximum depth of 26.5 feet bgs. The monitoring well was located per conversations with Ecology to permit sampling of the soil and groundwater adjacent to the former house and drum area.

During drilling, soil samples were collected in 18-inch sections using a 2.0-inch or 3.0-inch diameter split-spoon sampler. The samples were visually described using the Unified Soils Classification System

(ASTM D2487). A lithologic log with well construction details is attached in Appendix A. The soil samples were screened n the field using a Photo-Ionization Detector (PID) for the presence of volatile organic compounds. Soil samples were collected every 5.0-feet from the boring.

On completion of drilling, the monitoring well was installed. The monitoring well was constructed with 2-inch diameter Schedule 40 PVC well screen and riser pipe. The well contains a 15-foot-long section of 10-slot (0.010-inch) PVC well screen. The well screen was placed to ensure that the top of the water table was below the top of the screen. The annular space between the well screen and borehole wall was backfilled with sand. A bentonite seal was placed above the sand pack to three-feet below the ground surface. The top of each well was completed with an above-ground steel monument, which was cemented in place with three steel bollards protecting each well.

Public and private underground utilities were located prior to the installation of the monitoring wells. Due to the nature of the site use, no utilities were located on the subject property. The horizontal sample locations were marked in the field and surveyed by a licensed surveyor (AES Consultants). The measuring point elevations of the monitoring wells were surveyed using the North American Vertical Datum of 1988 by a Washington-state licensed surveyor, in accordance with WAC 173-340-840(4)(e). Depths to groundwater were measured to the nearest 0.01 foot and elevations were contoured to determine the predominant groundwater flow direction at the site. The depth to groundwater is shown on the monitoring well boring log in Appendix A.

Soil Sampling Results

During the monitoring well installation, each soil sample collected was screened using a PID to assess for the presence of volatile organic constituents. No detectable measurements were recorded from the soil samples. Soil samples were collected from the borings according to the sampling outlined in the Sampling and Analysis Plan (SAP) dated April 2021. All samples were analyzed for Total Petroleum Hydrocarbons in the diesel and heavy oil range by Method NWTPH-Dx, Total Petroleum Hydrocarbons in the gasoline range by Method NWTPH-Gx, BTEX by Method 8021B, Polycyclic Aromatic Hydrocarbons (PAHs) by EPA Method 8270E, Polychlorinated Biphenyls (PCBs) by Method 8082; and total metals (lead and arsenic) by Method 6020.

Subsurface soil analytical results for NWTPH-Dx, NWTPH-Gx, BTEX, PAHs, and PCBs were all non-detect. Analytical results for lead and arsenic are listed in Table 1. No COPCs were detected in concentrations greater than MTCA Method A cleanup levels in any sample.

Table 1. Summary of Groundwater Total Metals Results
JSP Silverdale Lots 25 and 26

Sample No.	Date Sampled	Depth (feet)	Lead	Arsenic
2021-SB-53	3/30/22	2.5	<5	<1
2021-SB-54	3/30/22	5.0	<5	<1
2021-SB-55	3/30/22	10.0	<5	1.11
2021-SB-56	3/30/22	15.0	<5	1.38
2021-SB-57	3/30/22	20.0	<5	1.56
2021-SB-58	3/30/22	25.0	<5	1.21
MTCA Method A Cleanup Levels*				

Notes:
Concentrations listed in milligrams per kilograms (mg/kg), or parts per million (ppm).
MTCA = the Model Toxics Control Act regulation and the regulations promulgated thereunder (Washington Administrative Code, Chapter 173-340).
* Method A soil cleanup levels per Table 749-2 (Washington Administrative Code, 173-360-900)
Bolded Results indicate concentrations above the cleanup levels

Groundwater Sampling Activities

For fourth quarter monitoring, groundwater samples were collected from the wells on April 8, 2022, and submitted for chemical analysis. Sampling was conducted according to the Sampling and Analysis Plan, dated June 10, 2021. The water sampling logs are attached in Appendix A. Prior to sampling, the static water level was measured in each well. Low-flow groundwater samples were collected using a peristaltic pump and dispensed into laboratory-supplied glass sample bottles with disposable, single-use tubing. Each sample bottle was labeled with the project name, number, and the sequential sample number. Following labeling, the samples were placed in an ice chest with synthetic ice and maintained at a temperature of approximately 4° Celsius.

All samples were transported to Friedman & Bruya Environmental Chemist Laboratories in Seattle, Washington, for analysis. As per direction of Ecology PM Jing Song, the groundwater samples from monitoring wells MW-1 to MW-5 were analyzed for Total Petroleum Hydrocarbons in the Diesel-extended range by Method NWTPH-Dx; Total Petroleum Hydrocarbons in the Gas-extended range by method NWTPH-Gx and additional associated volatile organic compounds (VOCs) by Method BTEX 8021B. The groundwater sample from monitoring well MW-6 was analyzed for the above parameters as well as Polycyclic Aromatic Hydrocarbons (PAHs) by Method 8270; Polychlorinated Biphenyls (PCBs) by Method 8082; and total metals (lead and arsenic) by Method 6020.

Groundwater Monitoring Results

The quarterly laboratory analytical results for the groundwater samples from the past four quarters are listed in Tables 2-4. The laboratory reports are provided in Appendix B. No BTEX VOCs, or Total Petroleum Hydrocarbons were detected in samples from MW-1 through MW-5. No PAHs, PCBs, and metals (As and Pb) were detected in the MW-6 groundwater sample.

Table 2. Summary of Groundwater Total Petroleum Hydrocarbons in the Gasoline Range and BTEX Results
JSP Silverdale Lots 25 and 26

Well No.	Sample No.	Date Sampled	NWTPH-Gx and BTEX 8021B				
			Benzene (µg/l)	Toluene (µg/l)	Ethylbenzene (µg/l)	Xylenes (µg/l)	Gasoline (µg/l)
MW-1	2021-GW-101	7/21/21	<1	<1	<1	<3	<100
	2021-GW-201	10/6/2021	<1	<1	<1	<3	<100
	2021-GW-301	1/24/22	<1	<1	<1	<3	<100
	2021-GW-302	1/24/22	<1	<1	<1	<3	<100
	2022-GW-401	4/8/22	<1	<1	<1	<3	<100
MW-2	2021-GW-102	7/21/21	<1	<1	<1	<3	<100
	2021-GW-202	10/6/2021	<1	<1	<1	<3	<100
	2021-GW-303	1/24/22	<1	<1	<1	<3	<100
	2022-GW-402	4/8/22	<1	<1	<1	<3	<100
	2022-GW-403	4/8/22	<1	<1	<1	<3	<100
MW-3	2021-GW-103	7/21/21	<1	<1	<1	<3	<100
	2021-GW-203	10/6/2021	<1	<1	<1	<3	<100
	2021-GW-204	10/6/2021	<1	<1	<1	<3	<100
	2021-GW-304	1/24/22	<1	<1	<1	<3	<100
	2022-GW-404	4/8/22	<1	<1	<1	<3	<100
MW-4	2021-GW-104	7/21/21	<1	<1	<1	<3	<100
	2021-GW-205	10/6/2021	<1	<1	<1	<3	<100
	2021-GW-305	1/24/22	<1	<1	<1	<3	<100
	2022-GW-405	4/8/22	<1	<1	<1	<3	<100
MW-5	2021-GW-105	7/21/21	<1	<1	<1	3.3	370
	2021-GW-106	7/21/21	<1	<1	<1	3.1	380
	2021-GW-206	10/6/2021	<1	<1	<1	<3	<100
	2021-GW-306	1/24/22	<1	<1	<1	<3	<100
	2022-GW-406	4/8/22	<1	<1	<1	<3	<100
MW-6	2022-GW-407	4/8/22	<1	<1	<1	<3	<100
MTCA Method A Cleanup Levels			**5**	**1,000**	**700**	**1,000**	**800/1,000**

Notes:
Concentrations listed in micrograms per liter (µg/l), or parts per billion (ppb).
MTCA = the Model Toxics Control Act regulation and the regulations promulgated thereunder (Washington Administrative Code, Chapter 173-340).

Table 3. Summary of Groundwater Total Petroleum Hydrocarbon in the Diesel Extended Range Results
JSP Silverdale Lots 25 and 26

Well No.	Sample No.	Date Sampled	NWTPH-Dx	
			Diesel (µg/l)	Lube Oil (µg/l)
MW-1	2021-GW-101	7/21/21	180x	<250
	2021-GW-201	10/6/2021	<60	<300
	2021-GW-301	1/24/22	<50	<250
	2021-GW-302	1/24/22	<50	<250
	2022-GW-401	4/8/22	<50	<250
MW-2	2021-GW-102	7/21/21	<50	<250
	2021-GW-202	10/6/2021	73x	<250
	2021-GW-303	1/24/22	<50	<250
	2022-GW-402	4/8/22	95x	<250
	2022-GW-403	4/8/22	71x	<250
MW-3	2021-GW-103	7/21/21	210x	<250
	2021-GW-203	10/6/2021	<60	<250
	2021-GW-204	10/6/2021	<50	`<250
	2021-GW-304	1/24/22	<50	<250
	2022-GW-404	4/8/22	67x	<250
MW-4	2021-GW-104	7/21/21	130x	<250
	2021-GW-205	10/6/2021	<50	<250
	2021-GW-305	1/24/22	<50	<250
	2022-GW-405	4/8/22	78x	<250
MW-5	2021-GW-105	7/21/21	420x	<250
	2021-GW-106	7/21/21	340x	<250
	2021-GW-206	10/6/2021	<50	<250
	2021-GW-306	1/24/22	<50	<250
	2022-GW-406	4/8/22	69x	<250
MW-6	2022-GW-407	4/8/22	<50	<250
MTCA Method A Cleanup Levels			**500**	**500**

Notes:
Concentrations listed in micrograms per liter (µg/l), or parts per billion (ppb).
x = the sample chromatographic pattern does not resemble the fuel standard used for quantitation
MTCA = the Model Toxics Control Act regulation and the regulations promulgated thereunder (Washington Administrative Code, Chapter 173-340).
NA = Not Analyzed

Table 4. Summary of Groundwater PAH, PCB, Lead, and Arsenic Results
JSP Silverdale Lots 25 and 26

Well No.	Sample No.	Date Sampled	PAHs (µg/l)	PCBs (µg/l)	Lead (µg/l)	Arsenic (µg/l)
MW-1	2021-GW-101	7/21/21	ND	<0.1	<1	<1
	2021-GW-201	10/6/2021	ND	<0.1	<1	<1
	2021-GW-301	1/24/22	ND	<0.1	<1	<1
	2021-GW-302	1/24/22	ND	<0.1	<1	<1
MW-2	2021-GW-102	7/21/21	ND	<0.1	<1	<1
	2021-GW-202	10/6/2021	ND	<0.1	<1	<1
	2021-GW-303	1/24/22	ND	<0.1	<1	<1
MW-3	2021-GW-103	7/21/21	ND	<0.1	<1	<1
	2021-GW-203	10/6/2021	ND	<0.1	<1	<1
	2021-GW-204	10/6/2021	ND	<0.1	<1	<1
	2021-GW-304	1/24/22	ND	<0.1	<1	<1
MW-4	2021-GW-104	7/21/21	ND	<0.1	<1	<1
	2021-GW-205	10/6/2021	ND	<0.1	<1	<1
	2021-GW-305	1/24/22	ND	<0.1	<1	<1
MW-5	2021-GW-105	7/21/21	ND	<0.1	<1	<1
	2021-GW-106	7/21/21	ND	<0.1	<1	<1
	2021-GW-206	10/6/2021	ND	<0.1	<1	<1
	2021-GW-306	1/24/22	ND	<0.1	<1	<1
MW-6	2022-GW-407	4/8/22	ND	<0.1	<1	<1
MTCA Method A Cleanup Levels			**0.1**	**0.1**	**15**	**5**

Notes:
Concentrations listed in micrograms per liter (µg/l), or parts per billion (ppb).
MTCA = the Model Toxics Control Act regulation and the regulations promulgated thereunder (Washington Administrative Code, Chapter 173-340).
ND = Not Detected

Limitations

The findings of this report were based upon the results of field and laboratory investigations, coupled with the interpretation of surface and subsurface conditions associated with our water samples. Therefore, the data are accurate only to the degree implied by review of the data obtained and by professional interpretation.

A laboratory certified by the State of Washington, Department of Ecology, did the analytical testing. The results of the chemical testing are accurate only to the degree of care of ensuring the testing accuracy and the representative nature of the water samples obtained.

The findings presented herewith are based on professional interpretation using state of the art methods and equipment and a degree of conservatism deemed proper as of this report date. It is not warranted that such data cannot be superseded by future geotechnical, environmental, or technical developments.

We appreciate the opportunity to be of service. If you have any questions, or if we can be of further assistance, please do not hesitate to contact our office.

Respectfully Submitted,
Krazan & Associates, Inc.

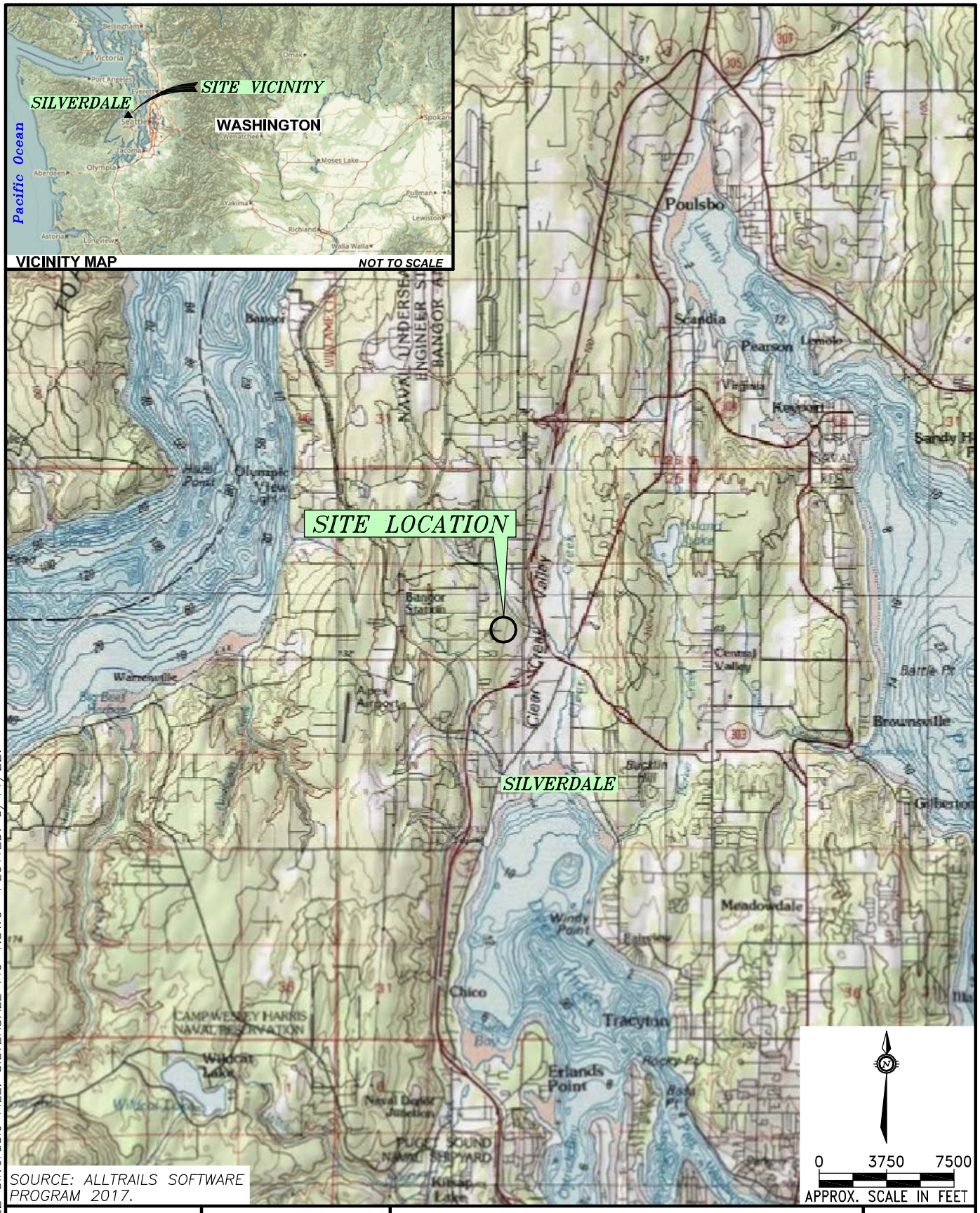
Shawn E. Williams, L.G.
Regional Environmental Manager

State of Washington
2208
Licensed Geologist
Shawn E. Williams

4/29/22

Attachments:

Figure 1. Vicinity Map
Figure 2. Site Map
Appendix A. MW-6 Monitoring Well Log and Groundwater Sampling Logs
Appendix B. Certified Analytical Results and Chain-of-Custody Record



SOURCE: ALLTRAILS SOFTWARE PROGRAM 2017.

DATE: MARCH 2022
REV.: –
CHKD: K.L.W
DRAWN: C.E.H.
PROJ. No.: 104-21020

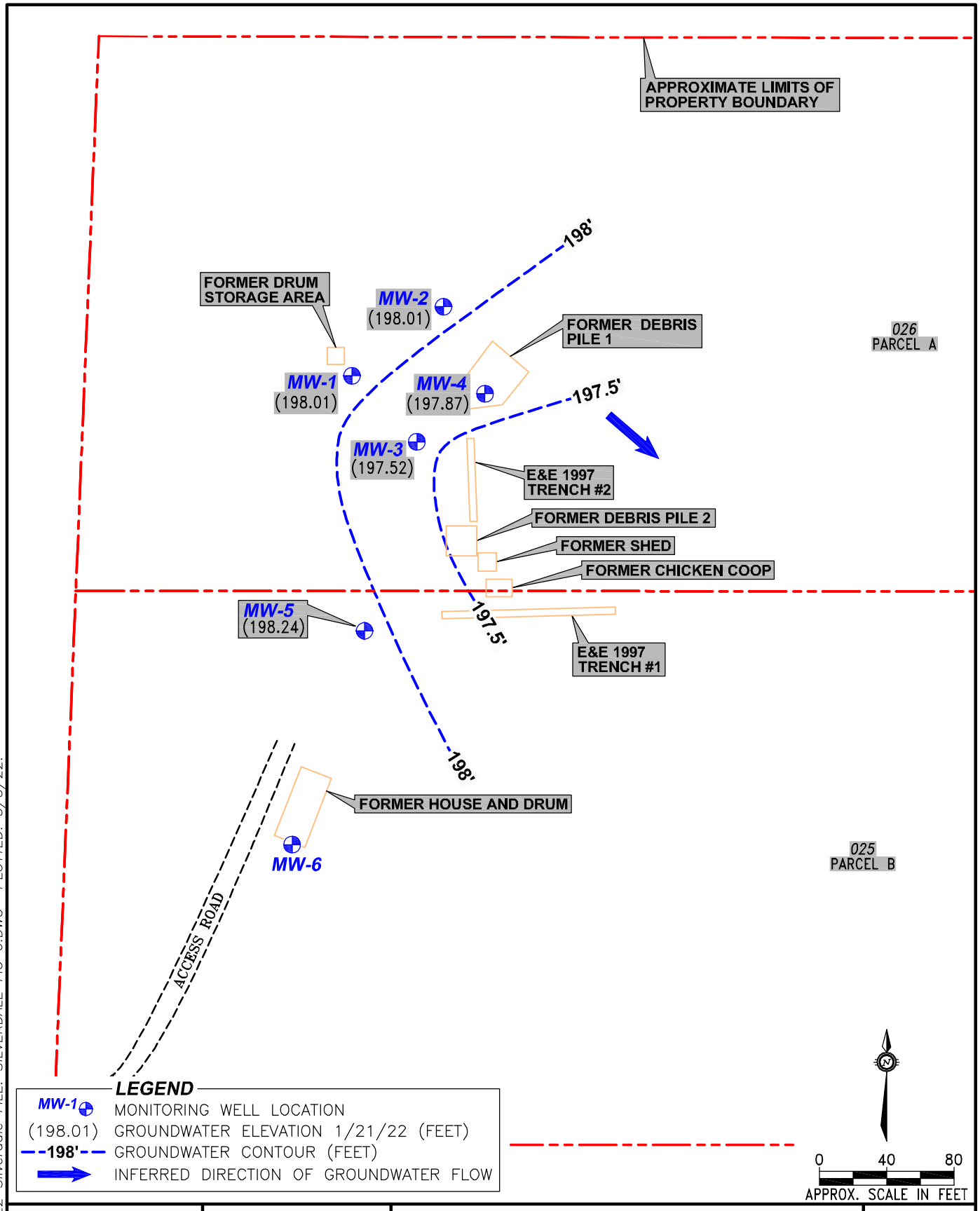
Krazan

SITE LOCATION MAP

JSP SILVERDALE LOTS 25 AND 26
Silverdale, Washington

FIGURE
1

22 Dwgs\22 ESC\22 Silverdale FILE: SILVERDALE FIG 1.DWG PLOTTED: 3/11/22.



22 Dwgs\22 ESC\22 Silverdale FILE: SILVERDALE FIG 6.DWG PLOTTED: 5/3/22.

DATE: MAY 2022
REV.: –
CHKD: K.L.W.
DRAWN: C.E.H.
PROJ. No.: 104-21020

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SITE PLAN

JSP SILVERDALE LOTS 25 AND 26
Silverdale, Washington

FIGURE
2

Appendix A

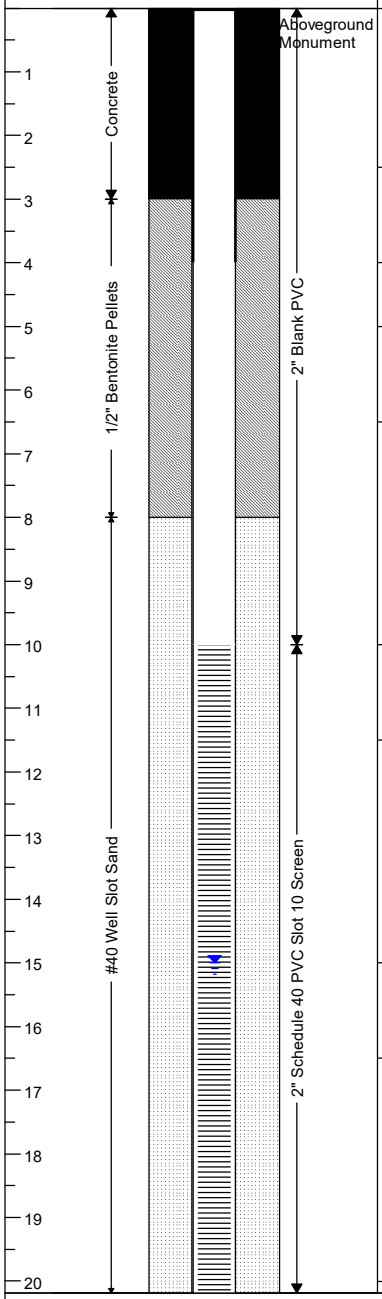
Project: Lots 25 and 26 | **Boring:** MW-6 | **Page:** 1 of 2

Drilling Co.: Holocene Drilling | **Drilling Method:** Hollow Stem Auger | **Date Installed:** 3/30/22

Well Tag No.: BNZ367 | **Sampler:** SPT | **Date Measured:** 4/08/22

Desc. of Meas Pt.: Top of Casing | **Logged By:** CB

Surface Elev.: 213.5' | **Meas. Pt. Elev.:** 217.26' | **Reviewed by:** SFW



DEPTH (ft)	BLOW COUNT	% RECOVERY	PID	SAMPLES	DESCRIPTION	NOTES
0					0-15.0' Dense, gray silty sand with gravel; moist	
3	50+	18"	0.2		Sample 2021-SB-53	Gasoline: ND Diesel: ND Motor Oil: ND BTEX: ND Lead: <5 Arsenic: <1 PAHs: ND PCBs: ND
5	50+	12"	0.1		Sample 2021-SB-54	Gasoline: ND Diesel: ND Motor Oil: ND BTEX: ND Lead: <5 Arsenic: <1 PAHs: ND PCBs: ND
10	50+	8"	0.6		Sample 2021-SB-55	Gasoline: ND Diesel: ND Motor Oil: ND BTEX: ND Lead: <5 Arsenic: 1.11 PAHs: ND PCBs: ND
15	44	18"	0		15.0'-26.5' Dense to very dense, brown-gray, medium to coarse sand; moist to saturated. Sample 2021-SB-56	Gasoline: ND Diesel: ND Motor Oil: ND BTEX: ND Lead: <5 Arsenic: 1.38 PAHs: ND PCBs: ND

Krazan & Associates

Lithologic Log and Well Construction Details

Client: Russell Square Consulting

Project Location: Silverdale, WA | **Project No.:** 104-21020

Project: Lots 25 and 26 | **Boring:** MW-6 | **Page:** 2 of 2

Drilling Co.: Holocene Drilling | **Drilling Method:** Hollow Stem Auger | **Date Installed:** 3/30/22

Well Tag No.: BNZ367 | **Sampler:** SPT | **Date Measured:** 4/08/22

Desc. of Meas Pt.: Top of Casing | **Logged By:** CB

Surface Elev.: 213.5' | **Meas. Pt. Elev.:** 217.26' | **Reviewed by:** SFW

WELL COMPLETION DETAILS	BLOW COUNT	% RECOVERY	PID	SAMPLES	DEPTH (ft)	GRAPHIC LOG	DESCRIPTION	NOTES
	50+	18"	0.1		21		15.0'-26.5' Dense to very dense, brown-gray, medium to coarse sand; moist to saturated. Sample 2021-SB-57	Gasoline: ND Diesel: ND Motor Oil: ND BTEX: ND Lead: <5 Arsenic: 1.56 PAHs: ND PCBs: ND
	45	18"	0.0		25		Sample 2021-SB-58	Gasoline: ND Diesel: ND Motor Oil: ND BTEX: ND Lead: <5 Arsenic: 1.21 PAHs: ND PCBs: ND

Krazan & Associates

Lithologic Log and Well Construction Details

Client: Russell Square Consulting

Project Location: Silverdale, WA | **Project No.:** 104-21020

Krazan

WATER SAMPLING LOG

Project Name: Lots 25 and 26 Project No.: 104-21020

Site Name: – Sample Location: MW-1

Inspector(s): C. Bartlett Date/Time: 4-8-22 10:50

Company: Krazan

Weather/Temperature: Sunny, 48° 52°

Well Data

Diameter of Well Casing (inches): 2-inches

Depth to Water Below Top of Casing (feet): 17.47 feet

Total Depth of Well Below Top of Casing (feet):

Product Thickness (feet): – Sampling/Purge Method: peristaltic pum

Calculate if well parameters do not stabilize per the work plan:

Length of Water Column in Well (feet): –

Liters per Foot: – Liters in Well: –

3 Times Casing Volume (liters): – Liters Purged from Well: –

Water Sample Data

Sample ID: 2022-GW-401 Time Sample Collected: 11:05

Remarks (Color/Odor): Clear Sheen on purge water? –

Stabilized? Yes 3 Casing Volumes Removed? –

Purge Vol. (liters)	Time (min)	pH (pH units)	Cond. (mS/cm)	Turbidity (NTU)	DO (mg/L)	Temp (C)	Salinity (%)	Redox (mv)
Criteria for three consecutive readings		±0.1 SU	±3%	±10% or <10 NTU	±10%	±10%	±10%	±10 mV
	10:55	7.03	16.5	24		9.4		

Notes: 0.0 ppm

Well Casing Volumes

Liters/Foot ½" = 0.04 1-1/4" = 0.24 2" = 0.62 3" = 1.39 4" = 2.47

1-1/2" = 0.35 2-1/2" = 0.97 3-1/2" = 1.89 6" = 5.56

Krazan

WATER SAMPLING LOG

Project Name: Lots 25 and 26 Project No.: 104-21020

Site Name: - Sample Location: MW-2

Inspector(s): C. Bartlett Date/Time: 4-8-22 10:05

Company:

Weather/Temperature: Sunny / 52°

Well Data

Diameter of Well Casing (inches): 2-inches

Depth to Water Below Top of Casing (feet): 10.70 feet

Total Depth of Well Below Top of Casing (feet): -

Product Thickness (feet): - Sampling/Purge Method: peristaltic pump

Calculate if well parameters do not stabilize per the work plan:

Length of Water Column in Well (feet): -

Liters per Foot: - Liters in Well: -

3 Times Casing Volume (liters): - Liters Purged from Well: -

Water Sample Data

Sample ID: 2022-GW-402, 403 Time Sample Collected: 10:20 am

Remarks (Color/Odor): N/A Sheen on purge water? N/A

Stabilized? Yes 3 Casing Volumes Removed? -

Purge Vol. (liters)	Time (min)	pH (pH units)	Cond. (mS/cm)	Turbidity (NTU)	DO (mg/L)	Temp (C)	Salinity (%)	Redox (mv)
Criteria for three consecutive readings		±0.1 SU	±3%	±10% or <10 NTU	±10%	±10%	±10%	±10 mV
	10:15	7.1	95.2	5		7.2		

Notes: 0.0ppm

Well Casing Volumes

Liters/Foot ½" = 0.04 1-1/4" = 0.24 2" = 0.62 3" = 1.39 4" = 2.47
1-1/2" = 0.35 2-1/2" = 0.97 3-1/2" = 1.89 6" = 5.56

Krazan

WATER SAMPLING LOG

Project Name: lots 25 and 26 Project No.: 104-21020

Site Name: – Sample Location: MW-3

Inspector(s): C. Bartlett Date/Time: 4-8-22 11:15

Company: Krazan

Weather/Temperature: Sunny 52°

Well Data

Diameter of Well Casing (inches): 2-inches

Depth to Water Below Top of Casing (feet): 13.93

Total Depth of Well Below Top of Casing (feet): –

Product Thickness (feet): – Sampling/Purge Method: peristaltic pump

Calculate if well parameters do not stabilize per the work plan:

Length of Water Column in Well (feet): –

Liters per Foot: – Liters in Well: –

3 Times Casing Volume (liters): – Liters Purged from Well: –

Water Sample Data

Sample ID: 2022-GW-404 Time Sample Collected: 11:20

Remarks (Color/Odor): clear Sheen on purge water? N/A

Stabilized? Yes 3 Casing Volumes Removed? N/A

Purge Vol. (liters)	Time (min)	pH (pH units)	Cond. (mS/cm)	Turbidity (NTU)	DO (mg/L)	Temp (C)	Salinity (%)	Redox (mv)
Criteria for three consecutive readings		±0.1 SU	±3%	±10% or <10 NTU	±10%	±10%	±10%	±10 mV
	11:20	7.1	112.4	20.2		9.0		

Notes: 0.0ppm

Well Casing Volumes

Liters/Foot ½" = 0.04 1-1/4" = 0.24 2" = 0.62 3" = 1.39 4" = 2.47

1-1/2" = 0.35 2-1/2" = 0.97 3-1/2" = 1.89 6" = 5.56

Krazan

WATER SAMPLING LOG

Project Name: Lots 25 and 26 Project No.: 101-21020

Site Name: — Sample Location: MW-4

Inspector(s): C.Bartlett Date/Time: 4-8-22 10:30

Company: Krazan

Weather/Temperature: Sunny 52°

Well Data

Diameter of Well Casing (inches): 2-inches

Depth to Water Below Top of Casing (feet): 9.61 feet

Total Depth of Well Below Top of Casing (feet): —

Product Thickness (feet): — Sampling/Purge Method: peristaltic pump

Calculate if well parameters do not stabilize per the work plan:

Length of Water Column in Well (feet): —

Liters per Foot: — Liters in Well: —

3 Times Casing Volume (liters): — Liters Purged from Well: —

Water Sample Data

Sample ID: 2022-GW-405 Time Sample Collected: 10:45

Remarks (Color/Odor): N/A Sheen on purge water? N/A

Stabilized? Yes 3 Casing Volumes Removed? N/A

Purge Vol. (liters)	Time (min)	pH (pH units)	Cond. (mS/cm)	Turbidity (NTU)	DO (mg/L)	Temp (C)	Salinity (%)	Redox (mv)
Criteria for three consecutive readings		±0.1 SU	±3%	±10% or <10 NTU	±10%	±10%	±10%	±10 mV
	10.35	6.7	120.2	6.7		6.2		

Notes: 0.0 ppm

Well Casing Volumes

Liters/Foot ½" = 0.04 1-1/4" = 0.24 2" = 0.62 3" = 1.39 4" = 2.47

1-1/2" = 0.35 2-1/2" = 0.97 3-1/2" = 1.89 6" = 5.56

Krazan

WATER SAMPLING LOG

Project Name: Lots 25 and 26 Project No.: 104-21020

Site Name: – Sample Location: MW-5

Inspector(s): C. Bartlett Date/Time: 11:30

Company: Krazan

Weather/Temperature: Sunny 45° 52°

Well Data

Diameter of Well Casing (inches): 2 inches

Depth to Water Below Top of Casing (feet): 15.72 feet

Total Depth of Well Below Top of Casing (feet): –

Product Thickness (feet): – Sampling/Purge Method: peristaltic pump

Calculate if well parameters do not stabilize per the work plan:

Length of Water Column in Well (feet): –

Liters per Foot: – Liters in Well: –

3 Times Casing Volume (liters): – Liters Purged from Well: –

Water Sample Data

Sample ID: 2022-GW-406 Time Sample Collected: 1140

Remarks (Color/Odor): clear Sheen on purge water? –

Stabilized? Yes 3 Casing Volumes Removed? –

Purge Vol. (liters)	Time (min)	pH (pH units)	Cond. (mS/cm)	Turbidity (NTU)	DO (mg/L)	Temp (C)	Salinity (%)	Redox (mv)
Criteria for three consecutive readings		±0.1 SU	±3%	±10% or <10 NTU	±10%	±10%	±10%	±10 mV
	1135	6.7	75.2	9.7		9.0		

Notes: 0.0ppm

Well Casing Volumes

Liters/Foot ½" = 0.04 1-1/4" = 0.24 2" = 0.62 3" = 1.39 4" = 2.47

1-1/2" = 0.35 2-1/2" = 0.97 3-1/2" = 1.89 6" = 5.56

Krazan

WATER SAMPLING LOG

Project Name: Lots 25 and 26 Project No.: 104-21020

Site Name: – Sample Location: MW-6

Inspector(s): C. Bartlett Date/Time: 11:50

Company: Krazan

Weather/Temperature: Sunny 52°

Well Data

Diameter of Well Casing (inches): 2-inches

Depth to Water Below Top of Casing (feet): 19.90

Total Depth of Well Below Top of Casing (feet): –

Product Thickness (feet): – Sampling/Purge Method: peristaltic pump

Calculate if well parameters do not stabilize per the work plan:

Length of Water Column in Well (feet): –

Liters per Foot: – Liters in Well: –

3 Times Casing Volume (liters): – Liters Purged from Well: –

Water Sample Data

Sample ID: 2022-GW-407 Time Sample Collected: 12:05

Remarks (Color/Odor): clear Sheen on purge water? –

Stabilized? Yes 3 Casing Volumes Removed? –

Purge Vol. (liters)	Time (min)	pH (pH units)	Cond. (mS/cm)	Turbidity (NTU)	DO (mg/L)	Temp (C)	Salinity (%)	Redox (mv)
Criteria for three consecutive readings		±0.1 SU	±3%	±10% or <10 NTU	±10%	±10%	±10%	±10 mV
	11:55	7.2	115.2	25.6		9.2		

Notes: 0.0 ppm

Well Casing Volumes

Liters/Foot ½" = 0.04 1-1/4" = 0.24 2" = 0.62 3" = 1.39 4" = 2.47

1-1/2" = 0.35 2-1/2" = 0.97 3-1/2" = 1.89 6" = 5.56

Appendix B

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Vineta Mills, M.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

April 7, 2022

Shawn Williams, Project Manager
Krazan & Associates (Poulsbo)
1230 Finn Hill Rd NW, Suite A
Poulsbo, WA 98370

Dear Mr Williams:

Included are the results from the testing of material submitted on March 30, 2022 from the Lot 25 and 26 Project 104-21020, F&BI 203549 project. There are 30 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Chloe Bartlett, Andrew Glenn
KZP0407R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on March 30, 2022 by Friedman & Bruya, Inc. from the Krazan & Associates (Poulsbo) Lot 25 and 26 Project 104-21020, F&BI 203549 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Krazan & Associates (Poulsbo)
203549 -01	2021-SB-53
203549 -02	2021-SB-54
203549 -03	2021-SB-55
203549 -04	2021-SB-56
203549 -05	2021-SB-57
203549 -06	2021-SB-58

All quality control requirements were acceptable.

Date of Report: 04/07/22
Date Received: 03/30/22
Project: Lot 25 and 26 Project 104-21020, F&BI 203549
Date Extracted: 04/04/22
Date Analyzed: 04/04/22

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES AND TPH AS GASOLINE USING METHODS 8021B AND NWTPH-Gx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
2021-SB-53 203549-01	<0.02	<0.02	<0.02	<0.06	<5	106
2021-SB-54 203549-02	<0.02	<0.02	<0.02	<0.06	<5	107
2021-SB-55 203549-03	<0.02	<0.02	<0.02	<0.06	<5	105
2021-SB-56 203549-04	<0.02	<0.02	<0.02	<0.06	<5	105
2021-SB-57 203549-05	<0.02	<0.02	<0.02	<0.06	<5	107
2021-SB-58 203549-06	<0.02	<0.02	<0.02	<0.06	<5	89
Method Blank 02-811 MB	<0.02	<0.02	<0.02	<0.06	<5	106

Date of Report: 04/07/22
Date Received: 03/30/22
Project: Lot 25 and 26 Project 104-21020, F&BI 203549
Date Extracted: 03/31/22
Date Analyzed: 03/31/22

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 48-168)
2021-SB-53 203549-01	<50	<250	97
2021-SB-54 203549-02	<50	<250	97
2021-SB-55 203549-03	<50	<250	96
2021-SB-56 203549-04	<50	<250	96
2021-SB-57 203549-05	<50	<250	97
2021-SB-58 203549-06	<50	<250	109
Method Blank 02-770 MB	<50	<250	96

Analysis For Total Metals By EPA Method 6020B

Client ID:	2021-SB-53	Client:	Krazan & Associates (Poulsbo)
Date Received:	03/30/22	Project:	Lot 25 and 26 Project 104-21020
Date Extracted:	04/01/22	Lab ID:	203549-01
Date Analyzed:	04/01/22	Data File:	203549-01.047
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	<1
Lead	<5

Analysis For Total Metals By EPA Method 6020B

Client ID:	2021-SB-54	Client:	Krazan & Associates (Poulsbo)
Date Received:	03/30/22	Project:	Lot 25 and 26 Project 104-21020
Date Extracted:	04/01/22	Lab ID:	203549-02
Date Analyzed:	04/01/22	Data File:	203549-02.050
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	<1
Lead	<5

Analysis For Total Metals By EPA Method 6020B

Client ID:	2021-SB-55	Client:	Krazan & Associates (Poulsbo)
Date Received:	03/30/22	Project:	Lot 25 and 26 Project 104-21020
Date Extracted:	04/01/22	Lab ID:	203549-03
Date Analyzed:	04/04/22	Data File:	203549-03.067
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.11
Lead	<5

Analysis For Total Metals By EPA Method 6020B

Client ID:	2021-SB-56	Client:	Krazan & Associates (Poulsbo)
Date Received:	03/30/22	Project:	Lot 25 and 26 Project 104-21020
Date Extracted:	04/01/22	Lab ID:	203549-04
Date Analyzed:	04/04/22	Data File:	203549-04.068
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.38
Lead	<5

Analysis For Total Metals By EPA Method 6020B

Client ID:	2021-SB-57	Client:	Krazan & Associates (Poulsbo)
Date Received:	03/30/22	Project:	Lot 25 and 26 Project 104-21020
Date Extracted:	04/01/22	Lab ID:	203549-05
Date Analyzed:	04/04/22	Data File:	203549-05.069
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.56
Lead	<5

Analysis For Total Metals By EPA Method 6020B

Client ID:	2021-SB-58	Client:	Krazan & Associates (Poulsbo)
Date Received:	03/30/22	Project:	Lot 25 and 26 Project 104-21020
Date Extracted:	04/01/22	Lab ID:	203549-06
Date Analyzed:	04/04/22	Data File:	203549-06.086
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.21
Lead	<5

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Krazan & Associates (Poulsbo)
Date Received:	NA	Project:	Lot 25 and 26 Project 104-21020
Date Extracted:	04/01/22	Lab ID:	I2-259 mb
Date Analyzed:	04/01/22	Data File:	I2-259 mb.042
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	<1
Lead	<5

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	2021-SB-53	Client:	Krazan & Associates (Poulsbo)
Date Received:	03/30/22	Project:	Lot 25 and 26 Project 104-21020
Date Extracted:	03/31/22	Lab ID:	203549-01 1/5
Date Analyzed:	03/31/22	Data File:	033108.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	74	39	103
Phenol-d6	82	48	109
Nitrobenzene-d5	83	23	138
2-Fluorobiphenyl	90	50	150
2,4,6-Tribromophenol	74	40	127
Terphenyl-d14	98	50	150

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	2021-SB-54	Client:	Krazan & Associates (Poulsbo)
Date Received:	03/30/22	Project:	Lot 25 and 26 Project 104-21020
Date Extracted:	03/31/22	Lab ID:	203549-02 1/5
Date Analyzed:	03/31/22	Data File:	033109.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	65	39	103
Phenol-d6	77	48	109
Nitrobenzene-d5	77	23	138
2-Fluorobiphenyl	86	50	150
2,4,6-Tribromophenol	73	40	127
Terphenyl-d14	91	50	150

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	2021-SB-55	Client:	Krazan & Associates (Poulsbo)
Date Received:	03/30/22	Project:	Lot 25 and 26 Project 104-21020
Date Extracted:	03/31/22	Lab ID:	203549-03 1/5
Date Analyzed:	03/31/22	Data File:	033110.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	74	39	103
Phenol-d6	82	48	109
Nitrobenzene-d5	83	23	138
2-Fluorobiphenyl	91	50	150
2,4,6-Tribromophenol	77	40	127
Terphenyl-d14	95	50	150

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	2021-SB-56	Client:	Krazan & Associates (Poulsbo)
Date Received:	03/30/22	Project:	Lot 25 and 26 Project 104-21020
Date Extracted:	03/31/22	Lab ID:	203549-04 1/5
Date Analyzed:	03/31/22	Data File:	033111.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	67	39	103
Phenol-d6	77	48	109
Nitrobenzene-d5	76	23	138
2-Fluorobiphenyl	82	50	150
2,4,6-Tribromophenol	74	40	127
Terphenyl-d14	87	50	150

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	2021-SB-57	Client:	Krazan & Associates (Poulsbo)
Date Received:	03/30/22	Project:	Lot 25 and 26 Project 104-21020
Date Extracted:	03/31/22	Lab ID:	203549-05 1/5
Date Analyzed:	03/31/22	Data File:	033112.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	73	39	103
Phenol-d6	84	48	109
Nitrobenzene-d5	81	23	138
2-Fluorobiphenyl	89	50	150
2,4,6-Tribromophenol	79	40	127
Terphenyl-d14	92	50	150

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	2021-SB-58	Client:	Krazan & Associates (Poulsbo)
Date Received:	03/30/22	Project:	Lot 25 and 26 Project 104-21020
Date Extracted:	03/31/22	Lab ID:	203549-06 1/5
Date Analyzed:	03/31/22	Data File:	033113.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	78	39	103
Phenol-d6	89	48	109
Nitrobenzene-d5	85	23	138
2-Fluorobiphenyl	93	50	150
2,4,6-Tribromophenol	83	40	127
Terphenyl-d14	100	50	150

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Method Blank	Client:	Krazan & Associates (Poulsbo)
Date Received:	Not Applicable	Project:	Lot 25 and 26 Project 104-21020
Date Extracted:	03/31/22	Lab ID:	02-767 mb 1/5
Date Analyzed:	03/31/22	Data File:	033110.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	82	24	111
Phenol-d6	95	37	116
Nitrobenzene-d5	102	38	117
2-Fluorobiphenyl	89	45	117
2,4,6-Tribromophenol	92	11	158
Terphenyl-d14	101	50	124

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	2021-SB-53	Client:	Krazan & Associates (Poulsbo)
Date Received:	03/30/22	Project:	Lot 25 and 26 Project 104-21020
Date Extracted:	04/01/22	Lab ID:	203549-01 1/6
Date Analyzed:	04/01/22	Data File:	040124.D
Matrix:	Soil	Instrument:	GC9
Units:	mg/kg (ppm) Dry Weight	Operator:	MG

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	72	23	120

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	<0.02
Aroclor 1262	<0.02
Aroclor 1268	<0.02

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	2021-SB-54	Client:	Krazan & Associates (Poulsbo)
Date Received:	03/30/22	Project:	Lot 25 and 26 Project 104-21020
Date Extracted:	04/01/22	Lab ID:	203549-02 1/6
Date Analyzed:	04/01/22	Data File:	040125.D
Matrix:	Soil	Instrument:	GC9
Units:	mg/kg (ppm) Dry Weight	Operator:	MG

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	68	23	120

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	<0.02
Aroclor 1262	<0.02
Aroclor 1268	<0.02

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	2021-SB-55	Client:	Krazan & Associates (Poulsbo)
Date Received:	03/30/22	Project:	Lot 25 and 26 Project 104-21020
Date Extracted:	04/01/22	Lab ID:	203549-03 1/6
Date Analyzed:	04/01/22	Data File:	040126.D
Matrix:	Soil	Instrument:	GC9
Units:	mg/kg (ppm) Dry Weight	Operator:	MG

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	67	23	120

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	<0.02
Aroclor 1262	<0.02
Aroclor 1268	<0.02

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	2021-SB-56	Client:	Krazan & Associates (Poulsbo)
Date Received:	03/30/22	Project:	Lot 25 and 26 Project 104-21020
Date Extracted:	04/01/22	Lab ID:	203549-04 1/6
Date Analyzed:	04/01/22	Data File:	040127.D
Matrix:	Soil	Instrument:	GC9
Units:	mg/kg (ppm) Dry Weight	Operator:	MG

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	61	23	120

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	<0.02
Aroclor 1262	<0.02
Aroclor 1268	<0.02

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	2021-SB-57	Client:	Krazan & Associates (Poulsbo)
Date Received:	03/30/22	Project:	Lot 25 and 26 Project 104-21020
Date Extracted:	04/01/22	Lab ID:	203549-05 1/6
Date Analyzed:	04/01/22	Data File:	040128.D
Matrix:	Soil	Instrument:	GC9
Units:	mg/kg (ppm) Dry Weight	Operator:	MG

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	60	23	120

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	<0.02
Aroclor 1262	<0.02
Aroclor 1268	<0.02

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	2021-SB-58	Client:	Krazan & Associates (Poulsbo)
Date Received:	03/30/22	Project:	Lot 25 and 26 Project 104-21020
Date Extracted:	04/01/22	Lab ID:	203549-06 1/6
Date Analyzed:	04/01/22	Data File:	040129.D
Matrix:	Soil	Instrument:	GC9
Units:	mg/kg (ppm) Dry Weight	Operator:	MG

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	72	23	120

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	<0.02
Aroclor 1262	<0.02
Aroclor 1268	<0.02

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	Method Blank	Client:	Krazan & Associates (Poulsbo)
Date Received:	Not Applicable	Project:	Lot 25 and 26 Project 104-21020
Date Extracted:	04/01/22	Lab ID:	02-826 mb 1/6
Date Analyzed:	04/01/22	Data File:	040117.D
Matrix:	Soil	Instrument:	GC9
Units:	mg/kg (ppm) Dry Weight	Operator:	MG

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	93	23	120

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	<0.02
Aroclor 1262	<0.02
Aroclor 1268	<0.02

Date of Report: 04/07/22
Date Received: 03/30/22
Project: Lot 25 and 26 Project 104-21020, F&BI 203549

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES, AND TPH AS GASOLINE USING EPA METHOD 8021B AND NWTPH-Gx

Laboratory Code: 203540-12 (Duplicate)

Analyte	Reporting Units	Sample Result (Wet Wt)	Duplicate Result (Wet Wt)	RPD (Limit 20)
Benzene	mg/kg (ppm)	<0.02	<0.02	nm
Toluene	mg/kg (ppm)	<0.02	<0.02	nm
Ethylbenzene	mg/kg (ppm)	<0.02	<0.02	nm
Xylenes	mg/kg (ppm)	<0.06	<0.06	nm
Gasoline	mg/kg (ppm)	<5	<5	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Benzene	mg/kg (ppm)	0.5	84	69-120
Toluene	mg/kg (ppm)	0.5	85	70-117
Ethylbenzene	mg/kg (ppm)	0.5	87	65-123
Xylenes	mg/kg (ppm)	1.5	87	66-120
Gasoline	mg/kg (ppm)	20	100	71-131

Date of Report: 04/07/22
Date Received: 03/30/22
Project: Lot 25 and 26 Project 104-21020, F&BI 203549

QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 203549-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	<50	118	112	73-135	5

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	112	74-139

Date of Report: 04/07/22
Date Received: 03/30/22
Project: Lot 25 and 26 Project 104-21020, F&BI 203549

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 203549-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	mg/kg (ppm)	10	<1	80	77	75-125	4
Lead	mg/kg (ppm)	50	<1	87	87	75-125	0

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	84	80-120
Lead	mg/kg (ppm)	50	100	80-120

Date of Report: 04/07/22
Date Received: 03/30/22
Project: Lot 25 and 26 Project 104-21020, F&BI 203549

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270E

Laboratory Code: 203535-01 1/5 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	mg/kg (ppm)	0.83	<0.01	79	84	34-118	6
2-Methylnaphthalene	mg/kg (ppm)	0.83	<0.01	85	89	29-130	5
1-Methylnaphthalene	mg/kg (ppm)	0.83	<0.01	83	87	37-119	5
Acenaphthylene	mg/kg (ppm)	0.83	<0.01	91	94	45-128	3
Acenaphthene	mg/kg (ppm)	0.83	<0.01	86	89	36-125	3
Fluorene	mg/kg (ppm)	0.83	<0.01	91	94	48-121	3
Phenanthrene	mg/kg (ppm)	0.83	<0.01	89	89	50-150	0
Anthracene	mg/kg (ppm)	0.83	<0.01	89	92	50-150	3
Fluoranthene	mg/kg (ppm)	0.83	<0.01	97	101	50-150	4
Pyrene	mg/kg (ppm)	0.83	<0.01	95	94	50-150	1
Benz(a)anthracene	mg/kg (ppm)	0.83	<0.01	93	96	50-150	3
Chrysene	mg/kg (ppm)	0.83	<0.01	89	92	50-150	3
Benzo(a)pyrene	mg/kg (ppm)	0.83	<0.01	97	100	50-150	3
Benzo(b)fluoranthene	mg/kg (ppm)	0.83	<0.01	100	99	50-150	1
Benzo(k)fluoranthene	mg/kg (ppm)	0.83	<0.01	92	98	50-150	6
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.83	<0.01	91	96	41-134	5
Dibenz(a,h)anthracene	mg/kg (ppm)	0.83	<0.01	87	93	44-130	7
Benzo(g,h,i)perylene	mg/kg (ppm)	0.83	<0.01	84	89	33-131	6

Laboratory Code: Laboratory Control Sample 1/5

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Naphthalene	mg/kg (ppm)	0.83	84	58-108
2-Methylnaphthalene	mg/kg (ppm)	0.83	88	67-108
1-Methylnaphthalene	mg/kg (ppm)	0.83	86	66-107
Acenaphthylene	mg/kg (ppm)	0.83	92	70-130
Acenaphthene	mg/kg (ppm)	0.83	88	66-112
Fluorene	mg/kg (ppm)	0.83	91	67-117
Phenanthrene	mg/kg (ppm)	0.83	90	70-130
Anthracene	mg/kg (ppm)	0.83	91	70-130
Fluoranthene	mg/kg (ppm)	0.83	96	70-130
Pyrene	mg/kg (ppm)	0.83	95	70-130
Benz(a)anthracene	mg/kg (ppm)	0.83	94	70-130
Chrysene	mg/kg (ppm)	0.83	92	70-130
Benzo(a)pyrene	mg/kg (ppm)	0.83	98	68-120
Benzo(b)fluoranthene	mg/kg (ppm)	0.83	102	69-125
Benzo(k)fluoranthene	mg/kg (ppm)	0.83	96	70-130
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.83	96	67-129
Dibenz(a,h)anthracene	mg/kg (ppm)	0.83	96	67-128
Benzo(g,h,i)perylene	mg/kg (ppm)	0.83	94	64-127

Date of Report: 04/07/22
Date Received: 03/30/22
Project: Lot 25 and 26 Project 104-21020, F&BI 203549

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR POLYCHLORINATED BIPHENYLS AS AROCLOR 1016/1260 BY EPA METHOD 8082A

Laboratory Code: 203549-01 1/6 (Matrix Spike) 1/6

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Percent Recovery MSD	Control Limits	RPD (Limit 20)
Aroclor 1016	mg/kg (ppm)	0.25	<0.02	94	96	44-107	2
Aroclor 1260	mg/kg (ppm)	0.25	<0.02	99	100	38-124	1

Laboratory Code: Laboratory Control Sample 1/6

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Aroclor 1016	mg/kg (ppm)	0.25	116	47-158
Aroclor 1260	mg/kg (ppm)	0.25	124	69-147

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

203549

SAMPLE CHAIN OF CUSTODY

BTS VS-AZ

Report To Shawn Williams
Company Krazan and Associates
Address 1230 Finn Hill Road NW, Suite A
City, State, ZIP Poulsbo, WA 98370
Phone 360-598-2126 Email shawnwilliams@krazan.com

SAMPLERS (signature) [signature] 03.30.22
PROJECT NAME Lots 25 and 26
Proj#: 104-21020
PO #
REMARKS
Project specific RLs? - Yes / No
INVOICE TO

Page # 1 of 1

TURNAROUND TIME
X Standard turnaround
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☐ Archive samples
☐ Other
Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	ANALYSES REQUESTED: NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	Lead	Arsenic			Notes
2021-SB-53	01 A-E	3/30/22	9:05	Soil	5	X	X	X			X	X	X	X			
2021-SB-54	02		9:10														
2021-SB-55	03		9:25														
2021-SB-56	04		9:32														
2021-SB-57	05		9:42														
2021-SB-58	06		9:53														

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	[signature]	Chloe Barrett	krazan		
Received by:	[signature]	Abbigail Corwin	PBI	3/30/22	1600
Relinquished by:					
Received by:			Samples received at 6 °C		

Friedman & Bruya, Inc.
Ph. (206) 285-8282

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
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April 19, 2022

Shawn Williams, Project Manager
Krazan & Associates (Poulsbo)
1230 Finn Hill Rd NW, Suite A
Poulsbo, WA 98370

Dear Mr Williams:

Included are the results from the testing of material submitted on April 11, 2022 from the Lots 25 and 26 Project 104-21020, F&BI 204131 project. There are 15 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
KZP0419R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on April 11, 2022 by Friedman & Bruya, Inc. from the Krazan & Associates (Poulsbo) Lots 25 and 26 Project 104-21020, F&BI 204131 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Krazan & Associates (Poulsbo)
204131 -01	2022-GW-401
204131 -02	2022-GW-402
204131 -03	2022-GW-403
204131 -04	2022-GW-404
204131 -05	2022-GW-405
204131 -06	2022-GW-406
204131 -07	2022-GW-407
204131 -08	Trip Blank

All quality control requirements were acceptable.

Date of Report: 04/19/22
Date Received: 04/11/22
Project: Lots 25 and 26 Project 104-21020, F&BI 204131
Date Extracted: 04/11/22
Date Analyzed: 04/12/22

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES AND TPH AS GASOLINE USING METHODS 8021B AND NWTPH-Gx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Gasoline Range	Surrogate (% Recovery) (Limit 52-124)
2022-GW-401 204131-01	<1	<1	<1	<3	<100	71
2022-GW-402 204131-02	<1	<1	<1	<3	<100	75
2022-GW-403 204131-03	<1	<1	<1	<3	<100	72
2022-GW-404 204131-04	<1	<1	<1	<3	<100	74
2022-GW-405 204131-05	<1	<1	<1	<3	<100	73
2022-GW-406 204131-06	<1	<1	<1	<3	<100	72
2022-GW-407 204131-07	<1	<1	<1	<3	<100	74
Method Blank 02-819 MB	<1	<1	<1	<3	<100	79

Date of Report: 04/19/22
Date Received: 04/11/22
Project: Lots 25 and 26 Project 104-21020, F&BI 204131
Date Extracted: 04/11/22
Date Analyzed: 04/11/22

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 41-152)
2022-GW-401 204131-01	<50	<250	113
2022-GW-402 204131-02	95 x	<250	118
2022-GW-403 204131-03	71 x	<250	117
2022-GW-404 204131-04	67 x	<250	143
2022-GW-405 204131-05	78 x	<250	116
2022-GW-406 204131-06	69 x	<250	125
2022-GW-407 204131-07	<50	<250	117
Method Blank 02-861 MB	<50	<250	121

Analysis For Total Metals By EPA Method 6020B

Client ID:	2022-GW-407	Client:	Krazan & Associates (Poulsbo)
Date Received:	04/11/22	Project:	Lots 25 and 26 Project 104-21020
Date Extracted:	04/12/22	Lab ID:	204131-07
Date Analyzed:	04/13/22	Data File:	204131-07.068
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1
Lead	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Krazan & Associates (Poulsbo)
Date Received:	NA	Project:	Lots 25 and 26 Project 104-21020
Date Extracted:	04/12/22	Lab ID:	I2-277 mb
Date Analyzed:	04/12/22	Data File:	I2-277 mb.042
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1
Lead	<1

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	2022-GW-407	Client:	Krazan & Associates (Poulsbo)
Date Received:	04/11/22	Project:	Lots 25 and 26 Project 104-21020
Date Extracted:	04/14/22	Lab ID:	204131-07 1/2
Date Analyzed:	04/14/22	Data File:	041414.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	41	11	65
Phenol-d6	28	11	65
Nitrobenzene-d5	84	50	150
2-Fluorobiphenyl	80	44	108
2,4,6-Tribromophenol	81	10	140
Terphenyl-d14	97	50	150

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.4
2-Methylnaphthalene	<0.4
1-Methylnaphthalene	<0.4
Acenaphthylene	<0.04
Acenaphthene	<0.04
Fluorene	<0.04
Phenanthrene	<0.04
Anthracene	<0.04
Fluoranthene	<0.04
Pyrene	<0.04
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04
Benzo(g,h,i)perylene	<0.08

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Method Blank	Client:	Krazan & Associates (Poulsbo)
Date Received:	Not Applicable	Project:	Lots 25 and 26 Project 104-21020
Date Extracted:	04/14/22	Lab ID:	02-915 mb
Date Analyzed:	04/14/22	Data File:	041411.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	23	11	65
Phenol-d6	14	11	65
Nitrobenzene-d5	83	50	150
2-Fluorobiphenyl	85	44	108
2,4,6-Tribromophenol	77	10	140
Terphenyl-d14	103	50	150

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.2
2-Methylnaphthalene	<0.2
1-Methylnaphthalene	<0.2
Acenaphthylene	<0.02
Acenaphthene	<0.02
Fluorene	<0.02
Phenanthrene	<0.02
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.04

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	2022-GW-407	Client:	Krazan & Associates (Poulsbo)
Date Received:	04/11/22	Project:	Lots 25 and 26 Project 104-21020
Date Extracted:	04/15/22	Lab ID:	204131-07
Date Analyzed:	04/15/22	Data File:	041513.D
Matrix:	Water	Instrument:	GC9
Units:	ug/L (ppb)	Operator:	MG

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	57	25	160

Compounds:	Concentration ug/L (ppb)
Aroclor 1221	<0.1
Aroclor 1232	<0.1
Aroclor 1016	<0.1
Aroclor 1242	<0.1
Aroclor 1248	<0.1
Aroclor 1254	<0.1
Aroclor 1260	<0.1
Aroclor 1262	<0.1
Aroclor 1268	<0.1

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	Method Blank	Client:	Krazan & Associates (Poulsbo)
Date Received:	Not Applicable	Project:	Lots 25 and 26 Project 104-21020
Date Extracted:	04/15/22	Lab ID:	02-954 mb
Date Analyzed:	04/15/22	Data File:	041512.D
Matrix:	Water	Instrument:	GC9
Units:	ug/L (ppb)	Operator:	MG

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	54	25	160

Compounds:	Concentration ug/L (ppb)
Aroclor 1221	<0.1
Aroclor 1232	<0.1
Aroclor 1016	<0.1
Aroclor 1242	<0.1
Aroclor 1248	<0.1
Aroclor 1254	<0.1
Aroclor 1260	<0.1
Aroclor 1262	<0.1
Aroclor 1268	<0.1

Date of Report: 04/19/22
Date Received: 04/11/22
Project: Lots 25 and 26 Project 104-21020, F&BI 204131

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES, AND TPH AS GASOLINE USING EPA METHOD 8021B AND NWTPH-Gx

Laboratory Code: 204117-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
Benzene	ug/L (ppb)	<1	<1	nm
Toluene	ug/L (ppb)	<1	<1	nm
Ethylbenzene	ug/L (ppb)	<1	<1	nm
Xylenes	ug/L (ppb)	<3	<3	nm
Gasoline	ug/L (ppb)	<100	<100	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Benzene	ug/L (ppb)	50	95	65-118
Toluene	ug/L (ppb)	50	92	72-122
Ethylbenzene	ug/L (ppb)	50	99	73-126
Xylenes	ug/L (ppb)	150	96	74-118
Gasoline	ug/L (ppb)	1,000	88	69-134

Date of Report: 04/19/22
Date Received: 04/11/22
Project: Lots 25 and 26 Project 104-21020, F&BI 204131

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	96	88	63-142	9

Date of Report: 04/19/22
Date Received: 04/11/22
Project: Lots 25 and 26 Project 104-21020, F&BI 204131

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 204136-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	ug/L (ppb)	10	<1	94	90	75-125	4
Lead	ug/L (ppb)	10	3.25	97	94	75-125	3

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	89	80-120
Lead	ug/L (ppb)	10	94	80-120

Date of Report: 04/19/22
Date Received: 04/11/22
Project: Lots 25 and 26 Project 104-21020, F&BI 204131

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270E

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	ug/L (ppb)	5	86	83	62-90	4
2-Methylnaphthalene	ug/L (ppb)	5	89	88	64-93	1
1-Methylnaphthalene	ug/L (ppb)	5	88	87	64-93	1
Acenaphthylene	ug/L (ppb)	5	96	96	70-130	0
Acenaphthene	ug/L (ppb)	5	93	94	70-130	1
Fluorene	ug/L (ppb)	5	97	98	70-130	1
Phenanthrene	ug/L (ppb)	5	97	97	70-130	0
Anthracene	ug/L (ppb)	5	100	102	70-130	2
Fluoranthene	ug/L (ppb)	5	104	108	70-130	4
Pyrene	ug/L (ppb)	5	103	101	70-130	2
Benz(a)anthracene	ug/L (ppb)	5	99	100	70-130	1
Chrysene	ug/L (ppb)	5	100	101	70-130	1
Benzo(a)pyrene	ug/L (ppb)	5	106	108	70-130	2
Benzo(b)fluoranthene	ug/L (ppb)	5	106	105	70-130	1
Benzo(k)fluoranthene	ug/L (ppb)	5	104	109	70-130	5
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	5	105	107	70-130	2
Dibenz(a,h)anthracene	ug/L (ppb)	5	104	109	70-130	5
Benzo(g,h,i)perylene	ug/L (ppb)	5	103	110	70-130	7

Date of Report: 04/19/22
Date Received: 04/11/22
Project: Lots 25 and 26 Project 104-21020, F&BI 204131

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR POLYCHLORINATED BIPHENYLS AS AROCLOR 1016/1260 BY EPA METHOD 8082A

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Aroclor 1016	ug/L (ppb)	0.25	72	78	25-165	8
Aroclor 1260	ug/L (ppb)	0.25	71	84	25-163	17

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

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SAMPLE CHAIN OF CUSTODY

E03 AI1 VW4

Page # 1 of 1

Report To Shawn Williams
Company Krazan and Associates
Address 1230 NW Finn Hill Road, Suite A
City, State, ZIP Poulsbo, WA 98370
Phone 360-598-2126 Email shawnwilliams@krazan.com

SAMPLERS (signature) 04-09-22
PROJECT NAME Lots 25 and 26 Proj # 104-21020
PO #
REMARKS
Project specific RLs? - Yes / No
INVOICE TO

TURNAROUND TIME
☒ Standard turnaround
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☐ Archive samples
☐ Other
Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	ANALYSES REQUESTED: NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082		Lead/Arsenic			Notes
2022-GW-401	01 A-D	4/8/22	11:05am	water	4	X	X	X									
2022-GW-402	02		10:20 am		4	X	X	X									
2022-GW-403	03		10:20am		4	X	X	X									
2022-GW-404	04		10:25am		4	X	X	X									
2022-GW-405	05		10:45am		4	X	X	X									
2022-GW-406	06		11:40am		4	X	X	X									
2022-GW-407	07 A-G		12:05pm		7	X	X	X			X	X		X			
Trip Blank	08 A-B			water	2												

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Chloe Bartlett	Krazan		
Received by:	Abbigail Corwen	PBJ	4/09/22	1400
Relinquished by:				
Received by:				

Samples received at 4 °C

Friedman & Bruya, Inc.
Ph. (206) 285-8282