

B&L Woodwaste Site

**West Boundary
Soil Investigation Report**

Prepared for

B&L Custodial Trust
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November 2020

Certified



Corporation



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Paper

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LIMITATIONS

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List of Acronyms and Abbreviations

Acronym/ Abbreviation	Definition
2008 CAP	2008 Cleanup Action Plan
bgs	Below ground surface
CUL	Cleanup level
Ecology	Washington State Department of Ecology
mg/kg	Milligrams per kilogram
MTCA	Model Toxics Control Act
Site	B&L Woodwaste Site
UCL	Upper confidence limit
USEPA	U.S. Environmental Protection Agency
Work Plan	West Boundary Soil Investigation Work Plan

1.0 Introduction

This report presents the results of a soil investigation at the B&L Woodwaste Site (Site), in Pierce County, Washington, shown on Figure 1.1. The Site includes a former woodwaste landfill and surrounding areas affected by arsenic contamination from copper smelter slag that was placed in the former landfill. The B&L Woodwaste Custodial Trust is currently implementing the long-term operations and monitoring phase of the 2008 Cleanup Action Plan (2008 CAP) at the Site following implementation of active remediation phases of the 2008 CAP under the terms of Consent Decree No. 082106107 (Ecology 2008).

As summarized in the West Boundary Soil Investigation Work Plan (Work Plan; Floyd|Snider 2020), remediation has included excavation of arsenic-impacted ditch sediments and bank soils in the west ditch, excavation and shallow soil mixing of arsenic-impacted soil in the agricultural field in 2012, and a 2015 ditch bank excavation of two areas that exceeded the Site cleanup level (CUL) of 20 milligrams per kilogram (mg/kg) after the 2012 cleanup. One of these ditch bank areas was located on the agricultural field side of the ditch on the western edge of the landfill, as shown on Figure 1.2. Verification sampling results demonstrate compliance with the CUL under the Model Toxics Control Act (MTCA), with a small number of soil samples representing soil left in place that exceed the arsenic CUL of 20 mg/kg and one sample left in place to protect groundwater recovery infrastructure that will be removed when these remedial components are removed from the Washington State Department of Transportation property.

The 2020 investigation consisted of soil boring advancement and sample collection to investigate the concentration of arsenic in soil along the west boundary of the B&L Woodwaste landfill east of the ditch and a limited area in the agricultural field adjacent to the landfill. The purpose of this investigation was to determine if soil with elevated concentrations of arsenic is present that may be acting as source material for groundwater contamination that still exists near the west boundary of the landfill, in particular between monitoring wells D-7A and D-8A, and near the monitoring well MW-33 in the agricultural field to the west of the landfill.

The results are expected to be used to assess whether an additional soil removal action would be beneficial in reducing arsenic concentrations in groundwater.

2.0 Soil Boring and Sampling Activities

This soil investigation was completed between August 12 and 18, 2020, by collecting soil samples with direct-push drilling methods. Boring locations are shown on Figure 1.2. Boring logs are included in Appendix A.

Property access, utility clearance, boring advancement, and sample collection and analysis were conducted in accordance with the Work Plan (Floyd|Snider 2020) and the procedures described in the Sampling and Analysis Plan/Quality Assurance Project Plan (Appendix B to the Groundwater Remediation Work Plan; Floyd|Snider and AMEC 2009) with minor deviations discussed in Sections 2.1 and 2.2.

2.1 WESTERN BOUNDARY AREA

Between August 12 and 18, 2020, 15 direct-push borings (B-1 through B-15) were advanced along the western boundary of the landfill on the berm between the fence line and stormwater pond. The borings were spaced approximately 20 feet apart between monitoring wells D-7A and D-8A. Soil samples were collected in 1- to 2-foot intervals from 7 to 13 feet below ground surface (bgs). Soil samples collected from 7 to 8 feet bgs, 9 to 10 feet bgs, and 12 to 13 feet bgs were submitted to Friedman & Bruya, Inc., for analysis of arsenic by U.S. Environmental Protection Agency (USEPA) Method 6020B. In coordination with the Washington State Department of Ecology (Ecology), additional samples were collected from 8 to 9 feet bgs and 10 to 12 feet bgs and archived for potential follow-up analysis.

Soil borings along the western boundary were advanced through the top 4 or 5 feet bgs with no soil collection in order to push through the stormwater pond berm, which is approximately 6 feet of low permeability fill. The native soil below the fill consists of poorly graded sands. Soils were observed for the presence of wood waste or slag, but neither were observed in any boring. Naturally occurring wood was noted at 8 feet bgs in boring B-5 and at 10 to 11 feet bgs in boring B-7. Photographs of soil borings are included in Appendix B.

Direct push drilling was originally attempted at borings B-1 through B-6 with a 54LT drill rig; however, the subsurface was more gravelly than anticipated, which limited soil recovery. A larger drill rig (Geoprobe 7822D) was used to complete the remaining borings, which improved recovery of the borings. However, soil recovery was still limited at locations B-1 and B-3 when they were redrilled with the larger drill rig, so the sample intervals were modified based on recovered soil. Multiple attempts were made to maximize recovery. Refer to the boring logs in Appendix A for specific recovery information. There were no other deviations to the Work Plan during sampling activities at the western boundary of the landfill.

2.2 MW-33 AREA

On August 18, 2020, four direct-push borings (B-16 through B-19) were advanced directly adjacent to and around monitoring well MW-33 in the agricultural field west of the landfill. One boring was advanced within 5 feet of MW-33 and the other three borings were advanced

approximately 25 feet to the west, east, and south of MW-33. Soil samples were collected in 1- to 2-foot intervals from 0 to 6 feet bgs. Per the Work Plan, soil samples were collected from 0 to 1 foot bgs, 2 to 3 feet bgs, and 5 to 6 feet bgs and submitted to Friedman & Bruya, Inc., for analysis of arsenic by USEPA Method 6020B.

Soil borings were advanced continuously from 0 to 6 feet bgs. Soil in this area consists of fine sand overlain by silty, clayey, and peaty deposits. No slag or wood waste associated with the landfill was observed in any boring. Photographs of soil borings are included in Appendix B.

In coordination with Ecology, additional samples were collected from 1 to 2 feet bgs and 3 to 5 feet bgs at borings B-16 through B-19 and archived for potential follow-up analysis. There were no other deviations to the Work Plan during sampling activities at the MW-33 area.

3.0 Results

3.1 DATA VALIDATION

A Compliance Screening (Stages 1 & 2A) data quality review was performed on arsenic data resulting from laboratory analysis. The analytical data were validated in accordance with the *National Functional Guidelines for Inorganic Superfund Methods Data Review* (USEPA 2017).

A total of 102 soil samples were submitted in one sample delivery group, 008266, to Friedman & Bruya, Inc., for chemical analysis by USEPA 6020B. A total of 63 samples were analyzed, and the remaining 39 were archived. The analytical holding times were met, and the method blanks had no detections. The matrix spike, matrix spike duplicate, and laboratory control sample recoveries and matrix spike/matrix spike duplicate relative percent differences all met USEPA requirements.

No qualifiers were added to the analytical results based on the data quality review. Data are determined to be of acceptable quality for use as reported by the laboratory, with some laboratory qualifiers being updated to conform to the final qualifiers used for data table reporting and database storage.

3.2 SOIL SAMPLING RESULTS

Analytical results for arsenic concentrations in soil are presented in Table 3.1 and Figure 1.2. Of the 67 total samples analyzed, only five samples resulted in low-level exceedances of the Site CUL of 20 mg/kg. The analytical laboratory report is included in Appendix C.

3.2.1 Western Boundary Area

Fifty-one soil samples were analyzed for arsenic from the western boundary of the landfill generally between monitoring wells D-7A and D-8A. Detected arsenic concentrations ranged from 1.15 to 26.5 mg/kg. The highest detection (26.5 mg/kg) was collected from 7 to 8 feet bgs at boring B-9 and is the only sample from the western boundary area that exceeded the arsenic CUL of 20 mg/kg.

The 7- to 8-foot-bgs sample interval is near the native soil contact with the berm fill material, and it is approximately equivalent to the elevation of the bottom of the West Ditch. Location B-9 is across the West Ditch from the ditch bank area that was excavated in 2015 to remove elevated concentrations of arsenic in shallow soil (refer to Figure 1.2). The single exceedance of the CUL at B-9 may be associated with the edge of this former “hotspot” area. The results from surrounding western boundary area locations, however, are consistent with the prior verification sampling indicating that the area has been sufficiently remediated. The results provide no indication of a local soil source for arsenic contamination in groundwater at D-8A or D-7A, although the soil between the property boundary and the barrier wall was not investigated.

3.2.2 MW-33 Area

Sixteen soil samples were analyzed for arsenic from the four borings advanced in the MW-33 area, B-16, B-17, B-18, and B-19. Detected arsenic concentrations ranged from 2.36 to 29.5 mg/kg. Four samples, the surficial soil sample from each boring that was collected from between 0 to 1 foot bgs, exceeded the Site CUL of 20 mg/kg. Concentrations of the exceedances ranged from 20.9 to 29.5 mg/kg.

Based on the pattern of higher concentrations in shallow soil and no exceedances at depths corresponding to the adjacent ditch sidewalls and bottom, these results suggest that the source of the elevated arsenic was deposition of sediment during flooding events. This area of the agricultural field frequently floods during the wet season, and contamination was likely transferred from the ditch into the field prior to ditch remediation completed in 2012. The ditch sediments are no longer a source of arsenic contamination to shallow soils in the agricultural field. As shown on Figure 1.2, these four soil borings showing low-level exceedances of the CULs in shallow soil appear to represent an area between the previous verification sampling locations and are generally consistent with the results of verification sampling indicating that the area has been sufficiently remediated.

4.0 Conclusions

The results of this investigation provide further confirmation that remediation has sufficiently removed elevated arsenic from soil in accordance with Site CULs and MTCA requirements described in WAC 173-340-740(7)(c)(iv)(A). The addition of five low-level exceedances and 62 samples with concentrations less than CULs support the outcome of the previous statistical demonstration of compliance under MTCA, which found that the 95% upper confidence limit (UCL) for arsenic was 10.3 mg/kg, which is less than the 20 mg/kg CUL (Floyd|Snider 2016). An updated 95% UCL for soil arsenic, calculated using MTCASat with inclusion of the 2020 results, is calculated to be 7.5 mg/kg. The 2020 soil results are also consistent with other applicable MTCA conditions for demonstrating compliance: None of the five exceedances are more than 2 times the CUL, and the total number of exceedances (five new exceedances plus six prior exceedances) does not exceed 10% of the total number of samples (67 new samples and 65 previous samples total 132 samples). Updated statistical evaluation output is provided in Appendix D.

The results suggest several factors to be considered in assessing the potential effect of removing additional soil on groundwater arsenic concentrations. These include the relatively low arsenic concentrations, the limited extent of exceedances, the shallow depth of the exceedances, and the overall limited potential for transfer of arsenic to groundwater. The majority of the samples in the agricultural field, ditch bank, and western boundary area are considerably less than the CUL and apparently consistent with natural background concentrations for the area. As summarized on Figure 1.2, with the exception of B-9 and WD-400', exceedances of arsenic in soil are limited to the upper 12 inches in the vicinity of MW-33 and the upper 24 inches in the vicinity of MW-42/R-15 and R-14. The elevated arsenic left in place at WD-25'N-C is the highest arsenic concentration (69.7 mg/kg) and deepest (18 to 24 inches bgs) of the samples, and the impacted soil will be removed during decommissioning of the groundwater recovery wells in the agricultural field.

Decreasing groundwater arsenic concentrations in agricultural field monitoring wells and the lack of elevated arsenic concentrations in soil below the surface samples both suggest there is limited transfer of arsenic by infiltration from the areas in which shallow soil exceeds CULs to groundwater. The remaining excess mass of arsenic in soil may contribute to exceedances of the 5 micrograms per liter groundwater CUL, but the plume beneath the agricultural field originated at the landfill and is expected to continue to attenuate over time.

5.0 References

- Washington State Department of Ecology (Ecology). 2008. Consent Decree No. 082106107. 24 July.
- Floyd|Snider. 2016. *B&L Woodwaste Site Ditch Bank Excavation Construction Completion Report*. March.
- _____. 2020. *West Boundary Soil Investigation Work Plan*. Memorandum from Pamela Osterhout and Brett Beaulieu, Floyd|Snider, to Mohsen Kourehdar, Washington State Department of Ecology. 28 April.
- Floyd|Snider and AMEC Geomatrix (Floyd|Snider and AMEC). 2009. *B&L Woodwaste Site Groundwater Remediation Work Plan*. January.
- _____. 2013. *B&L Woodwaste Site, Pierce County, Washington, Phase 2 Part 2 Construction Completion Report*. January.
- U.S. Environmental Protection Agency (USEPA). 2017. *National Functional Guidelines for Inorganic Superfund Methods Data Review*. Prepared by the Office of Superfund Remediation and Technology Innovation. EPA-540-R-2017-001/OLEM 9355.0-135. January.

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Soil Investigation Report

Table

Table 3.1
August 2020 Soil Arsenic Results

				Analyte	Arsenic
				Unit	mg/kg
				Site Cleanup Level	20
Location Name	Field Sample ID	Sample Date	Depth Range (feet)		
Western Boundary					
B-1	B-1-7-7.5	08/12/2020	7-7.5		2.08
	B-1-8-9	08/18/2020	8-9		--
	B-1-9-10	08/18/2020	9-10		1.15
	B-1-10-12	08/18/2020	10-12		--
	B-1-11-12	08/12/2020	11-12		--
	B-1-12-13	08/12/2020	12-13		1.33
	<i>B-101-12-13</i>	08/18/2020	12-13		1.55
B-2	B-2-7-8	08/12/2020	7-8		2.39
	B-2-8-9	08/12/2020	8-9		--
	B-2-9-10	08/12/2020	9-10		1.64
	B-2-10-11	08/12/2020	10-11		--
	B-2-11-12	08/12/2020	11-12		1.00 U
B-3	B-3-7.5-8	08/12/2020	7.5-8		2.08
	B-3-8-9	08/12/2020	8-9		--
	<i>B-103-8-9</i>	08/18/2020	8-9		--
	B-3-9-10	08/12/2020	9-10		2.38
	B-3-10-12	08/12/2020	10-12		--
	B-3-12-13	08/12/2020	12-13		1.38
B-4	B-4-7.5-8	08/17/2020	7.5-8		8.53
	B-4-8-9	08/17/2020	8-9		--
	B-4-9-10	08/17/2020	9-10		2.36
	B-4-10-12	08/17/2020	10-12		--
	B-4-12-13	08/17/2020	12-13		1.00 U
B-5	B-5-7-8	08/12/2020	7-8		1.65
	B-5-8-9	08/12/2020	8-9		--
	B-5-9-10	08/12/2020	9-10		2.89
	B-5-10-12	08/12/2020	10-12		--
	B-5-12-13	08/12/2020	12-13		2.30
B-6	B-6-7-8	08/17/2020	7-8		5.65
	B-6-8-9	08/17/2020	8-9		--
	B-6-9-10	08/17/2020	9-10		3.87
	B-6-10-12	08/17/2020	10-12		--
	B-6-12-13	08/17/2020	12-13		5.19
B-7	B-7-7-8	08/17/2020	7-8		3.21
	B-7-8-9	08/17/2020	8-9		--
	B-7-9-10	08/17/2020	9-10		1.52
	B-7-11-12	08/17/2020	11-12		--
	<i>B-107-11-12</i>	08/17/2020	11-12		--
	B-7-12-13	08/17/2020	12-13		2.01
	<i>B-107-12-13</i>	08/17/2020	12-13		2.01

Table 3.1
August 2020 Soil Arsenic Results

				Analyte	Arsenic
				Unit	mg/kg
				Site Cleanup Level	20
Location Name	Field Sample ID	Sample Date	Depth Range (feet)		
Western Boundary (cont.)					
B-8	B-8-7-8	08/17/2020	7-8		2.35
	B-8-8-9	08/17/2020	8-9		--
	B-8-9-10	08/17/2020	9-10		5.24
	B-8-10-11	08/17/2020	10-11		--
	B-8-12-13	08/17/2020	12-13		1.34
B-9	B-9-7-8	08/17/2020	7-8		26.5
	B-9-8-9	08/17/2020	8-9		7.57
	B-9-9-10	08/17/2020	9-10		3.22
	<i>B-109-9-10</i>	08/17/2020	9-10		2.99
	B-9-10-12	08/17/2020	10-12		1.31
	B-9-12-13	08/17/2020	12-13		1.32
B-10	B-10-7-8	08/17/2020	7-8		3.27
	B-10-8-9	08/17/2020	8-9		--
	B-10-9-10	08/17/2020	9-10		1.54
	B-10-10-12	08/17/2020	10-12		--
	B-10-12-13	08/17/2020	12-13		2.00
B-11	B-11-7-8	08/18/2020	7-8		5.51
	B-11-8-9	08/18/2020	8-9		--
	B-11-9-10	08/18/2020	9-10		1.18
	B-11-10-12	08/18/2020	10-12		--
	B-11-12-13	08/18/2020	12-13		1.34
B-12	B-12-7-8	08/18/2020	7-8		12.2
	B-112-7-8	08/18/2020	7-8		16.8
	B-12-8-9	08/18/2020	8-9		--
	B-12-9-10	08/18/2020	9-10		1.78
	B-12-10-12	08/18/2020	10-12		--
	B-12-12-13	08/18/2020	12-13		1.25
B-13	B-13-7-8	08/18/2020	7-8		1.97
	B-13-8-9	08/18/2020	8-9		--
	B-13-9-10	08/18/2020	9-10		1.00 U
	B-13-10-12	08/18/2020	10-12		--
	B-13-12-13	08/18/2020	12-13		1.47
B-14	B-14-7-8	08/18/2020	7-8		6.00
	B-14-8-9	08/18/2020	8-9		--
	B-14-9-10	08/18/2020	9-10		2.56
	B-14-10-12	08/18/2020	10-12		--
	B-14-12-13	08/18/2020	12-13		2.56
B-15	B-15-7-8	08/18/2020	7-8		5.64
	B-15-8-9	08/18/2020	8-9		--
	B-15-9-10	08/18/2020	9-10		4.36
	B-15-10-12	08/18/2020	10-12		--
	B-15-12-13	08/18/2020	12-13		2.41

**Table 3.1
August 2020 Soil Arsenic Results**

Analyte				Arsenic
Unit				mg/kg
Site Cleanup Level				20
Location Name	Field Sample ID	Sample Date	Depth Range (feet)	
MW-33 Area				
B-16	B-16-0-1	08/18/2020	0-1	23.5
	B-16-1-2	08/18/2020	1-2	10.4
	B-16-2-3	08/18/2020	2-3	2.53
	B-16-3-5	08/18/2020	3-5	--
	B-16-5-6	08/18/2020	5-6	2.36
B-17	B-17-0-1	08/18/2020	0-1	29.5
	B-17-1-2	08/18/2020	1-2	10.5
	B-17-2-3	08/18/2020	2-3	2.56
	B-17-3-5	08/18/2020	3-5	--
	B-17-5-6	08/18/2020	5-6	1.00 U
B-18	B-18-0-1	08/18/2020	0-1	23.5
	B-18-1-2	08/18/2020	1-2	11.8
	B-18-2-3	08/18/2020	2-3	2.87
	B-18-3-5	08/18/2020	3-5	--
	B-18-5-6	08/18/2020	5-6	2.80
B-19	B-19-0-1	08/18/2020	0-1	20.9
	B-19-1-2	08/18/2020	1-2	11.0
	B-19-2-3	08/18/2020	2-3	4.39
	B-19-3-5	08/18/2020	3-5	--
	B-19-5-6	08/18/2020	5-6	6.76

Notes:

All results rounded to three significant figures.

Sample result exceeds site cleanup level of 20 mg/kg.

italics Field duplicate.

-- No data. Sample was archived.

Abbreviation:

mg/kg Milligrams per kilogram

Qualifier:

U Analyte was not detected at the given reporting limit.

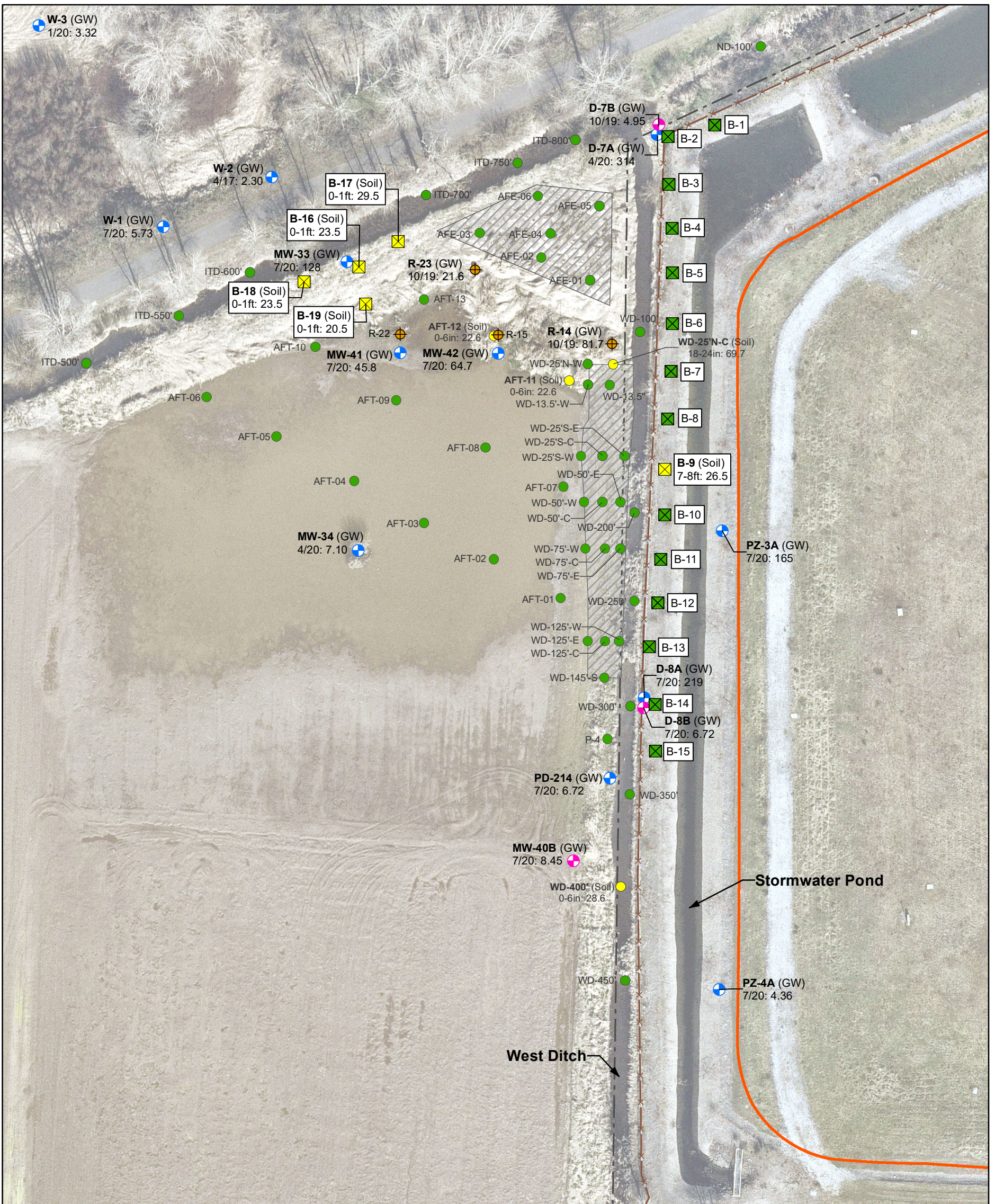
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Figures





Legend

- August 2020 Soil Sample Location Where Arsenic >20 mg/kg
- August 2020 Soil Sample Location Where Arsenic ≤20 mg/kg
- Previous Soil Sample Location Where Arsenic >20 mg/kg
- Previous Soil Sample Location Where Arsenic ≤20 mg/kg
- ⊕ Upper Sand Aquifer Monitoring Location
- ⊕ Lower Sand Aquifer Monitoring Location
- ⊕ Recovery Well Location
- Ditch Bank (2015) or Agricultural Field (2012) Excavation Extent; Ditch Excavations Not Shown
- Approximate Location of Barrier Wall
- - - Property Fenceline
- Property Boundary (Tax Parcel Data)

Soil Label Key

Location ID → **WD-400'** (Soil) ← Soil Result Designation
 Depth Range → 0-6in: 28.6 ← Result (mg/kg)

Groundwater Label Key

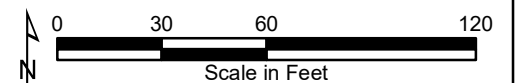
Location ID → **MW-34** (GW) ← Groundwater Result Designation
 Sample Date → 4/20: 7.10 ← Result (µg/L)
 (month/year)

Notes:

- Groundwater results are reported in µg/L.
- Soil results are reported in mg/kg; only exceedances are displayed.
- Most recent groundwater result shown for reference.
- Refer to Phase 2 Part 2 Construction Completion Report (Floyd|Snider and AMEC 2013) and Ditch Bank Excavation Construction Completion Report (Floyd|Snider 2016) for soil results.
- Orthoimagery obtained from Nearmap, March 2020.

Abbreviations:

- ft = Feet
- GW = Groundwater
- in = Inches
- µg/L = Micrograms per liter
- mg/kg = Milligrams per kilogram



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Appendix A

Boring Logs

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PROJECT:

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LOGGED BY:

P. Osterhout

LOCATION:

NW corner of landfill
east of D-7

COORDINATE SYSTEM:

WELL ID:

B-1

DRILLED BY:

Cascade - Scott

DRILLING EQUIPMENT:

54LT

DRILLING METHOD:

DP

SAMPLING METHOD:

4' x 2" disposable liner

NORTHING:

EASTING:

Approximate ground surface elevation = 19 ft
NAVD88

TOTAL DEPTH (ft bgs):

15' bgs

DEPTH TO WATER (ft bgs):

7

BORING DIAMETER:

2"

DRILL DATE:

8/12/20

Depth (feet)	USCS	Description	Drive	Recovery	# of Blows (ft / (ft))	Sample ID
0		Gravel ground surface				
1						
2		No recovery				
3						
4						
5	SM- PAL	Brown to gray silty / gravelly SAND to sandy / gravelly SILT dry to moist (sample collected from bottom of drive 4-7.5')				
6						
7						B-1-7-7.5 @ 10:36
8		No recovery (7.5-11' bgs)				
9						
10						
11	SP	Gray SAND, saturated s-r gravel - trace f-vf sand				B-1-11-12 @ 1035 Archive
12						
13	SP	Dark brown SAND fine, trace gravel, wet, red sand grains abundant				B-1-12-13 @ 1050
14						
15						
16						
17						
18						
19						
20						

ABBREVIATIONS:

ft bgs = feet below ground surface
ppm = parts per million

USCS = Unified Soil Classification System
▼ = denotes groundwater table

NOTES: Moved over and re-drilled to re-attempt
~7-11 ft drive (only recovered 4")

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PROJECT:

B+L

LOGGED BY:

P. Osterhout

LOCATION:

COORDINATE SYSTEM:

NORTHING:

WELL ID:

B-1

EASTING:

DRILLED BY:

Cascade - Scott

DRILLING EQUIPMENT:

Geoprobe 7822

DRILLING METHOD:

D.P.

SAMPLING METHOD:

5' x 2" disposable liner

TOTAL DEPTH (ft bgs):

15'

BORING DIAMETER:

2"

DEPTH TO WATER (ft bgs):

8.5

DRILL DATE:

8/18/20

Depth (feet)	USCS	Description	Drive	Recovery	# of Blows	PID (ppm)	Sample ID
0		Gravel ground surface					
1							
2							
3							
4							
5							
6	SW SM	Gray gravelly, silty SAND dry to moist					
7							
8							(Sample 7-7.5 collected on 8/12)
9	SM	Brown very fine SAND w/ silt, wet trace organics					B-1-8-9 @ 11:05
10	SFA						B-1-9-10 @ 11:07
11		grades to fine SAND, saturated.					B-1-10-12 @ 11:15
12	SP						B-101-12-13 @ 11:17 (Sample 12-13' collected on 8/12)
13							
14							
15		Bottom of boring = 15' bgs					
16							
17							
18							
19							
20							

ABBREVIATIONS:

ft bgs = feet below ground surface
ppm = parts per million

USCS = Unified Soil Classification System
▼ = denotes groundwater table

NOTES:

10:56

Decompressed soil for sample interval
Redrill (original on 8/12)

PROJECT: **BtL**
 LOGGED BY: **P. Osterhout**

LOCATION: **Inside landfill adjacent to D-7**
 COORDINATE SYSTEM:

WELL ID: **B-2**

DRILLED BY: **Cascade - Scott**
 DRILLING EQUIPMENT: **54LT**
 DRILLING METHOD: **DP**
 SAMPLING METHOD: **4' x 2" disposable liner**

NORTHING:
 EASTING:
 approx. ground surface elevation: **19 Ft NAVD 88**
 TOTAL DEPTH (ft bgs): **15'**
 BORING DIAMETER: **2"**
 DEPTH TO WATER (ft bgs):
 DRILL DATE: **8/12/20**

Depth (feet)	USCS	Description	Drive	Recovery	# of Blows	PIB (ppm)	Sample ID
0		Gravel ground surface					
1		Driller reported very difficult drilling in top 2 ft (likely due to gravel/fill)					
2							
3							
4							
5		SW - Gray silty/gravelly SAND (well graded) SM black chunk of wood present. SP Becomes a reddish-gray v. fine SAND, saturated.					
6							
7							B-2-7-8 @ 1238
8							B-2-8-9 @ 1240
9							B-2-9-10 @ 1242
10							B-2-10-11 @ 1418
11		SAA pushed large gravel in shoe. Low recovery					
12							B-2-11-12 @ 1420
13							
14							
15							
16							
17							
18							
19							
20							

ABBREVIATIONS:
 ft bgs = feet below ground surface USCS = Unified Soil Classification System
 ppm = parts per million ▼ = denotes groundwater table

NOTES:

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PROJECT:

BTL

LOGGED BY:

P. Osterhout

LOCATION:

~30' south of D-7

COORDINATE SYSTEM:

WELL ID:

B-3

NORTHING:

EASTING:

DRILLED BY:

Cascade - Scott

DRILLING EQUIPMENT:

54LT

DRILLING METHOD:

DP

SAMPLING METHOD:

4' x 2" disposable liner

TOTAL DEPTH (ft bgs):

15.5

BORING DIAMETER:

2"

DEPTH TO WATER (ft bgs):

8'

DRILL DATE:

8/12/28

Depth (feet)	USCS	Description	Drive	Recovery	# of Blows	Sample ID
0		Gravel ground surface				
1						
2						
3						
4		Brown silty/gravelly w-g SAND, dry to wet, dense (Fill) Becomes gray (Fill)				B-3-7.5-8 @ 15:12
5						
6						
7						
8		Wet at bottom of core				B-3-8-9 @ 15:15 B-3-9-10 @ 15:17
9		Highly saturated gravelly SAND, likely a lot of stuff				
10						
11		SP ~4" of				B-3-10-12 @ 15:19 (archive)
12		SP ~4" of consolidated material (reddish-gray fine SAND) at bottom of core liner, saturated				
13		SAT, trace gravel				B-3-12-13 @ 15:21
14						
15						
16		Bottom of drive = 15.5' bgs				
17						
18						
19						
20						

ABBREVIATIONS:

ft bgs = feet below ground surface USCS = Unified Soil Classification System
ppm = parts per million ▼ = denotes groundwater table

NOTES:

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PROJECT: **B+L**
 LOGGED BY: **P. Osterhout**

LOCATION: **~20' south of D7** WELL ID: **B-3**
 COORDINATE SYSTEM:

DRILLED BY: **Cascade - Scott**
 DRILLING EQUIPMENT: **Geoprobe 7822**

NORTHING: EASTING:

DRILLING METHOD: **D.P.**
 SAMPLING METHOD: **5' x 2" disposable liner**

TOTAL DEPTH (ft bgs): **10'** DEPTH TO WATER (ft bgs): **8'**
 BORING DIAMETER: **2"** DRILL DATE: **8/18/20**

Depth (feet)	USCS	Description	Drive	Recovery	# of Blows	PID (ppm)	Sample ID
0		Gravel ground surface					
1							
2		berm (FILL)					
3							
4							
5							
6	SW-SC	Gray gravelly / clayey SAND w/ silt dry to moist					
7							
8	▼	wet					
9	SM	Brown very fine SAND w/ silt, wet					
10		Lost ~1' from liner Bottom of drive = 10' bgs					
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

~~B103-8-9~~
 B103-8-9 @ 11:42
~~B-3~~ original
 8-9' sample
 collected on
 8/12 likely
 sluff and should
 be discarded

ABBREVIATIONS:
 ft bgs = feet below ground surface USCS = Unified Soil Classification System
 ppm = parts per million ▼ = denotes groundwater table

NOTES: **11:20 Re-drill (original on 8/12)**

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PROJECT:

B+L

LOGGED BY:

P.ost

LOCATION:

COORDINATE SYSTEM:

NORTHING:

TOTAL DEPTH (ft bgs):

BORING DIAMETER:

WELL ID:

B-4

EASTING:

DEPTH TO WATER (ft bgs):

~ 8'

DRILL DATE:

8/12/20 - 8/17/20

DRILLED BY:

Cascade - Scott

DRILLING EQUIPMENT:

~~SILT~~ 7822

DRILLING METHOD:

DP

SAMPLING METHOD:

4' x 2" disposable liner 5' x 2"

Depth (feet)	USCS	Description	Drive	Recovery	# of Blows	PPM (ppm)	Sample ID
0							
1							
2							
3							
4		Hit refusal at 4.5'. Will reattempt w/ larger rig on Monday					
5							
6	SW-SM	Gray gravelly/silty SAND w/ clay, dry to moist, dense (FILL)					
7	SP	Reddish brown fine SAND, wet					B-4-7.5-8 @ 0912
8							B-4-8-9 @ 0914
9		trace organics (reed?) (stuff)					B-4-9-10 @ 0916
10							
11		Same as above (soil extruded from liner)					B-4-10-12 @ 0921
12		soil has slight sulfury odor					B-4-12-13 @ 0923
13							
14							
15							
16							
17							
18							
19							
20							

ABBREVIATIONS:

ft bgs = feet below ground surface USCS = Unified Soil Classification System
ppm = parts per million ▼ = denotes groundwater table

NOTES:

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PROJECT: **B+L**
 LOGGED BY: **P. Osterhout**

LOCATION: **NW berm**
 COORDINATE SYSTEM:

WELL ID: **B-5**

DRILLED BY: **Cascade - Scott**

DRILLING EQUIPMENT:

54 LT

DRILLING METHOD:

DP

SAMPLING METHOD:

4' x 2" disposable liner

NORTHING:

EASTING:

approx. ground surface elevation at 19 ft

NAVD88

TOTAL DEPTH (ft bgs):

DEPTH TO WATER (ft bgs):

8'

BORING DIAMETER:

2"

DRILL DATE:

8/12/20

Depth (feet)	USCS	Description	Drive	Recovery	# of Blows	Pl. (ppm)	Sample ID
0							
1							
2							
3							
4		SW _{SM} Brown silty / gravelly SAND, loose dry Becomes gray + damp					
5							
6							
7							
8	SM	Becomes brown again and siltier Chunk of wood at bottom of core.					B-5-7-8 @ 16:15
8							
9	SP	Gray-brown fine SAND, saturated					B-5-8-9 @ 16:28
9							
10							B-5-9-10 @ 16:30
10							
11							B-5-10-12 @ 16:32
11							
12		SAA, fine to very fine SAND					
12							
13							B-5-12-13 @ 16:47
13							
14							
14							
15							
15							
16							
16							
17							
17							
18							
18							
19							
19							
20							
20							

ABBREVIATIONS:
 ft bgs = feet below ground surface USCS = Unified Soil Classification System
 ppm = parts per million ▼ = denotes groundwater table

NOTES:

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PROJECT: **B+L**
 LOGGED BY: **P. Osterhout**

LOCATION: **west berm East of R-14**
 COORDINATE SYSTEM:

WELL ID: **B-6**

DRILLED BY: **Cascade**
 DRILLING EQUIPMENT: **7822**
 DRILLING METHOD: **DP**
 SAMPLING METHOD: **9' x 2" disposable liner**

NORTHING:
 EASTING:
 TOTAL DEPTH (ft bgs): **15'**
 DEPTH TO WATER (ft bgs): **8'**
 BORING DIAMETER: **2"**
 DRILL DATE: **8/17/20**

Depth (feet)	USCS	Description	Drive	Recovery	# of Blows	PA (ppm)	Sample ID
0							
1							
2							
3							
4							
5							
6	SW-SC	Gray gravelly/silty SAND w/ clay dry (FILL) becomes wet					
7							B-6-7-8 @ 0952
8	SP	Reddish brown fine SAND, wet					B-6-8-9 @ 0954
9							B-6-9-10 @ 0956
10							B-6-10-12 @ 1002
11		SAA, saturated					
12							B-6-12-13 @ 1004
13							
14							
15		Bottom of boring = 15'					
16							
17							
18							
19							
20							

ABBREVIATIONS:
 ft bgs = feet below ground surface USCS = Unified Soil Classification System
 ppm = parts per million ▼ = denotes groundwater table

NOTES: decompressed recovered soil for sample intervals

PROJECT: **B+L**
LOGGED BY: **P. Osterhout**

LOCATION: **~20-25'**
South of B-6
COORDINATE SYSTEM:

WELL ID: **B-7**

DRILLED BY: **Cascade**

DRILLING EQUIPMENT: **7822 geoprobe**

DRILLING METHOD: **D.P.**

SAMPLING METHOD: **5' x 2" disposable liner**

NORTHING:

EASTING:

TOTAL DEPTH (ft bgs): **15'**
BORING DIAMETER: **2"**

DEPTH TO WATER (ft bgs): **7.5'**
DRILL DATE: **8/17/20**

Depth (feet)	USCS	Description	Drive	Recovery	# of blows	PIV (ppm)	Sample ID
0							
1							
2							
3							
4							
5	SW SC	Gray gravelly/silty (w-g) SAND w/clay, dry			}		
6							
7		becomes moist					
8	SP	Dark gray/brown fine SAND, wet to saturated					B-7-7-8 @ 11:09
9							B-7-8-9 @ 11:11
10	Wood	Brown to black wood w/ decomposing-like odor possibly fill, unclear if wood waste or tree.					B-7-9-10 @ 11:13
11	SP	Dark gray/brown fine SAND, saturated (SAP)					B-7-10-12 @ 11:00
12							B-107-11-12 @ 11:02
13							B-7-12-13 @ 11:05
14							B-107-12-13 @ 11:07
15							
16							
17							
18							
19							
20							

ABBREVIATIONS:
ft bgs = feet below ground surface USCS = Unified Soil Classification System
ppm = parts per million ▼ = denotes groundwater table

NOTES: "107" samples are field duplicates

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PROJECT: **B+L**
 LOGGED BY: **P. Osterhout**

LOCATION:
 COORDINATE SYSTEM:
 NORTHING:

WELL ID: **B-8**

DRILLED BY: **Cascade**
 DRILLING EQUIPMENT:

7822 geoprbe
 DRILLING METHOD:
DP

SAMPLING METHOD:
5' x 2" disposable liner

TOTAL DEPTH (ft bgs):
15'
 BORING DIAMETER:
2"

EASTING:
 DEPTH TO WATER (ft bgs):
 DRILL DATE:
8/17/20

Depth (feet)	USCS	Description	Drive	Recovery	# of Blows	PIB (ppm)	Sample ID
0							
1							
2							
3							
4							
5							
6	SW SM	Brown gravelly/silty SAND, dry, loose					
7	SM	poor recovery (void in core), saturated					
8	SP	Dark gray fine SAND, saturated					B-8-7-8 @ 1228
9	SP	Brown, coarse SAND, trace fines/gravel, wet,					B-8-8-9 @ 1230
10	SP	then sharp contact to dark reddish/gray					B-8-9-10 @ 1232
11		Fine SAND, saturated					B-8-10-11 @ 1238
12							B-8-12-13 @ 12:40
13							
14	SAA						
15		Bottom of boring					
16							
17							
18							
19							
20							

First attempt
 Second attempt

↳ sample depth approx. Collected from top 9" of core that was still intact (10'-13' blocks like stuff / poor recovery).

ABBREVIATIONS:
 ft bgs = feet below ground surface USCS = Unified Soil Classification System
 ppm = parts per million ▼ = denotes groundwater table

NOTES: poor recovery / liner jammed in core barrel during first attempt.

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PROJECT:

B+L

LOGGED BY:

P. Osterhout

LOCATION:

COORDINATE SYSTEM:

NORTHING:

TOTAL DEPTH (ft bgs):

15'

BORING DIAMETER:

2"

WELL ID:

B-9

EASTING:

DEPTH TO WATER (ft bgs):

~~6.5'~~ 7' (no.)

DRILL DATE:

8/17/20

DRILLED BY:

Cascade

DRILLING EQUIPMENT:

7822

DRILLING METHOD:

DP.

SAMPLING METHOD:

5' x 2" disposable liner

Depth (feet)	USCS	Description	Drive	Recovery	# of Blows	Blow (ppm)	Sample ID
0							
1							
2							
3							
4							
5							
6	Sw Sc	Gray to brown gravelly/clayey SAND w.g. dry to moist Becomes wet					
7							
8	SP	Reddish-dark brown fine SAND, wet trace wood/organic debris at contact					B-9-7-8 @ 1350
9		Becomes saturated					B-9-8-9 @ 1352
10							B-9-9-10 @ 1354
11		SAA, trace silt					B-109-9-10 @ 1420
12							B-9-10-12 @ 1415
13		(Liner splintered, lost ~14-14.5' on ground)					B-9-12-13 @ 1417
14							
15		Bottom of boring = 15' bgs					
16							
17							
18							
19							
20							

ABBREVIATIONS:

ft bgs = feet below ground surface USCS = Unified Soil Classification System
ppm = parts per million ▼ = denotes groundwater table

NOTES:

13:20

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PROJECT: **B+L**
 LOGGED BY: **P. Osterhout**

LOCATION:
 COORDINATE SYSTEM:
 NORTHING:

WELL ID: **B-10**
 EASTING:

DRILLED BY: **Cascade**
 DRILLING EQUIPMENT: **7822 geoprobe**
 DRILLING METHOD: **D.P.**
 SAMPLING METHOD: **5' x 2" disposable liner**

TOTAL DEPTH (ft bgs): **15'**
 BORING DIAMETER: **2"**
 DEPTH TO WATER (ft bgs): **7'**
 DRILL DATE: **8/17/20**

Depth (feet)	USCS	Description	Drive	Recovery	# of blows	PLD (ft/min)	Sample ID
0							
1							
2							
3							
4							
5							
6	SW SM	Brown to gray gravelly silty SAND (w-g) dry to moist					
7	▼	Becomes wet					
8	Sp	Reddish-dark brown fine SAND, saturated					B-10-7-8 @ 1436
9							B-10-8-9 @ 1438
10							B-10-9-10 @ 1440
11		SAA (soil extruded from core liner, depths are approximate). trace organic debris (reeds/rootlets)					B-10-10-12 @ 1456
12							
13							B-10-12-13 @ 1458
14							
15		Bottom of boring = 15' bgs					
16							
17							
18							
19							
20							

ABBREVIATIONS:
 ft bgs = feet below ground surface
 ppm = parts per million
 USCS = Unified Soil Classification System
 ▼ = denotes groundwater table

NOTES: **decompressed recovered core for sampling intervals.**
 14:20

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PROJECT:

B+L

LOGGED BY:

P. Osterhout

LOCATION:

WELL ID:

B-11

COORDINATE SYSTEM:

NORTHING:

EASTING:

ground surface elevation approx. 19 ft NAVD83

DRILLED BY:

Cascade

DRILLING EQUIPMENT:

Geoprobe 7822

DRILLING METHOD:

D.P.

SAMPLING METHOD:

9' x 2" disposable liner

TOTAL DEPTH (ft bgs):

15'

DEPTH TO WATER (ft bgs):

7'

BORING DIAMETER:

2"

DRILL DATE:

8/18/20

Depth (feet)	USCS	Description	Drive	Recovery	# of Blows	PL (ppm)	Sample ID
0		Gravel ground surface					
1		Drilled passed 0-5' (Fill/berm)					
2							
3							
4							
5							
6	Sw-SC	Gray gravelly, clayey SAND w/ silt, dry to moist (FILL)					
7		becomes wet					
8	SP	Reddish-dark brown fine SAND, wet trace organics (grass?)					B-11-7-8 @ 0805
9							B-11-8-9 @ 0807
10							B-11-9-10 @ 0809
11		SAA, saturated					B-11-10-12 @ 0814
12							
13							B-11-12-13 @ 0816
14							
15		Bottom of boring = 15' bgs.					
16							
17							
18							
19							
20							

ABBREVIATIONS:

ft bgs = feet below ground surface USCS = Unified Soil Classification System
 ppm = parts per million ▼ = denotes groundwater table

NOTES:

0740

PROJECT: **B+L**
LOGGED BY: **P. Osterhout**

LOCATION:
COORDINATE SYSTEM:
NORTHING:

WELL ID:
B-12

EASTING:

DRILLED BY:
Cascade
DRILLING EQUIPMENT:
Geoprobe 7822
DRILLING METHOD:
D.P.
SAMPLING METHOD:
5' x 2" disposable liner

TOTAL DEPTH (ft bgs):
15'
BORING DIAMETER:
2"
DEPTH TO WATER (ft bgs):
DRILL DATE:
8/18/20

Depth (feet)	USCS	Description	Drive	Recovery	# of Blows	PI (ppm)	Sample ID	
0		Gravel ground surface						
1								
2								
3								
4								
5								
6	GM	Gray silty GRAVEL w/ sand (w-g) moist						
7	sw-SC	Gray gravelly/clayey SAND w/ silt (w-g) moist to wet (FILL)						(Field duplicate) B-12-7-8 @ 0825 B-12-7-8 @ 0828
8	SP	Dark brown fine SAND, wet, trace organics						B-12-8-9 @ 0830
9								B-12-9-10 @ 0832
10								B-12-10-12 @ 0840
11		SAA, saturated						
12								
13								B-12-12-13 @ 0842
14								
15		Bottom of boring = 15' logs						
16								
17								
18								
19								
20								

ABBREVIATIONS:
ft bgs = feet below ground surface USCS = Unified Soil Classification System
ppm = parts per million ▼ = denotes groundwater table

NOTES:
0815

PROJECT: **B+L**
 LOGGED BY: **P. Osterhout**

LOCATION:
 COORDINATE SYSTEM:
 NORTHING:

WELL ID: **B-13**
 EASTING:

DRILLED BY: **Cascade**
 DRILLING EQUIPMENT: **Geoprobe 7822**

TOTAL DEPTH (ft bgs): **15'**
 BORING DIAMETER: **2"**

DEPTH TO WATER (ft bgs): **7'**
 DRILL DATE: **8/18/20**

DRILLING METHOD: **D.P.**
 SAMPLING METHOD: **9' x 2" disposable liner**

Depth (feet)	USCS	Description	Drive	Recovery	# of Blows (ft bgs)	Sample ID
0		Gravel				
1						
2		Fill				
3						
4						
5						
6	SW-SE	Gray gravelly, clayey SAND (w-g) w/ silt, moist to wet				
7						
8						B-13-7-8 @ 0905
9	SP	Dark brown fine SAND, wet, trace organics, (rootlets, grass), trace silt				B-13-8-9 @ 0907
10						B-13-9-10 @ 0909
11		SAP, Saturated				B-13-10-12 @ 0911
12						
13						B-13-12-13 @ 0913
14						
15		Bottom of boring = 15' bgs.				
16						
17						
18						
19						
20						

ABBREVIATIONS:
 ft bgs = feet below ground surface USCS = Unified Soil Classification System
 ppm = parts per million ▼ = denotes groundwater table

NOTES:
0840

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PROJECT:

B+L

LOGGED BY:

P. Osterhout

LOCATION:

on berm east of 0-8

WELL ID:

B-14

COORDINATE SYSTEM:

NORTHING:

EASTING:

DRILLED BY:

Cascade - Scott B.

DRILLING EQUIPMENT:

Geoprobe 7822

DRILLING METHOD:

Direct push

SAMPLING METHOD:

5' x 2" disposable liner

TOTAL DEPTH (ft bgs):

15'

DEPTH TO WATER (ft bgs):

6.5'

BORING DIAMETER:

2"

DRILL DATE:

8/18/20

Depth (feet)	USCS	Description	Drive	Recovery	# of Blows	Flow (ppm)	Sample ID
0		Gravel ground surface					
1							
2							
3							
4							
5							
6	SW-SC	Gray gravelly, clayey SAND (w-g), dry to moist Becomes wet					
7							B-14-7-8 @ 0940
8							B-14-8-9 @ 0942
9	SP	Dark brown fine SAND, wet					B-14-9-10 @ 0944
10		SAA, saturated					B-14-10-12 @ 0949
11							
12		Lense of CLAY, plastic, wet					
13	SW	Dark brown SAND f-c w/ gravel (fine) Saturated, trace fines.					B-14-12-13 @ 0951
14							
15		Bottom of boring = 15' bgs					
16							
17							
18							
19							
20							

ABBREVIATIONS:

ft bgs = feet below ground surface
ppm = parts per million

USCS = Unified Soil Classification System
▼ = denotes groundwater table

NOTES:

0930

decompressed soil for sample intervals

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PROJECT: **B+L**
 LOGGED BY: **P. Osterhout**

LOCATION:
 COORDINATE SYSTEM:
 NORTHING:

WELL ID: **B-15**
 EASTING:

DRILLED BY: **Cascade - Scott**
 DRILLING EQUIPMENT:

Geoprobe 7822
 DRILLING METHOD:

D.P.

SAMPLING METHOD: **5' x 2" disposable liner**

TOTAL DEPTH (ft bgs): **15'**
 BORING DIAMETER: **2"**

DEPTH TO WATER (ft bgs): **7'**
 DRILL DATE: **8/18/20**

Depth (feet)	USCS	Description	Drive	Recovery	# of Blows	PID (ppm)	Sample ID
0							
1							
2							
3							
4							
5	SW	Gray gravelly, clayey SAND (wg), dry to moist, dense.					
6	SC						
7		wet					
8	SP	Dark brown fine SAND, wet, trace organics					B-15-7-8 @ 10:08
9		trace gravel					B-15-8-9 @ 10:10
10	SFA						B-15-9-10 @ 10:12
11		grades to med SAND w/ some fine-coarse sand					B-15-10-12 @ 10:16
12	SW	and trace gravel to 10% gravel					
13							B-15-12-13 @ 10:18
14							
15		Bottom of boring = 15' log					
16							
17							
18							
19							
20							

ABBREVIATIONS:
 ft bgs = feet below ground surface USCS = Unified Soil Classification System
 ppm = parts per million ▼ = denotes groundwater table

NOTES: **Decompressed soil for sample intervals**
0956

PROJECT: **B+L**
LOGGED BY: **P. Osterhout**

LOCATION: **3' away from MW-33**
WELL ID: **B-16**
COORDINATE SYSTEM:

DRILLED BY: **Cascade - Scott**

DRILLING EQUIPMENT: **Geoprobe 7822**

DRILLING METHOD: **D.P.**

SAMPLING METHOD: **5' x 2" disposable liner w/ 1' rod extension**

NORTHING: EASTING:

TOTAL DEPTH (ft bgs): **6'** DEPTH TO WATER (ft bgs): **4.5'**

BORING DIAMETER: **2"** DRILL DATE: **8/18/20**

Depth (feet)	USCS	Description	Drive	Recovery	# of Blows	PIB (ppm)	Sample ID
0							
1	ML	Brown, organic-rich SILT, moist					B-16-0-1 @ 1352
2	CH	grades to gray-brown silty CLAY w/ organics (reeds/grass)					B-16-1-2 @ 1353
3		peaty clay to clayey peat, moist, soft					B-16-2-3 @ 1354
4	SP	grades to v. fine SAND, wet					B-16-3-5 @ 1355
5		coarsens down to fine SAND					1
6		- Bottom of boring = 6' bgs					B-16-5-6 @ 1356
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

ABBREVIATIONS:
ft bgs = feet below ground surface USCS = Unified Soil Classification System
ppm = parts per million ▼ = denotes groundwater table

NOTES: **1330** *Decompressed soil for sample intervals*

PROJECT: **B+L**
LOGGED BY: **P. Osterhout**

LOCATION: **~25' east of MW-33 B-17**
COORDINATE SYSTEM:

WELL ID: **B-17**

DRILLED BY: **Cascade - Scott**

NORTHING:

EASTING:

DRILLING EQUIPMENT: **Geoprobe 7822**

DRILLING METHOD: **D.P.**

TOTAL DEPTH (ft bgs):

6'

DEPTH TO WATER (ft bgs):

3.5'

SAMPLING METHOD: **5' x 2" disposable liner w/ 1' rod extension**

BORING DIAMETER:

2"

DRILL DATE:

8/18/20

Depth (feet)	USCS	Description	Drive	Recovery	# of Blows	ppm (ppm)	Sample ID
0							
1	UL	Brown, organic-rich SILT, moist					B-17-0-1 @ 1414
2	CL	Gray-brown silty CLAY w/ organics, moist					B-17-1-2 @ 1415
3	PT	clayey PEAT to peaty CLAY					B-17-2-3 @ 1416
4	SP	Dark brown very fine SAND, wet at 3.5'					B-17-3-5 @ 1417
5		Grades to fine SAND					
6		Bottom of boring = 6' bgs					B-17-5-6 @ 1418
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

ABBREVIATIONS:
ft bgs = feet below ground surface USCS = Unified Soil Classification System
ppm = parts per million ▼ = denotes groundwater table

NOTES: **Decompressed soil for sampling**
1345
10" = 1'

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PROJECT:

B+L

LOGGED BY:

LOCATION:

~25' west of NW-25

COORDINATE SYSTEM:

WELL ID:

B-18

DRILLED BY:

Cascade - Scott

DRILLING EQUIPMENT:

Geoprobe 7822

DRILLING METHOD:

D.P.

SAMPLING METHOD:

5' x 2" disposable liner w/ 1' rod extension

NORTHING:

EASTING:

TOTAL DEPTH (ft bgs):

6'

DEPTH TO WATER (ft bgs):

3.25

BORING DIAMETER:

2"

DRILL DATE:

8/18/20

Depth (feet)	USCS	Description	Drive	Recovery	# of Blows	PI (ppm)	Sample ID
0							
1	ML	Brown, organic-rich SILT, moist rootlets					B-18-0-1 @ 1442
2	CL	Gray silty CLAY w/organics, moist					B-18-1-2 @ 1443
3		Lense of peat w/ clay, soft, moist					B-18-2-3 @ 1444
4	SP	Grades to very fine SAND, wet ^{Dark brown to black}					B-18-3-5 @ 1445
5		v. fine sand grades to fine, then					
6		medium SAND, w/ trace silt, wet.					B-18-5-6 @ 1446
6		Bottom of boring = 6' bgs					
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

ABBREVIATIONS:

ft bgs = feet below ground surface
ppm = parts per million

USCS = Unified Soil Classification System
▼ = denotes groundwater table

NOTES:
1430

Decompressed soil for sampling internal
1" = 9"

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PROJECT: **B+L**
 LOGGED BY: **P. Osterhaut**

LOCATION: **~ 20' South of MW-33** WELL ID: **B-19**
 COORDINATE SYSTEM:

DRILLED BY: **Cascade - Scott**
 DRILLING EQUIPMENT: **Geoprobe 7822**
 DRILLING METHOD: **D.P.**

NORTHING: EASTING:
 TOTAL DEPTH (ft bgs): **6'** DEPTH TO WATER (ft bgs): **4'**
 BORING DIAMETER: **2"** DRILL DATE: **8/18/20**

SAMPLING METHOD: **5' x 2" disposable liner w/ 1' extension**

Depth (feet)	USCS	Description	Drive	Recovery	# of blows	Flow (cc/min)	Sample ID
0		Grassy ground surface					
1	<u>ML</u>	Brown, organic-rich SILT, dry, rootlets					B-19-0-1 @ 1508
2	<u>CL</u>	Gray-brown silty CLAY w/ organics					B-19-1-2 @ 1509
	<u>Pe</u>	Peat lense ~ 2" moist, soft					B-19-2-3 @ 1510
3	<u>SM</u>	Gray brown silty SAND, moist					B-19-3-5 @ 1511
4	<u>SP</u>	Grades from very fine SAND (dark gray brown) to medium SAND, wet					
5		Becomes black					
6		Bottom of boring = 6' bgs					B-19-5-6 @ 1512
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

ABBREVIATIONS:
 ft bgs = feet below ground surface USCS = Unified Soil Classification System
 ppm = parts per million ▼ = denotes groundwater table

NOTES:
 14:40

Decompressed soil for sample intervals
 10" = 1'

B&L Woodwaste Site

West Boundary

Soil Investigation Report

Appendix B

Soil Boring Photographs



Photograph 1: B-1.



Photograph 2: B-1.



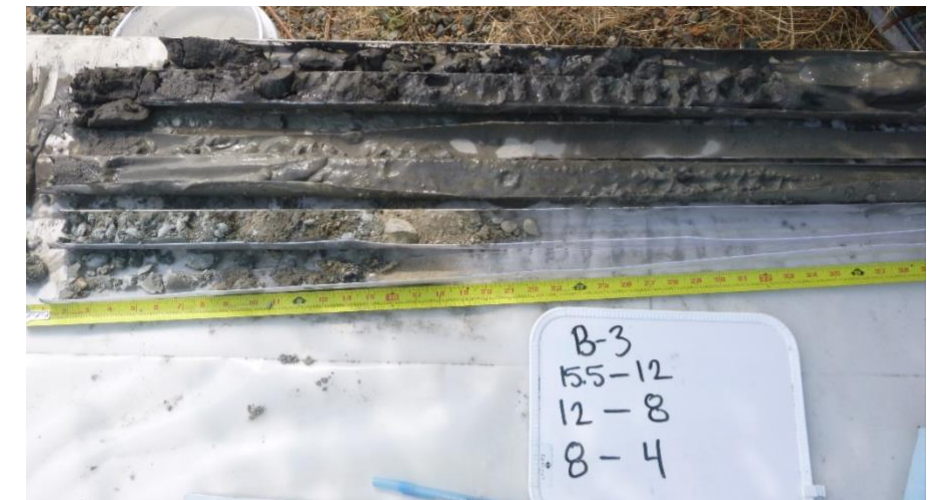
Photograph 3: B-1.



Photograph 4: B-1 re-attempt with 7822D drill rig.



Photograph 5: B-2.



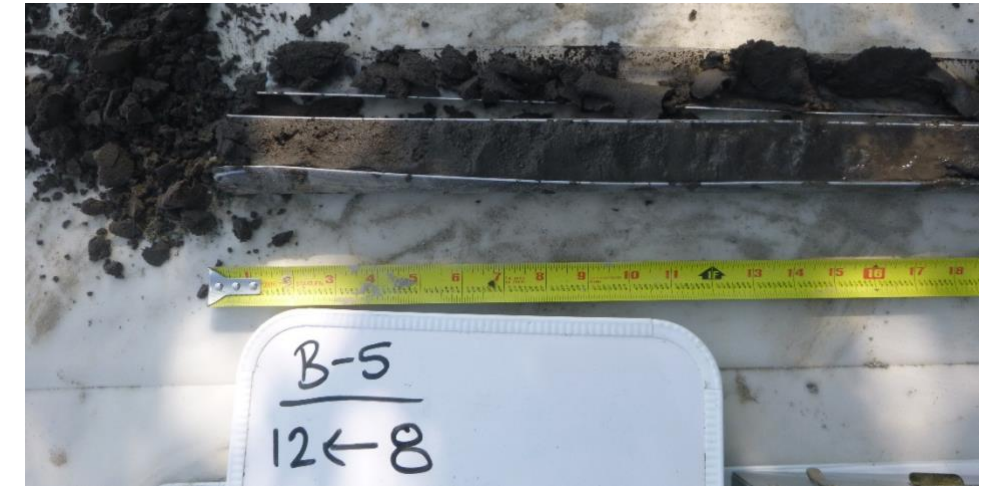
Photograph 6: B-3.



Photograph 7: B-4.



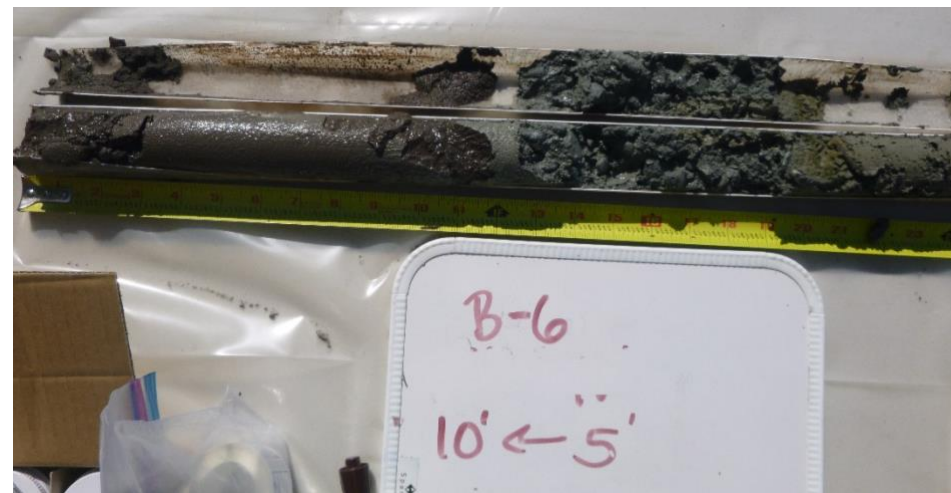
Photograph 8: B-5.



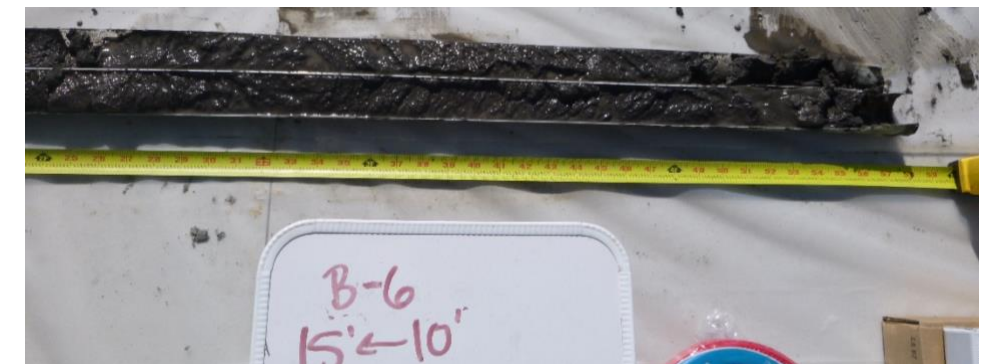
Photograph 9: B-5.



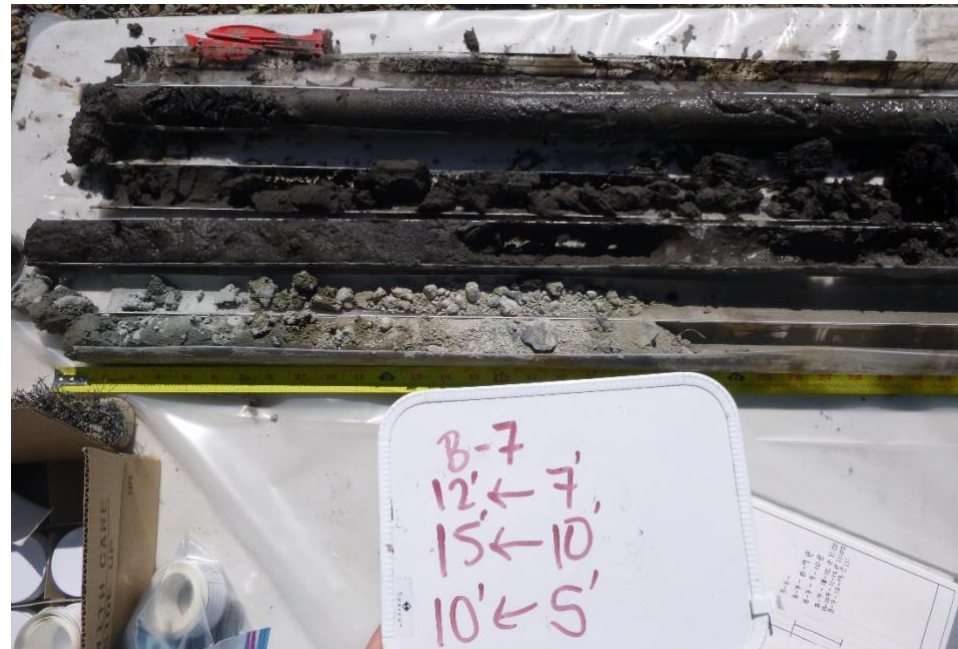
Photograph 10: B-5.



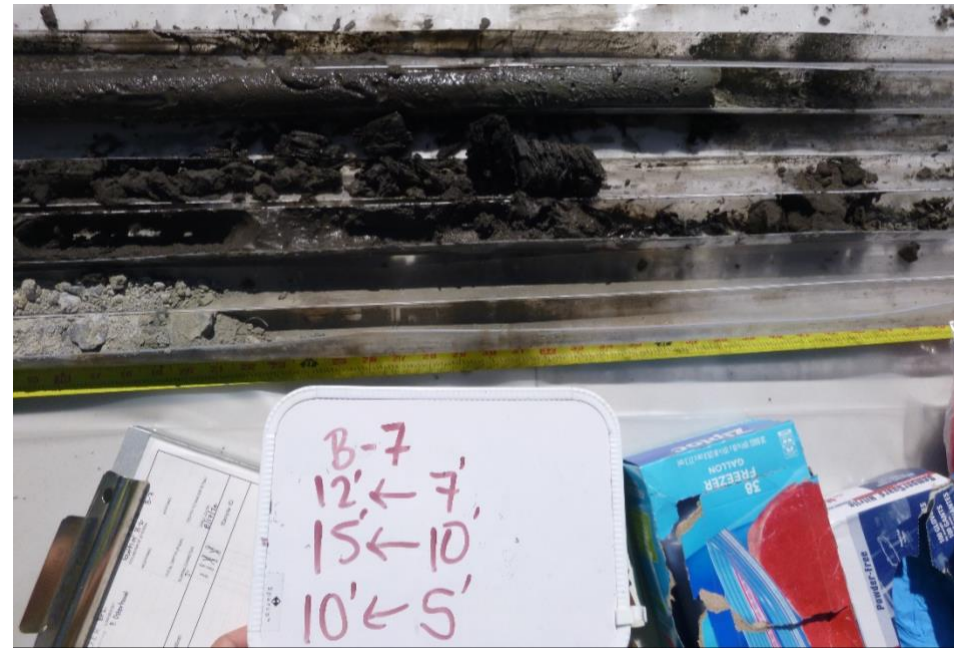
Photograph 11: B-6.



Photograph 12: B-6.



Photograph 13: B-7.



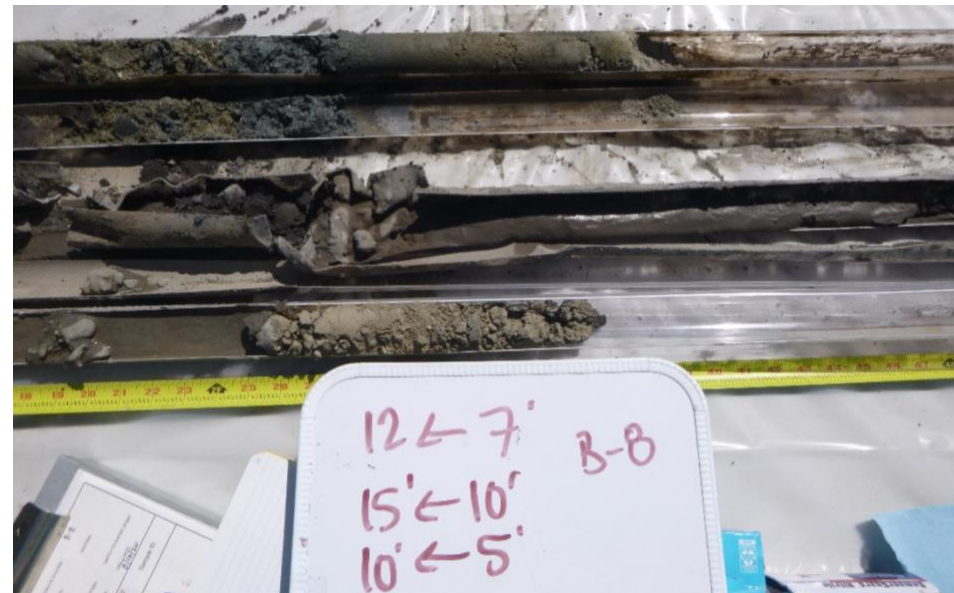
Photograph 14: B-7.



Photograph 15: B-9.



Photograph 16: B-8.



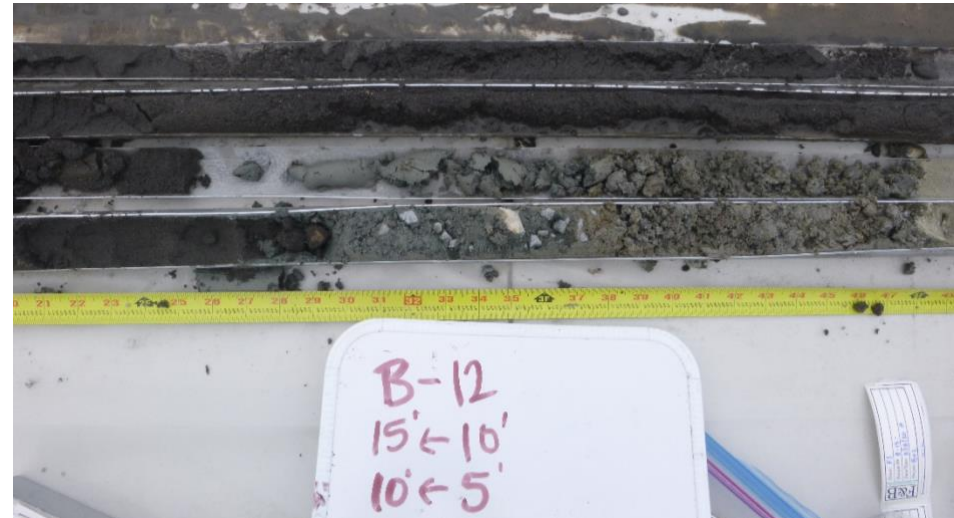
Photograph 17: B-8.



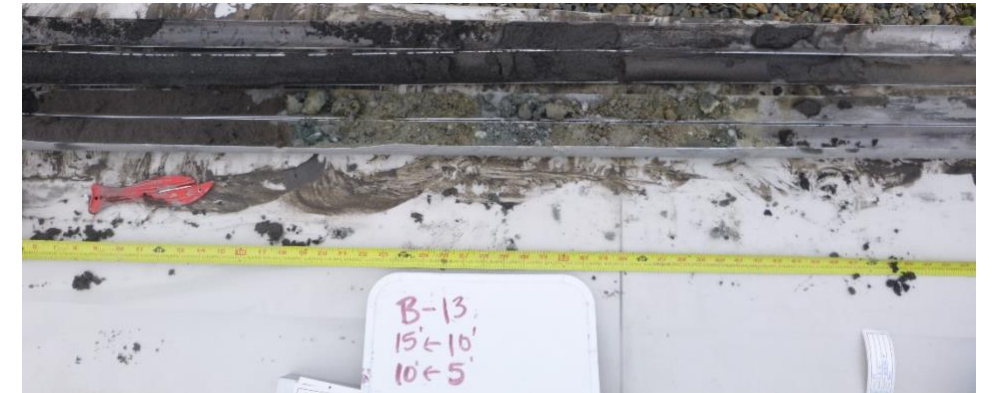
Photograph 18: B-10.



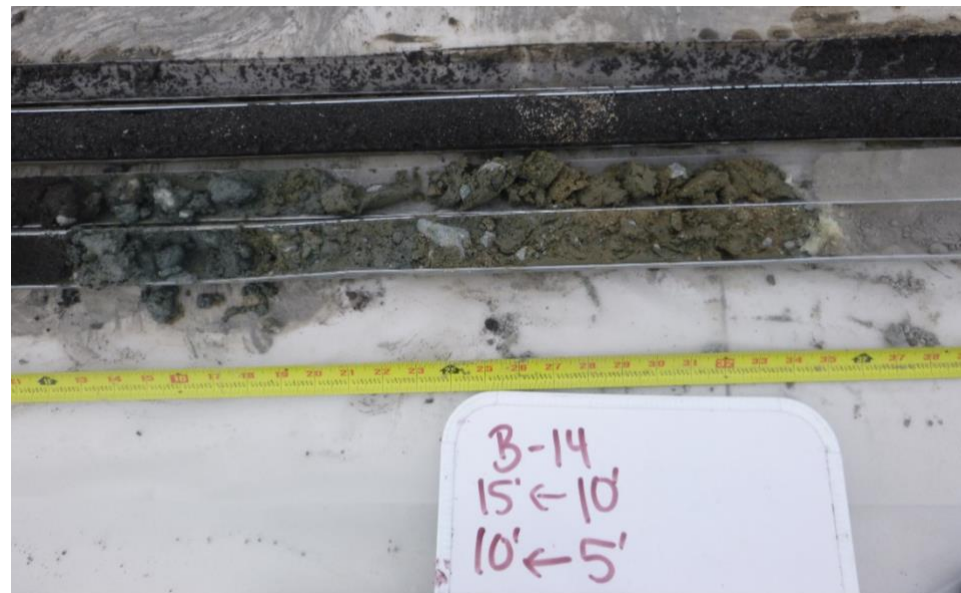
Photograph 19: B-11.



Photograph 20: B-12.



Photograph 21: B-13.



Photograph 22: B-14.



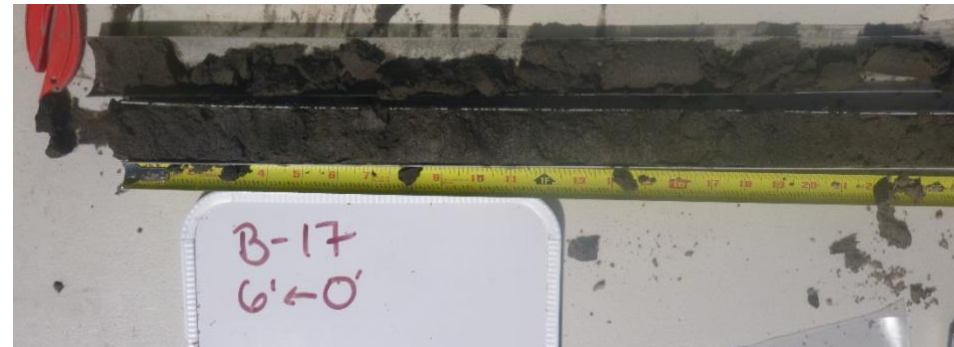
Photograph 23: B-15.



Photograph 24: B-16.



Photograph 25: B-16.



Photograph 26: B-17.



Photograph 27: B-17.



Photograph 28: B-18.



Photograph 29: B-18.



Photograph 30: B-18.



Photograph 31: B-19.



Photograph 32: B-19.



Photograph 33: B-19.

B&L Woodwaste Site

West Boundary

Soil Investigation Report

Appendix C

Analytical Laboratory Reports

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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

August 25, 2020

Brett Beaulieu, Project Manager
Floyd-Snider
Two Union Square, Suite 600
601 Union St
Seattle, WA 98101

Dear Mr Beaulieu:

Included are the results from the testing of material submitted on August 18, 2020 from the B+L, F&BI 008266 project. There are 73 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
FDS0825R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on August 18, 2020 by Friedman & Bruya, Inc. from the Floyd-Snider B+L, F&BI 008266 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Floyd-Snider</u>
008266 -01	B-1-7-7.5
008266 -02	B-1-11-12
008266 -03	B-1-12-13
008266 -04	B-2-7-8
008266 -05	B-2-8-9
008266 -06	B-2-9-10
008266 -07	B-2-10-11
008266 -08	B-2-11-12
008266 -09	B-3-7.5-8
008266 -10	B-3-8-9
008266 -11	B-3-9-10
008266 -12	B-3-10-12
008266 -13	B-3-12-13
008266 -14	B-5-7-8
008266 -15	B-5-8-9
008266 -16	B-5-9-10
008266 -17	B-5-10-12
008266 -18	B-5-12-13
008266 -19	B-4-7.5-8
008266 -20	B-4-8-9
008266 -21	B-4-9-10
008266 -22	B-4-10-12
008266 -23	B-4-12-13
008266 -24	B-6-7-8
008266 -25	B-6-8-9
008266 -26	B-6-9-10
008266 -27	B-6-10-12
008266 -28	B-6-12-13
008266 -29	B-7-7-8
008266 -30	B-7-8-9
008266 -31	B-7-9-10
008266 -32	B-7-11-12
008266 -33	B-107-11-12
008266 -34	B-7-12-13
008266 -35	B-107-12-13

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE (Continued)

<u>Laboratory ID</u>	<u>Floyd-Snider</u>
008266 -36	B-8-7-8
008266 -37	B-8-8-9
008266 -38	B-8-9-10
008266 -39	B-8-10-11
008266 -40	B-8-12-13
008266 -41	B-9-7-8
008266 -42	B-9-8-9
008266 -43	B-9-9-10
008266 -44	B-9-10-12
008266 -45	B-9-12-13
008266 -46	B-109-9-10
008266 -47	B-10-7-8
008266 -48	B-10-8-9
008266 -49	B-10-9-10
008266 -50	B-10-12-12
008266 -51	B-10-12-13
008266 -52	B-11-7-8
008266 -53	B-11-8-9
008266 -54	B-11-9-10
008266 -55	B-11-10-12
008266 -56	B-11-12-13
008266 -57	B-112-7-8
008266 -58	B-12-7-8
008266 -59	B-12-8-9
008266 -60	B-12-9-10
008266 -61	B-12-10-12
008266 -62	B-12-12-13
008266 -63	B-13-7-8
008266 -64	B-13-8-9
008266 -65	B-13-9-10
008266 -66	B-13-10-12
008266 -67	B-13-12-13
008266 -68	B-14-7-8
008266 -69	B-14-8-9
008266 -70	B-14-9-10

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE (Continued)

<u>Laboratory ID</u>	<u>Floyd-Snider</u>
008266 -71	B-14-10-12
008266 -72	B-14-12-13
008266 -73	B-15-7-8
008266 -74	B-15-8-9
008266 -75	B-15-9-10
008266 -76	B-15-10-12
008266 -77	B-15-12-13
008266 -78	B-1-8-9
008266 -79	B-1-9-10
008266 -80	B-1-10-12
008266 -81	B-101-12-13
008266 -82	B-103-8-9
008266 -83	B-16-0-1
008266 -84	B-16-1-2
008266 -85	B-16-2-3
008266 -86	B-16-3-5
008266 -87	B-16-5-6
008266 -88	B-17-0-1
008266 -89	B-17-1-2
008266 -90	B-17-2-3
008266 -91	B-17-3-5
008266 -92	B-17-5-6
008266 -93	B-18-0-1
008266 -94	B-18-1-2
008266 -95	B-18-2-3
008266 -96	B-18-3-5
008266 -97	B-18-5-6
008266 -98	B-19-0-1
008266 -99	B-19-1-2
008266 -100	B-19-2-3
008266 -101	B-19-3-5
008266 -102	B-19-5-6

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-1-7-7.5	Client:	Floyd-Snider
Date Received:	08/18/20	Project:	B+L, F&BI 008266
Date Extracted:	08/20/20	Lab ID:	008266-01
Date Analyzed:	08/20/20	Data File:	008266-01.080
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
----------	------------------------------

Arsenic	2.08
---------	------

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-1-12-13	Client:	Floyd-Snider
Date Received:	08/18/20	Project:	B+L, F&BI 008266
Date Extracted:	08/20/20	Lab ID:	008266-03
Date Analyzed:	08/20/20	Data File:	008266-03.083
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
----------	------------------------------

Arsenic	1.33
---------	------

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-2-7-8	Client:	Floyd-Snider
Date Received:	08/18/20	Project:	B+L, F&BI 008266
Date Extracted:	08/20/20	Lab ID:	008266-04
Date Analyzed:	08/20/20	Data File:	008266-04.084
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
----------	------------------------------

Arsenic	2.39
---------	------

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-2-9-10	Client:	Floyd-Snider
Date Received:	08/18/20	Project:	B+L, F&BI 008266
Date Extracted:	08/20/20	Lab ID:	008266-06
Date Analyzed:	08/20/20	Data File:	008266-06.085
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
----------	------------------------------

Arsenic	1.64
---------	------

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-2-11-12	Client:	Floyd-Snider
Date Received:	08/18/20	Project:	B+L, F&BI 008266
Date Extracted:	08/20/20	Lab ID:	008266-08
Date Analyzed:	08/20/20	Data File:	008266-08.086
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
----------	------------------------------

Arsenic	<1
---------	----

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-3-7.5-8	Client:	Floyd-Snider
Date Received:	08/18/20	Project:	B+L, F&BI 008266
Date Extracted:	08/20/20	Lab ID:	008266-09
Date Analyzed:	08/20/20	Data File:	008266-09.087
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
----------	------------------------------

Arsenic	2.08
---------	------

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-3-9-10	Client:	Floyd-Snider
Date Received:	08/18/20	Project:	B+L, F&BI 008266
Date Extracted:	08/20/20	Lab ID:	008266-11
Date Analyzed:	08/20/20	Data File:	008266-11.090
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
----------	------------------------------

Arsenic	2.38
---------	------

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-3-12-13	Client:	Floyd-Snider
Date Received:	08/18/20	Project:	B+L, F&BI 008266
Date Extracted:	08/20/20	Lab ID:	008266-13
Date Analyzed:	08/20/20	Data File:	008266-13.091
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
----------	------------------------------

Arsenic	1.38
---------	------

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-5-7-8	Client:	Floyd-Snider
Date Received:	08/18/20	Project:	B+L, F&BI 008266
Date Extracted:	08/20/20	Lab ID:	008266-14
Date Analyzed:	08/20/20	Data File:	008266-14.092
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
----------	------------------------------

Arsenic	1.65
---------	------

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-5-9-10	Client:	Floyd-Snider
Date Received:	08/18/20	Project:	B+L, F&BI 008266
Date Extracted:	08/20/20	Lab ID:	008266-16
Date Analyzed:	08/20/20	Data File:	008266-16.093
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
----------	------------------------------

Arsenic	2.89
---------	------

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-5-12-13	Client:	Floyd-Snider
Date Received:	08/18/20	Project:	B+L, F&BI 008266
Date Extracted:	08/20/20	Lab ID:	008266-18
Date Analyzed:	08/20/20	Data File:	008266-18.094
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
----------	------------------------------

Arsenic	2.30
---------	------

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-4-7.5-8	Client:	Floyd-Snider
Date Received:	08/18/20	Project:	B+L, F&BI 008266
Date Extracted:	08/20/20	Lab ID:	008266-19
Date Analyzed:	08/20/20	Data File:	008266-19.095
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
----------	------------------------------

Arsenic	8.53
---------	------

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-4-9-10	Client:	Floyd-Snider
Date Received:	08/18/20	Project:	B+L, F&BI 008266
Date Extracted:	08/20/20	Lab ID:	008266-21
Date Analyzed:	08/20/20	Data File:	008266-21.096
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
----------	------------------------------

Arsenic	2.36
---------	------

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-4-12-13	Client:	Floyd-Snider
Date Received:	08/18/20	Project:	B+L, F&BI 008266
Date Extracted:	08/20/20	Lab ID:	008266-23
Date Analyzed:	08/20/20	Data File:	008266-23.097
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
----------	------------------------------

Arsenic	<1
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-6-7-8	Client:	Floyd-Snider
Date Received:	08/18/20	Project:	B+L, F&BI 008266
Date Extracted:	08/20/20	Lab ID:	008266-24
Date Analyzed:	08/20/20	Data File:	008266-24.098
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
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Arsenic	5.65
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-6-9-10	Client:	Floyd-Snider
Date Received:	08/18/20	Project:	B+L, F&BI 008266
Date Extracted:	08/20/20	Lab ID:	008266-26
Date Analyzed:	08/20/20	Data File:	008266-26.099
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
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Arsenic	3.87
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-6-12-13	Client:	Floyd-Snider
Date Received:	08/18/20	Project:	B+L, F&BI 008266
Date Extracted:	08/20/20	Lab ID:	008266-28
Date Analyzed:	08/20/20	Data File:	008266-28.129
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
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Arsenic	5.19
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-7-7-8	Client:	Floyd-Snider
Date Received:	08/18/20	Project:	B+L, F&BI 008266
Date Extracted:	08/20/20	Lab ID:	008266-29
Date Analyzed:	08/20/20	Data File:	008266-29.130
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
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Arsenic	3.21
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-7-9-10	Client:	Floyd-Snider
Date Received:	08/18/20	Project:	B+L, F&BI 008266
Date Extracted:	08/20/20	Lab ID:	008266-31
Date Analyzed:	08/20/20	Data File:	008266-31.131
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
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Arsenic	1.52
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-7-12-13	Client:	Floyd-Snider
Date Received:	08/18/20	Project:	B+L, F&BI 008266
Date Extracted:	08/20/20	Lab ID:	008266-34
Date Analyzed:	08/20/20	Data File:	008266-34.136
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
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Arsenic	2.01
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-107-12-13	Client:	Floyd-Snider
Date Received:	08/18/20	Project:	B+L, F&BI 008266
Date Extracted:	08/20/20	Lab ID:	008266-35
Date Analyzed:	08/20/20	Data File:	008266-35.137
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
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Arsenic	2.01
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-8-7-8	Client:	Floyd-Snider
Date Received:	08/18/20	Project:	B+L, F&BI 008266
Date Extracted:	08/20/20	Lab ID:	008266-36
Date Analyzed:	08/20/20	Data File:	008266-36.140
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
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Arsenic	2.35
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-8-9-10	Client:	Floyd-Snider
Date Received:	08/18/20	Project:	B+L, F&BI 008266
Date Extracted:	08/20/20	Lab ID:	008266-38
Date Analyzed:	08/20/20	Data File:	008266-38.141
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
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Arsenic	5.24
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-8-12-13	Client:	Floyd-Snider
Date Received:	08/18/20	Project:	B+L, F&BI 008266
Date Extracted:	08/20/20	Lab ID:	008266-40
Date Analyzed:	08/20/20	Data File:	008266-40.142
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
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Arsenic	1.34
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-9-7-8	Client:	Floyd-Snider
Date Received:	08/18/20	Project:	B+L, F&BI 008266
Date Extracted:	08/20/20	Lab ID:	008266-41
Date Analyzed:	08/20/20	Data File:	008266-41.143
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
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Arsenic	26.5
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-9-9-10	Client:	Floyd-Snider
Date Received:	08/18/20	Project:	B+L, F&BI 008266
Date Extracted:	08/20/20	Lab ID:	008266-43
Date Analyzed:	08/20/20	Data File:	008266-43.146
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
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Arsenic	3.22
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-9-12-13	Client:	Floyd-Snider
Date Received:	08/18/20	Project:	B+L, F&BI 008266
Date Extracted:	08/20/20	Lab ID:	008266-45
Date Analyzed:	08/20/20	Data File:	008266-45.147
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
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Arsenic	1.32
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-109-9-10	Client:	Floyd-Snider
Date Received:	08/18/20	Project:	B+L, F&BI 008266
Date Extracted:	08/20/20	Lab ID:	008266-46
Date Analyzed:	08/20/20	Data File:	008266-46.148
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
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Arsenic	2.99
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-10-7-8	Client:	Floyd-Snider
Date Received:	08/18/20	Project:	B+L, F&BI 008266
Date Extracted:	08/20/20	Lab ID:	008266-47
Date Analyzed:	08/20/20	Data File:	008266-47.149
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
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Arsenic	3.27
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-10-9-10	Client:	Floyd-Snider
Date Received:	08/18/20	Project:	B+L, F&BI 008266
Date Extracted:	08/20/20	Lab ID:	008266-49
Date Analyzed:	08/20/20	Data File:	008266-49.150
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
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Arsenic	1.54
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-10-12-13	Client:	Floyd-Snider
Date Received:	08/18/20	Project:	B+L, F&BI 008266
Date Extracted:	08/20/20	Lab ID:	008266-51
Date Analyzed:	08/20/20	Data File:	008266-51.151
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
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Arsenic	2.00
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-11-7-8	Client:	Floyd-Snider
Date Received:	08/18/20	Project:	B+L, F&BI 008266
Date Extracted:	08/20/20	Lab ID:	008266-52
Date Analyzed:	08/20/20	Data File:	008266-52.152
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
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Arsenic	5.51
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-11-9-10	Client:	Floyd-Snider
Date Received:	08/18/20	Project:	B+L, F&BI 008266
Date Extracted:	08/20/20	Lab ID:	008266-54
Date Analyzed:	08/20/20	Data File:	008266-54.153
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
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Arsenic	1.18
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-11-12-13	Client:	Floyd-Snider
Date Received:	08/18/20	Project:	B+L, F&BI 008266
Date Extracted:	08/20/20	Lab ID:	008266-56
Date Analyzed:	08/20/20	Data File:	008266-56.154
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
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Arsenic	1.34
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-112-7-8	Client:	Floyd-Snider
Date Received:	08/18/20	Project:	B+L, F&BI 008266
Date Extracted:	08/20/20	Lab ID:	008266-57
Date Analyzed:	08/20/20	Data File:	008266-57.155
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
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Arsenic	16.8
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-12-7-8	Client:	Floyd-Snider
Date Received:	08/18/20	Project:	B+L, F&BI 008266
Date Extracted:	08/20/20	Lab ID:	008266-58
Date Analyzed:	08/20/20	Data File:	008266-58.158
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
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Arsenic	12.2
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-12-9-10	Client:	Floyd-Snider
Date Received:	08/18/20	Project:	B+L, F&BI 008266
Date Extracted:	08/20/20	Lab ID:	008266-60
Date Analyzed:	08/20/20	Data File:	008266-60.159
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
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Arsenic	1.78
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-12-12-13	Client:	Floyd-Snider
Date Received:	08/18/20	Project:	B+L, F&BI 008266
Date Extracted:	08/20/20	Lab ID:	008266-62
Date Analyzed:	08/20/20	Data File:	008266-62.160
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
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Arsenic	1.25
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-13-7-8	Client:	Floyd-Snider
Date Received:	08/18/20	Project:	B+L, F&BI 008266
Date Extracted:	08/20/20	Lab ID:	008266-63
Date Analyzed:	08/20/20	Data File:	008266-63.161
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
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Arsenic	1.97
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-13-9-10	Client:	Floyd-Snider
Date Received:	08/18/20	Project:	B+L, F&BI 008266
Date Extracted:	08/20/20	Lab ID:	008266-65
Date Analyzed:	08/21/20	Data File:	008266-65.062
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
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Arsenic	<1
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-13-12-13	Client:	Floyd-Snider
Date Received:	08/18/20	Project:	B+L, F&BI 008266
Date Extracted:	08/20/20	Lab ID:	008266-67
Date Analyzed:	08/21/20	Data File:	008266-67.063
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
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Arsenic	1.47
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-14-7-8	Client:	Floyd-Snider
Date Received:	08/18/20	Project:	B+L, F&BI 008266
Date Extracted:	08/20/20	Lab ID:	008266-68
Date Analyzed:	08/21/20	Data File:	008266-68.066
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
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Arsenic	6.00
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-14-9-10	Client:	Floyd-Snider
Date Received:	08/18/20	Project:	B+L, F&BI 008266
Date Extracted:	08/20/20	Lab ID:	008266-70
Date Analyzed:	08/21/20	Data File:	008266-70.067
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
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Arsenic	2.56
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-14-12-13	Client:	Floyd-Snider
Date Received:	08/18/20	Project:	B+L, F&BI 008266
Date Extracted:	08/20/20	Lab ID:	008266-72
Date Analyzed:	08/21/20	Data File:	008266-72.068
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
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Arsenic	2.56
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-15-7-8	Client:	Floyd-Snider
Date Received:	08/18/20	Project:	B+L, F&BI 008266
Date Extracted:	08/20/20	Lab ID:	008266-73
Date Analyzed:	08/21/20	Data File:	008266-73.085
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
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Arsenic	5.64
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-15-9-10	Client:	Floyd-Snider
Date Received:	08/18/20	Project:	B+L, F&BI 008266
Date Extracted:	08/20/20	Lab ID:	008266-75
Date Analyzed:	08/21/20	Data File:	008266-75.086
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
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Arsenic	4.36
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-15-12-13	Client:	Floyd-Snider
Date Received:	08/18/20	Project:	B+L, F&BI 008266
Date Extracted:	08/20/20	Lab ID:	008266-77
Date Analyzed:	08/21/20	Data File:	008266-77.087
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
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Arsenic	2.41
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-1-9-10	Client:	Floyd-Snider
Date Received:	08/18/20	Project:	B+L, F&BI 008266
Date Extracted:	08/20/20	Lab ID:	008266-79
Date Analyzed:	08/21/20	Data File:	008266-79.088
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
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Arsenic	1.15
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-101-12-13	Client:	Floyd-Snider
Date Received:	08/18/20	Project:	B+L, F&BI 008266
Date Extracted:	08/20/20	Lab ID:	008266-81
Date Analyzed:	08/21/20	Data File:	008266-81.089
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
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Arsenic	1.55
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-16-0-1	Client:	Floyd-Snider
Date Received:	08/18/20	Project:	B+L, F&BI 008266
Date Extracted:	08/20/20	Lab ID:	008266-83
Date Analyzed:	08/21/20	Data File:	008266-83.090
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
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Arsenic	23.5
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-16-2-3	Client:	Floyd-Snider
Date Received:	08/18/20	Project:	B+L, F&BI 008266
Date Extracted:	08/20/20	Lab ID:	008266-85
Date Analyzed:	08/21/20	Data File:	008266-85.091
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
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Arsenic	2.53
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-16-5-6	Client:	Floyd-Snider
Date Received:	08/18/20	Project:	B+L, F&BI 008266
Date Extracted:	08/20/20	Lab ID:	008266-87
Date Analyzed:	08/21/20	Data File:	008266-87.094
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
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Arsenic	2.36
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-17-0-1	Client:	Floyd-Snider
Date Received:	08/18/20	Project:	B+L, F&BI 008266
Date Extracted:	08/20/20	Lab ID:	008266-88
Date Analyzed:	08/21/20	Data File:	008266-88.095
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
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Arsenic	29.5
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-17-2-3	Client:	Floyd-Snider
Date Received:	08/18/20	Project:	B+L, F&BI 008266
Date Extracted:	08/20/20	Lab ID:	008266-90
Date Analyzed:	08/21/20	Data File:	008266-90.096
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
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Arsenic	2.56
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-17-5-6	Client:	Floyd-Snider
Date Received:	08/18/20	Project:	B+L, F&BI 008266
Date Extracted:	08/20/20	Lab ID:	008266-92
Date Analyzed:	08/21/20	Data File:	008266-92.097
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
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Arsenic	<1
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-18-0-1	Client:	Floyd-Snider
Date Received:	08/18/20	Project:	B+L, F&BI 008266
Date Extracted:	08/20/20	Lab ID:	008266-93
Date Analyzed:	08/21/20	Data File:	008266-93.098
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
----------	------------------------------

Arsenic	23.5
---------	------

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-18-2-3	Client:	Floyd-Snider
Date Received:	08/18/20	Project:	B+L, F&BI 008266
Date Extracted:	08/20/20	Lab ID:	008266-95
Date Analyzed:	08/21/20	Data File:	008266-95.099
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
----------	------------------------------

Arsenic	2.87
---------	------

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-18-5-6	Client:	Floyd-Snider
Date Received:	08/18/20	Project:	B+L, F&BI 008266
Date Extracted:	08/20/20	Lab ID:	008266-97
Date Analyzed:	08/21/20	Data File:	008266-97.100
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
----------	------------------------------

Arsenic	2.80
---------	------

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-19-0-1	Client:	Floyd-Snider
Date Received:	08/18/20	Project:	B+L, F&BI 008266
Date Extracted:	08/20/20	Lab ID:	008266-98
Date Analyzed:	08/21/20	Data File:	008266-98.101
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
----------	------------------------------

Arsenic	20.9
---------	------

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-19-2-3	Client:	Floyd-Snider
Date Received:	08/18/20	Project:	B+L, F&BI 008266
Date Extracted:	08/20/20	Lab ID:	008266-100
Date Analyzed:	08/20/20	Data File:	008266-100.162
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
----------	------------------------------

Arsenic	4.39
---------	------

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-19-5-6	Client:	Floyd-Snider
Date Received:	08/18/20	Project:	B+L, F&BI 008266
Date Extracted:	08/20/20	Lab ID:	008266-102
Date Analyzed:	08/20/20	Data File:	008266-102.195
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
----------	------------------------------

Arsenic	6.76
---------	------

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	B+L, F&BI 008266
Date Extracted:	08/20/20	Lab ID:	I0-483 mb
Date Analyzed:	08/20/20	Data File:	I0-483 mb.078
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
----------	------------------------------

Arsenic	<1
---------	----

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	B+L, F&BI 008266
Date Extracted:	08/20/20	Lab ID:	I0-484 mb
Date Analyzed:	08/20/20	Data File:	I0-484 mb.134
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
----------	------------------------------

Arsenic	<1
---------	----

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	B+L, F&BI 008266
Date Extracted:	08/20/20	Lab ID:	I0-485 mb
Date Analyzed:	08/21/20	Data File:	I0-485 mb.060
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
----------	------------------------------

Arsenic	<1
---------	----

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	B+L, F&BI 008266
Date Extracted:	08/20/20	Lab ID:	I0-486 mb
Date Analyzed:	08/20/20	Data File:	I0-486 mb.070
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
----------	------------------------------

Arsenic	<1
---------	----

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/25/20

Date Received: 08/18/20

Project: B+L, F&BI 008266

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

Laboratory Code: 008266-01 (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	1.85	90	91	75-125	1

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	85	80-120

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/25/20

Date Received: 08/18/20

Project: B+L, F&BI 008266

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

Laboratory Code: 008266-35 (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	1.53	90	85	75-125	6

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	87	80-120

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/25/20

Date Received: 08/18/20

Project: B+L, F&BI 008266

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

Laboratory Code: 008266-67 (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	1.15	84	83	75-125	1

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	85	80-120

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/25/20
Date Received: 08/18/20
Project: B+L, F&BI 008266

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

Laboratory Code: 008266-100 (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	3.20	86	88	75-125	2

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	86	80-120

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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.

008266

SAMPLE CHAIN OF CUSTODY

ME 08/18/20

B14

Report To Brett Beaulieu
 Company Floyd Snider
 Address 601 Union St, Ste 600
 City, State, ZIP Seattle, WA 98101
 Phone 206 292-2070 Email Brett.Beaulieu@FloydSnider.com

SAMPLERS (signature) [Signature]
 PROJECT NAME B+L PO # _____
 REMARKS _____ INVOICE TO _____
 Project specific RLs? - Yes / No

Page # 1 of 11
 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										Notes
						NWTPH-Dx	NWTPH-Cx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	Total Arsenic	Archive		
B-1-7-7.5	01	8/12/20	10:36	S	1								X			
B-1-11-12	02		10:35	S	1									X		
B-1-12-13	03		10:50	S	1								X			
B-2-7-8	04		1238	S	1								X			
B-2-8-9	05		1240	S	1									X		
B-2-9-10	06		1242	S	1								X			
B-2-10-11	07		1418	S	1									X		
B-2-11-12	08		1420	S	1								X			
B-3-7.5-8	09		1512	S	1								X			
B-3-8-9	10	↓	1515	S	1									X		

Friedman & Bruya, Inc.
 3012 16th Avenue West
 Seattle, WA 98119-2029
 Ph. (206) 285-8282

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
<u>[Signature]</u>	Pamela Osterhout	FIS	8/18/20	185
<u>[Signature]</u>	BISRAT TADJESSE	FBI	1	1
Relinquished by:				
Received by:				

Samples received at 4 °C

008266

SAMPLE CHAIN OF CUSTODY

ME 08/18/20

Page # 2 of 11 B14

Report To Brett Beaulieu
 Company Flyud Snider
 Address _____
 City, State, ZIP see page 1
 Phone _____ Email _____

SAMPLERS (signature) P. Osterhacht
 PROJECT NAME BTL PO # _____
 REMARKS _____ INVOICE TO _____
 Project specific RLs? - Yes / No _____

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										Notes
						NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	ARSENIC	ARCHIVE		
B-3-9-10	11	8/12/20	1517	S	1								X			
B-3-10-12	12	↓	1519	S	1									X		
B-3-12-13	13		1521	S	1								X			
B-5-7-8	14		1615	S	1								X			
B-5-8-9	15		1628	S	1									X		
B-5-9-10	16		1630	S	1								X			
B-5-10-12	17		1632	S	1									X		
B-5-12-13	18		1647	S	1								X			
B-4-7.5-8	19	8/17/20	0912	S	1								X			
B-4-8-9	20	8/17/20	0914	S	1									X		

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 Ph. (206) 285-8282

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
<u>P. Osterhacht</u>	P. Osterhacht	FIS	8/18	1915
<u>RZ</u>	BISRAJ TADESSE	FBI	1	1
Relinquished by:				
Received by:				
Relinquished by:				
Received by:		Samples received at	4°C	

008266

SAMPLE CHAIN OF CUSTODY

ME 08/18/20

BIY

Report To Brett Beaulieu
Company Floyd Snider
Address _____
City, State, ZIP see page 1
Phone _____ Email _____

SAMPLERS (signature) P. Osterhout
PROJECT NAME BTL PO # _____
REMARKS _____ INVOICE TO _____
Project specific RLs? - Yes / No _____

Page # 3 of 11
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											Notes
						NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	ARSENIC	Archive			
B-4-9-10	21	8/17/20	0916	S	1									X			
B-4-10-12	22	↓	0921	↓	1										X		
B-4-12-13	23		0923		1										X		
B-6-7-8	24		0952		1										X		
B-6-8-9	25		0954		1											X	
B-6-9-10	26		0956		1										X		
B-6-10-12	27		1002		1											X	
B-6-12-13	28		1004		1										X		
B-7-7-8	29		1109		1										X		
B-7-8-9	30		11:11		1											X	

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SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
<u>P. Osterhout</u>	P. Osterhout	FIS	8/18	1015
<u>R. F.</u>	BISKAT TADESE	FBI	1	1
Relinquished by:				
Received by:				
Relinquished by:				
Received by:		Samples received at	4	°C

008266

SAMPLE CHAIN OF CUSTODY

ME 08/18/20 Page # 4 of 11 BTU

Report To Brett Beaulieu
Company Floyd Snider
Address _____
City, State, ZIP see page 1
Phone _____ Email _____

SAMPLERS (signature) P. Osterhaut

PROJECT NAME BTL PO # _____

REMARKS _____ INVOICE TO _____

Project specific RLs? - Yes / No _____

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										Notes
						NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	ARSENIC	Archive		
B-7-9-10	31	8/17/20	11:13	S	1								X			
B-7-11-12	32	↓	11:00		1									X		
B-107-11-12	33		11:02		1									X		
B-7-12-13	34		11:05		1								X			
B-107-12-13	35		11:07		1								X			
B-8-7-8	36		1228		1								X			
B-8-8-9	37		1230		1									X		
B-8-9-10	38		1232		1								X			
B-8-10-11	39		1238		1									X		
B-8-12-13	40		↓	1240	↓	1								X		

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Seattle, WA 98119-2029
Ph. (206) 285-8282

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
<u>P. Osterhaut</u>	P. Osterhaut	FIS	8/19	1915
<u>[Signature]</u>	BISMAT TADESSE	FBI	1	1
Received by:		Samples received at <u>4</u> °C		

008266

SAMPLE CHAIN OF CUSTODY

ME 08/18/20 BLY

Report To Brett Beaulieu
 Company Floyd Snider
 Address _____
 City, State, ZIP see page 1
 Phone _____ Email _____

SAMPLERS (signature) P. Osterhout
 PROJECT NAME BTL PO # _____
 REMARKS _____ INVOICE TO _____
 Project specific RLs? - Yes / No _____

Page # 5 of 11

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										Notes
						NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	Arsenic	Archive		
B-9-7-8	41	8/17/20	1350	S	1									X		
B-9-8-9	42		1352		1										X	
B-9-9-10	43		1354		1									X		
B-9-10-12	44		1415		1										X	
B-9-12-13	45		1417		1									X		
B-10-9-10	46		1420		1									X		
B-10-7-8	47		1436		1									X		
B-10-8-9	48		1438		1										X	
B-10-9-10	49		1440		1									X		
B-10-12-12	50	✓	1456	✓	1										X	

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SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
<u>P. Osterhout</u>	P. Osterhout	F/S	8/18	1815
<u>[Signature]</u>	BISKAT TADESS	FBI	1	1
Relinquished by:				
Received by:				
Relinquished by:				
Received by:				
Samples received at <u>4</u> °C				

008266

SAMPLE CHAIN OF CUSTODY

ME 08/18/20

Report To Brett Beaulieu
 Company Floyd Snider
 Address _____
 City, State, ZIP see page 1
 Phone _____ Email _____

SAMPLERS (signature) P. Osterhaut
 PROJECT NAME B+L PO # _____
 REMARKS _____ INVOICE TO _____
 Project specific RLs? - Yes / No _____

Page # 6 of 11 BT4
 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										Notes
						NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	ARSENIC	ARCHIVE		
B-10-12-13	51	8/17/20	1458	S	1								X			
B-11-7-8	52	8/18/20	0805		1								X			
B-11-8-9	53		0807		1									X		
B-11-9-10	54		0809		1								X			
B-11-10-12	55		0814		1									X		
B-11-12-13	56		0816		1								X			
B-112-7-8	57		0825		1								X			
B-12-7-8	58		0828		1								X			
B-12-8-9	59		0830		1									X		
B-12-9-10	60	↓	0832	↓	1								X			

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SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
<u>P. Osterhaut</u>	P. Osterhaut	FIS	8/18	1815
<u>DZ F</u>	BISKAT TADESSE	FB1		
Relinquished by:				
Received by:				
Relinquished by:				
Received by:		Samples received at	4°C	

008266

SAMPLE CHAIN OF CUSTODY

ME 08/18/20

BLY

Report To Brett Beaudien
 Company Floyd Snider
 Address _____
 City, State, ZIP see page 1
 Phone _____ Email _____

SAMPLERS (signature) [Signature]
 PROJECT NAME BTL PO # _____
 REMARKS _____ INVOICE TO _____
 Project specific RLs? - Yes / No

Page # 7 of 11
 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											Notes
						NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	Arsenic	Archive			
B-12-10-12	61	8/18/20	0840	S	1												X
B-12-12-13	62		0842		1											X	
B-13-7-8	63		0905		1											X	
B-13-8-9	64		0907		1											X	
B-13-9-10	65		0909		1											X	
B-13-10-12	66		0911		1											X	
B-13-12-13	67		0913		1											X	
B-14-7-8	68		0940		1											X	
B-14-8-9	69		0942		1											X	
B-14-9-10	70	↓	0944	↓	1											X	

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 Seattle, WA 98119-2029
 Ph. (206) 285-8282

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
<u>[Signature]</u>	P. Osterhoff	FIS	8/18	1815
<u>[Signature]</u>	BISRAI TADESSA	FBI	1	1
Relinquished by:				
Received by:				
Relinquished by:				
Received by:				
Samples received at <u>4</u> °C				

008266

SAMPLE CHAIN OF CUSTODY

ME 08/18/20

B24

Report To Brett Beaulieu
 Company Floyd Snider
 Address _____
 City, State, ZIP _____
 Phone _____ Email _____

SAMPLERS (signature) P. Osterhout
 PROJECT NAME B+L PO # _____
 REMARKS _____ INVOICE TO _____
 Project specific RLs? - Yes / No

Page # 8 of 11
 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											Notes		
						NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	Arsenic	Archive					
B-14-10-12	71	8/18/20	0949	S	1														
B-14-12-13	72	↓	0951	↓	1									X					
B-15-7-8	73		1008		1									X					
B-15-8-9	74		1010		1										X				
B-15-9-10	75		1012		1										X				
B-15-10-12	76		1016		1											X			
B-15-12-13	77		1018		1											X			
B-1-8-9	78		1105		1												X		
B-1-9-10	79		1107		1											X			
B-1-10-12	80		↓		1115	↓	1										X		

Friedman & Bruya, Inc.
 3012 16th Avenue West
 Seattle, WA 98119-2029
 Ph. (206) 285-8282

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
<u>P. Osterhout</u>	P. Osterhout	F/S	8/18	1815
<u>[Signature]</u>	BISWAT TADDESE	FBI	1	1
Relinquished by:				
Received by:				
Relinquished by:				
Received by:				
Samples received at <u>4</u> °C				

SAMPLE CHAIN OF CUSTODY

ME 08/18/20 BICU

Report To 008266 Brett Beaulieu
 Company Floyd Snider
 Address _____
 City, State, ZIP see page 1
 Phone _____ Email _____

SAMPLERS (signature) P. Osterhaut
 PROJECT NAME B+L PO # _____
 REMARKS _____ INVOICE TO _____
 Project specific RLs? - Yes / No _____

Page # 9 of 11
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										Notes
						NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	ARSENIC	ARCHIVE		
B-101-12-13	81	8/18/20	1117	S	1								X			
B-103-8-9	82		1142		1									X		
B-16-0-1	83		1352		1								X			
B-16-1-2	84		1353		1									X		
B-16-2-3	85		1354		1								X			
B-16-3-5	86		1355		1									X		
B-16-5-6	87		1356		1								X			
B-17-0-1	88		1414		1								X			
B-17-1-2	89		1415		1									X		
B-17-2-3	90	↓	1416	↓	1								X			

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SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
<u>P. Osterhaut</u>	P. Osterhaut	FIS	8/18	1015
<u>B. Snider</u>	BISLAT TADESSE	FBI	1	1
Received by:		Samples received at <u>4</u> °C		

SAMPLE CHAIN OF CUSTODY

ME 08/18/20

BZY

Report To Brett Beaulieu
 Company Floyd Smider
 Address _____
 City, State, ZIP see page 1
 Phone _____ Email _____

SAMPLERS (signature) P. Osterhout
 PROJECT NAME BTL PO # _____
 REMARKS _____ INVOICE TO _____
 Project specific RLs? - Yes / No _____

Page # 10 of 11
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											Notes
						NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	AROMATIC	Archive			
B-17-3-5	91	8/18/20	1417	S	1												X
B-17-5-6	92		1418		1											X	
B-18-0-1	93		1442		1											X	
B-18-1-2	94		1443		1											X	
B-18-2-3	95		1444		1											X	
B-18-3-5	96		1445		1											X	
B-18-5-6	97		1446		1											X	
B-19-0-1	98		1508		1											X	
B-19-1-2	99		1509		1											X	
B-19-2-3	100	↓	1510	↓	1											X	

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SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
<u>P. Osterhout</u>	P. Osterhout	FIS	8/18	1815
<u>B. S. F.</u>	BISRAJ TADSESE	FBI	1	1
Relinquished by:				
Received by:				
		Samples received at <u>4</u> °C		

008266

SAMPLE CHAIN OF CUSTODY

ME 08/18/20

BIU

Report To Brett Beaulieu
 Company Floyd Snider
 Address _____
 City, State, ZIP see page 1
 Phone _____ Email _____

SAMPLERS (signature) [Signature]
 PROJECT NAME BTL PO # _____
 REMARKS _____ INVOICE TO _____
 Project specific RLs? - Yes / No _____

Page # 11 of 11
 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											Notes		
						NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	Arsenic	Archive					
B-19-3-5	101	8/18/20	1511	S	1												X		
B-19-5-6	102	8/18/20	1512	S	1												X		
PO																			

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

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
<u>[Signature]</u>	P. Osterhout	F/S	8/18	1815
<u>[Signature]</u>	BRKAT TAYLOR	FBI	1	1
Received by:		Samples received at	4 °C	

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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

September 8, 2020

Brett Beaulieu, Project Manager
Floyd-Snider
Two Union Square, Suite 600
601 Union St
Seattle, WA 98101

Dear Mr Beaulieu:

Included are the additional results from the testing of material submitted on August 18, 2020 from the B+L, F&BI 008266 project. There are 8 pages included in this report.

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
FDS0908R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on August 18, 2020 by Friedman & Bruya, Inc. from the Floyd-Snider B+L, F&BI 008266 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Floyd-Snider</u>
008266 -01	B-1-7-7.5
008266 -02	B-1-11-12
008266 -03	B-1-12-13
008266 -04	B-2-7-8
008266 -05	B-2-8-9
008266 -06	B-2-9-10
008266 -07	B-2-10-11
008266 -08	B-2-11-12
008266 -09	B-3-7.5-8
008266 -10	B-3-8-9
008266 -11	B-3-9-10
008266 -12	B-3-10-12
008266 -13	B-3-12-13
008266 -14	B-5-7-8
008266 -15	B-5-8-9
008266 -16	B-5-9-10
008266 -17	B-5-10-12
008266 -18	B-5-12-13
008266 -19	B-4-7.5-8
008266 -20	B-4-8-9
008266 -21	B-4-9-10
008266 -22	B-4-10-12
008266 -23	B-4-12-13
008266 -24	B-6-7-8
008266 -25	B-6-8-9
008266 -26	B-6-9-10
008266 -27	B-6-10-12
008266 -28	B-6-12-13
008266 -29	B-7-7-8
008266 -30	B-7-8-9
008266 -31	B-7-9-10
008266 -32	B-7-11-12
008266 -33	B-107-11-12
008266 -34	B-7-12-13
008266 -35	B-107-12-13
008266 -36	B-8-7-8

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE (continued)

<u>Laboratory ID</u>	<u>Floyd-Snider</u>
008266 -37	B-8-8-9
008266 -38	B-8-9-10
008266 -39	B-8-10-11
008266 -40	B-8-12-13
008266 -41	B-9-7-8
008266 -42	B-9-8-9
008266 -43	B-9-9-10
008266 -44	B-9-10-12
008266 -45	B-9-12-13
008266 -46	B-109-9-10
008266 -47	B-10-7-8
008266 -48	B-10-8-9
008266 -49	B-10-9-10
008266 -50	B-10-12-12
008266 -51	B-10-12-13
008266 -52	B-11-7-8
008266 -53	B-11-8-9
008266 -54	B-11-9-10
008266 -55	B-11-10-12
008266 -56	B-11-12-13
008266 -57	B-112-7-8
008266 -58	B-12-7-8
008266 -59	B-12-8-9
008266 -60	B-12-9-10
008266 -61	B-12-10-12
008266 -62	B-12-12-13
008266 -63	B-13-7-8
008266 -64	B-13-8-9
008266 -65	B-13-9-10
008266 -66	B-13-10-12
008266 -67	B-13-12-13
008266 -68	B-14-7-8
008266 -69	B-14-8-9
008266 -70	B-14-9-10
008266 -71	B-14-10-12
008266 -72	B-14-12-13
008266 -73	B-15-7-8
008266 -74	B-15-8-9
008266 -75	B-15-9-10

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE (continued)

<u>Laboratory ID</u>	<u>Floyd-Snider</u>
008266 -76	B-15-10-12
008266 -77	B-15-12-13
008266 -78	B-1-8-9
008266 -79	B-1-9-10
008266 -80	B-1-10-12
008266 -81	B-101-12-13
008266 -82	B-103-8-9
008266 -83	B-16-0-1
008266 -84	B-16-1-2
008266 -85	B-16-2-3
008266 -86	B-16-3-5
008266 -87	B-16-5-6
008266 -88	B-17-0-1
008266 -89	B-17-1-2
008266 -90	B-17-2-3
008266 -91	B-17-3-5
008266 -92	B-17-5-6
008266 -93	B-18-0-1
008266 -94	B-18-1-2
008266 -95	B-18-2-3
008266 -96	B-18-3-5
008266 -97	B-18-5-6
008266 -98	B-19-0-1
008266 -99	B-19-1-2
008266 -100	B-19-2-3
008266 -101	B-19-3-5
008266 -102	B-19-5-6

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-9-8-9	Client:	Floyd-Snider
Date Received:	08/18/20	Project:	B+L, F&BI 008266
Date Extracted:	09/03/20	Lab ID:	008266-42
Date Analyzed:	09/03/20	Data File:	008266-42.170
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
----------	------------------------------

Arsenic	7.57
---------	------

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-9-10-12	Client:	Floyd-Snider
Date Received:	08/18/20	Project:	B+L, F&BI 008266
Date Extracted:	09/03/20	Lab ID:	008266-44
Date Analyzed:	09/03/20	Data File:	008266-44.171
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
----------	------------------------------

Arsenic	1.31
---------	------

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	B+L, F&BI 008266
Date Extracted:	09/03/20	Lab ID:	I0-513 mb2
Date Analyzed:	09/03/20	Data File:	I0-513 mb2.108
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
----------	------------------------------

Arsenic	<1
---------	----

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/08/20

Date Received: 08/18/20

Project: B+L, F&BI 008266

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

Laboratory Code: 009022-41 (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	9.40	91	98	75-125	7

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	87	80-120

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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.

008266

SAMPLE CHAIN OF CUSTODY

ME 08/18/26

BI4

Report To Brett Beaulieu
 Company Floyd Snider
 Address 601 Union St, Ste 600
 City, State, ZIP Seattle, WA 98101
 Phone 206 292-2070 Email Brett.Beaulieu@FloydSnider.com

SAMPLERS (signature) [Signature] Page # 1 of 11

PROJECT NAME B+L PO # _____

REMARKS _____ INVOICE TO _____

Project specific RLs? - Yes / No _____

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										Notes
						NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	Total Arsenic	Archive		
B-1-7-7.5	01	8/12/20	10:36	S	1									X		
B-1-11-12	02		10:35	S	1										X	
B-1-12-13	03		10:50	S	1									X		
B-2-7-8	04		1238	S	1									X		
B-2-8-9	05		1240	S	1										X	
B-2-9-10	06		1242	S	1									X		
B-2-10-11	07		1418	S	1										X	
B-2-11-12	08		1420	S	1									X		
B-3-7.5-8	09		1512	S	1									X		
B-3-8-9	10	↓	1515	S	1										X	

Friedman & Bruya, Inc.
 3012 16th Avenue West
 Seattle, WA 98119-2029
 Ph. (206) 285-8282

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
<u>[Signature]</u>	Pamela Osterhout	F/S	8/18/20	1815
<u>[Signature]</u>	BISRAJ MADHUSSE	FBI	1	1
Relinquished by:				
Received by:				

Samples received at 4 °C

008266

SAMPLE CHAIN OF CUSTODY

ME 08/18/20

Page # 2 of 11 BTU

Report To Brett Beaulieu
 Company Floyd Snider
 Address _____
 City, State, ZIP see page 1
 Phone _____ Email _____

SAMPLERS (signature) P. Osterhach

PROJECT NAME BTL PO # _____

REMARKS _____ INVOICE TO _____

Project specific RLs? - Yes / No _____

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										Notes
						NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	ARSENIC	ARCHIVE		
B-3-9-10	11	8/12/20	1517	S	1									X		
B-3-10-12	12	↓	1519	S	1										X	
B-3-12-13	13		1521	S	1									X		
B-5-7-8	14		1615	S	1									X		
B-5-8-9	15		1628	S	1										X	
B-5-9-10	16		1630	S	1									X		
B-5-10-12	17		1632	S	1										X	
B-5-12-13	18		↓	1647	S	1								X		
B-4-7.5-8	19	8/17/20	0912	S	1									X		
B-4-8-9	30	8/17/20	0914	S	1										X	

Friedman & Bruya, Inc.
 3012 16th Avenue West
 Seattle, WA 98119-2029
 Ph. (206) 285-8282

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: <u>P. Osterhach</u>	P. Osterhach	FIS	8/18	1915
Received by: <u>R-2</u>	BISRAJ WADSESE	FBI	1	1
Relinquished by: _____	_____	_____	_____	_____
Received by: _____	_____	Samples received at	4°C	_____

008266

SAMPLE CHAIN OF CUSTODY

ME 08/18/20

BIU

Report To Brett Beaulieu
 Company Floyd Snider
 Address _____
 City, State, ZIP see page 1
 Phone _____ Email _____

SAMPLERS (signature) P. Osterhout

PROJECT NAME BTL PO # _____

REMARKS _____ INVOICE TO _____

Project specific RLs? - Yes / No

Page # 3 of 11

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										Notes	
						NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	ARSENIC	Archive			
B-4-9-10	21	8/17/20	0916	S	1									X			
B-4-10-12	22	↓	0921	↓	1										X		
B-4-12-13	23		0923		1										X		
B-6-7-8	24		0952		1										X		
B-6-8-9	25		0954		1											X	
B-6-9-10	26		0956		1										X		
B-6-10-12	27		1002		1											X	
B-6-12-13	28		1004		1										X		
B-7-7-8	29		1109		1										X		
B-7-8-9	30		↓		11:11	↓	1										X

Friedman & Bruya, Inc.
 3012 16th Avenue West
 Seattle, WA 98119-2029
 Ph. (206) 285-8282

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
<u>P. Osterhout</u>	P. Osterhout	F/S	8/18	10:15
<u>B. Tadesse</u>	BISLAT TADESSE	FBI	1	1
Relinquished by:				
Received by:				
Relinquished by:				
Received by:		Samples received at	4	°C

008264

SAMPLE CHAIN OF CUSTODY

ME 08/18/20 Page # 4 of 11 BTU

Report To Brett Beaulieu
 Company Floyd Snider
 Address _____
 City, State, ZIP see page 1
 Phone _____ Email _____

SAMPLERS (signature) P. Osterhout

PROJECT NAME BTL PO # _____

REMARKS _____ INVOICE TO _____

Project specific RLs? - Yes / No _____

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										Notes
						NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	ARSENIC	Archive		
B-7-9-10	31	8/17/20	11:13	S	1									X		
B-7-11-12	32	↓	11:00		1										X	
B-107-11-12	33		11:02		1										X	
B-7-12-13	34		11:05		1								X			
B-107-12-13	35		11:07		1								X			
B-8-7-8	36		1228		1								X			
B-8-8-9	37		1230		1									X		
B-8-9-10	38		1232		1								X			
B-8-10-11	39		1238		1									X		
B-8-12-13	40		↓	1240	↓	1								X		

Friedman & Bruya, Inc.
 3012 16th Avenue West
 Seattle, WA 98119-2029
 Ph. (206) 285-8282

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
<u>P. Osterhout</u>	P. Osterhout	FIS	8/18	1915
<u>[Signature]</u>	BISMAT TADESSE	FBI	1	1
Received by:		Samples received at	4	°C

008266

SAMPLE CHAIN OF CUSTODY

ME 08/18/20 BDU

Report To Brett Beaulieu
 Company Floyd Snider
 Address _____
 City, State, ZIP see page 1
 Phone _____ Email _____

SAMPLERS (signature) [Signature]
 PROJECT NAME BTL PO # _____
 REMARKS _____ INVOICE TO _____
 Project specific RLs? - Yes / No

Page # 5 of 11
 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										Notes
						NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	Arsenic	Archive		
B-9-7-8	41	8/17/20	1350	S	1									X		
B-9-8-9	42		1352		1									X	X	⊗ - per BB 9/2/20 ME
B-9-9-10	43		1354		1									X		
B-9-10-12	44		1415		1									X	X	
B-9-12-13	45		1417		1									X		
B-10-9-10	46		1420		1									X		
B-10-7-8	47		1436		1									X		
B-10-8-9	48		1438		1										X	
B-10-9-10	49		1440		1									X		
B-10-12-12	50	✓	1456	✓	1										X	

Friedman & Bruya, Inc.
 3012 16th Avenue West
 Seattle, WA 98119-2029
 Ph. (206) 285-8282

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
<u>[Signature]</u>	P. Osterhout	F/S	8/18	1815
<u>[Signature]</u>	BISKAT TADESSE	FBI	1	1
Relinquished by:				
Received by:				
Relinquished by:				
Received by:		Samples received at	4	°C

008266

SAMPLE CHAIN OF CUSTODY

ME 08/18/20

Report To Brett Beaulieu
 Company Floyd Snider
 Address _____
 City, State, ZIP see page 1
 Phone _____ Email _____

SAMPLERS (signature) P. Osterhaut

PROJECT NAME B+L PO # _____

REMARKS _____ INVOICE TO _____

Project specific RLs? - Yes / No _____

Page # 6 of 11 BT4

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										Notes
						NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	Arsenic	Archive		
B-10-12-13	51	8/17/20	1458	S	1									X		
B-11-7-8	52	8/18/20	0805		1									X		
B-11-8-9	53		0807		1										X	
B-11-9-10	54		0809		1									X		
B-11-10-12	55		0814		1										X	
B-11-12-13	56		0816		1									X		
B-112-7-8	57		0825		1									X		
B-12-7-8	58		0828		1									X		
B-12-8-9	59		0830		1										X	
B-12-9-10	60	↓	0832	↓	1									X		

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 Seattle, WA 98119-2029
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SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: <u>P. Osterhaut</u>	<u>P. Osterhaut</u>	<u>FIS</u>	<u>8/18</u>	<u>1815</u>
Received by: <u>DZ</u>	<u>BISKAT TADESSE</u>	<u>FBI</u>	<u>1</u>	<u>1</u>
Relinquished by: _____	_____	_____	_____	_____
Received by: _____	_____	Samples received at <u>4</u> °C	_____	_____

008266

SAMPLE CHAIN OF CUSTODY

ME 08/18/20

BIY

Report To Brett Beaulieu

Company Floyd Snider

Address _____

City, State, ZIP see page 1

Phone _____ Email _____

SAMPLERS (signature) [Signature]

PROJECT NAME BTL PO # _____

REMARKS _____ INVOICE TO _____

Project specific RLs? - Yes / No

Page # 7 of 11

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										Notes	
						NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	Arsenic	Archive			
B-12-10-12	61	8/18/20	0840	S	1												
B-12-12-13	62		0842		1									X			
B-13-7-8	63		0905		1									X			
B-13-8-9	64		0907		1										X		
B-13-9-10	65		0909		1									X			
B-13-10-12	66		0911		1										X		
B-13-12-13	67		0913		1									X			
B-14-7-8	68		0940		1									X			
B-14-8-9	69		0942		1										X		
B-14-9-10	70	↓	0944	↓	1									X			

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Seattle, WA 98119-2029

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SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
<u>[Signature]</u>	P. Osterhoff	FIS	8/18	1815
<u>[Signature]</u>	BIS RAT TADESSC	FBI	1	1
Relinquished by:				
Received by:				
Relinquished by:				
Received by:				
			Samples received at <u>4</u> °C	

008266

SAMPLE CHAIN OF CUSTODY

ME 08/18/20

BIY

Report To Brett Beaulieu
 Company Floyd Snider
 Address _____
 City, State, ZIP _____
 Phone _____ Email _____

SAMPLERS (signature) P. Osterhout

PROJECT NAME B+L PO # _____

REMARKS _____ INVOICE TO _____

Project specific RLs? - Yes / No

Page # 8 of 11

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										Notes		
						NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	ARSENIC	ARCHIVE				
B-14-10-12	71	8/18/20	0949	S	1													
B-14-12-13	72	↓	0951		1									X				
B-15-7-8	73		1008		1									X				
B-15-8-9	74		1010		1											X		
B-15-9-10	75		1012		1										X			
B-15-10-12	76		1016		1											X		
B-15-12-13	77		1018		1										X			
B-1-8-9	78		1105		1											X		
B-1-9-10	79		1107		1										X			
B-1-10-12	80	↓	1115	↓	1										X			

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 Seattle, WA 98119-2029
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SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
<u>P. Osterhout</u>	P. Osterhout	F/S	8/18	1815
<u>[Signature]</u>	BISWAT TADOSE	FBI	1	1
Received by:		Samples received at	4	°C

SAMPLE CHAIN OF CUSTODY

ME 08/18/20 BIV
 Page # 9 of 11

Report To Brett Beaulieu
 Company Floyd Snider
 Address _____
 City, State, ZIP see page 1
 Phone _____ Email _____

SAMPLERS (signature) P. Osterhant

PROJECT NAME B+L PO # _____

REMARKS _____ INVOICE TO _____

Project specific RLs? - Yes / No _____

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										Notes
						NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	ARSENIC	Archive		
B-101-12-13	81	8/18/20	1117	S	1									X		
B-103-8-9	82		1142		1										X	
B-16-0-1	83		1352		1									X		
B-16-1-2	84		1353		1										X	
B-16-2-3	85		1354		1									X		
B-16-3-5	86		1355		1										X	
B-16-5-6	87		1356		1									X		
B-17-0-1	88		1414		1									X		
B-17-1-2	89		1415		1										X	
B-17-2-3	90	↓	1416	↓	1									X		

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SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
<u>P. Osterhant</u>	P. Osterhant	FIS	8/18	1015
<u>B. F.</u>	BISKAT TAPESSE	FBI	1	1
Received by: _____		Samples received at	4	°C

SAMPLE CHAIN OF CUSTODY

ME 08/18/20 BZY

Report To Brett Beaulieu
 Company Floyd Smider
 Address _____
 City, State, ZIP see page 1
 Phone _____ Email _____

SAMPLERS (signature) P. Osterhaut

PROJECT NAME BTL PO # _____

REMARKS _____ INVOICE TO _____

Project specific RLs? - Yes / No _____

Page # 10 of 11

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										Notes		
						NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	ARBNIC	Archive				
B-17-3-5	91	8/18/20	1417	S	1											X		
B-17-5-6	92	↓	1418	↓	1											X		
B-18-0-1	93		1442		1												X	
B-18-1-2	94		1443		1												X	
B-18-2-3	95		1444		1												X	
B-18-3-5	96		1445		1												X	
B-18-5-6	97		1446		1												X	
B-19-0-1	98		1508		1												X	
B-19-1-2	99		1509		1												X	
B-19-2-3	100		1510		1												X	

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SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: <u>P. Osterhaut</u>	P. Osterhaut	FIS	8/18	185
Received by: <u>B. S. F.</u>	BISKAT TAPESSE	FBI	1	1
Relinquished by: _____				
Received by: _____		Samples received at	4	°C

008266

SAMPLE CHAIN OF CUSTODY

ME 08/18/20

BEU

Report To Brett Beaulieu
 Company Floyd Snider
 Address _____
 City, State, ZIP see page 1
 Phone _____ Email _____

SAMPLERS (signature) [Signature]

PROJECT NAME BTL PO # _____

REMARKS _____ INVOICE TO _____

Project specific RLs? - Yes / No _____

Page # 11 of 11

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										Notes	
						NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	ARSENIC	ARCHIVE			
B-19-3-5	101	8/18/20	1511	S	1											X	
B-19-5-6	102	8/18/20	1512	S	1											X	
PO																	

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SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
<u>[Signature]</u>	P. Osterhout	F/S	8/18	1815
<u>[Signature]</u>	BRAT TARESE	FBI	1	1
Received by:		Samples received at	4 °C	

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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

November 16, 2020

Brett Beaulieu, Project Manager
Floyd-Snider
Two Union Square, Suite 600
601 Union St
Seattle, WA 98101

Dear Mr Beaulieu:

Included are the additional results from the testing of material submitted on August 18, 2020 from the B+L, F&BI 008266 project. There are 10 pages included in this report.

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
FDS1116R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on August 18, 2020 by Friedman & Bruya, Inc. from the Floyd-Snider B+L, F&BI 008266 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Floyd-Snider</u>
008266 -01	B-1-7-7.5
008266 -02	B-1-11-12
008266 -03	B-1-12-13
008266 -04	B-2-7-8
008266 -05	B-2-8-9
008266 -06	B-2-9-10
008266 -07	B-2-10-11
008266 -08	B-2-11-12
008266 -09	B-3-7.5-8
008266 -10	B-3-8-9
008266 -11	B-3-9-10
008266 -12	B-3-10-12
008266 -13	B-3-12-13
008266 -14	B-5-7-8
008266 -15	B-5-8-9
008266 -16	B-5-9-10
008266 -17	B-5-10-12
008266 -18	B-5-12-13
008266 -19	B-4-7.5-8
008266 -20	B-4-8-9
008266 -21	B-4-9-10
008266 -22	B-4-10-12
008266 -23	B-4-12-13
008266 -24	B-6-7-8
008266 -25	B-6-8-9
008266 -26	B-6-9-10
008266 -27	B-6-10-12
008266 -28	B-6-12-13
008266 -29	B-7-7-8
008266 -30	B-7-8-9
008266 -31	B-7-9-10
008266 -32	B-7-11-12
008266 -33	B-107-11-12
008266 -34	B-7-12-13
008266 -35	B-107-12-13

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE (CONTINUED)

<u>Laboratory ID</u>	<u>Floyd-Snider</u>
008266 -36	B-8-7-8
008266 -37	B-8-8-9
008266 -38	B-8-9-10
008266 -39	B-8-10-11
008266 -40	B-8-12-13
008266 -41	B-9-7-8
008266 -42	B-9-8-9
008266 -43	B-9-9-10
008266 -44	B-9-10-12
008266 -45	B-9-12-13
008266 -46	B-109-9-10
008266 -47	B-10-7-8
008266 -48	B-10-8-9
008266 -49	B-10-9-10
008266 -50	B-10-12-12
008266 -51	B-10-12-13
008266 -52	B-11-7-8
008266 -53	B-11-8-9
008266 -54	B-11-9-10
008266 -55	B-11-10-12
008266 -56	B-11-12-13
008266 -57	B-112-7-8
008266 -58	B-12-7-8
008266 -59	B-12-8-9
008266 -60	B-12-9-10
008266 -61	B-12-10-12
008266 -62	B-12-12-13
008266 -63	B-13-7-8
008266 -64	B-13-8-9
008266 -65	B-13-9-10
008266 -66	B-13-10-12
008266 -67	B-13-12-13
008266 -68	B-14-7-8
008266 -69	B-14-8-9
008266 -70	B-14-9-10

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE (CONTINUED)

<u>Laboratory ID</u>	<u>Floyd-Snider</u>
008266 -71	B-14-10-12
008266 -72	B-14-12-13
008266 -73	B-15-7-8
008266 -74	B-15-8-9
008266 -75	B-15-9-10
008266 -76	B-15-10-12
008266 -77	B-15-12-13
008266 -78	B-1-8-9
008266 -79	B-1-9-10
008266 -80	B-1-10-12
008266 -81	B-101-12-13
008266 -82	B-103-8-9
008266 -83	B-16-0-1
008266 -84	B-16-1-2
008266 -85	B-16-2-3
008266 -86	B-16-3-5
008266 -87	B-16-5-6
008266 -88	B-17-0-1
008266 -89	B-17-1-2
008266 -90	B-17-2-3
008266 -91	B-17-3-5
008266 -92	B-17-5-6
008266 -93	B-18-0-1
008266 -94	B-18-1-2
008266 -95	B-18-2-3
008266 -96	B-18-3-5
008266 -97	B-18-5-6
008266 -98	B-19-0-1
008266 -99	B-19-1-2
008266 -100	B-19-2-3
008266 -101	B-19-3-5
008266 -102	B-19-5-6

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-16-1-2	Client:	Floyd-Snider
Date Received:	08/18/20	Project:	B+L, F&BI 008266
Date Extracted:	11/12/20	Lab ID:	008266-84
Date Analyzed:	11/12/20	Data File:	008266-84.139
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
----------	------------------------------

Arsenic	10.4
---------	------

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-17-1-2	Client:	Floyd-Snider
Date Received:	08/18/20	Project:	B+L, F&BI 008266
Date Extracted:	11/12/20	Lab ID:	008266-89
Date Analyzed:	11/12/20	Data File:	008266-89.140
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
----------	------------------------------

Arsenic	10.5
---------	------

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-18-1-2	Client:	Floyd-Snider
Date Received:	08/18/20	Project:	B+L, F&BI 008266
Date Extracted:	11/12/20	Lab ID:	008266-94
Date Analyzed:	11/12/20	Data File:	008266-94.141
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
----------	------------------------------

Arsenic	11.8
---------	------

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-19-1-2	Client:	Floyd-Snider
Date Received:	08/18/20	Project:	B+L, F&BI 008266
Date Extracted:	11/12/20	Lab ID:	008266-99
Date Analyzed:	11/12/20	Data File:	008266-99.142
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
----------	------------------------------

Arsenic	11.0
---------	------

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	B+L, F&BI 008266
Date Extracted:	11/12/20	Lab ID:	I0-703 mb
Date Analyzed:	11/12/20	Data File:	I0-703 mb.094
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
----------	------------------------------

Arsenic	<1
---------	----

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/16/20
Date Received: 08/18/20
Project: B+L, F&BI 008266

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

Laboratory Code: 011183-01 (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	6.67	94 b	63 b	75-125	39 b

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	97	80-120

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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.

008266

SAMPLE CHAIN OF CUSTODY

ME 08/18/20 BT4
Page # 1 of 11

Report To Brett Beaulieu
 Company Floyd Snider
 Address 601 Union St, Ste 600
 City, State, ZIP Seattle, WA 98101
 Phone 206-292-2070 Email Brett.Beaulieu@FloydSnider.com

SAMPLERS (signature) [Signature]
 PROJECT NAME B+L PO # _____
 REMARKS _____ INVOICE TO _____
 Project specific RLs? - Yes / No

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											Notes
						NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	Total Arsenic	ARCHIVE			
B-1-7-7.5	01	8/12/20	10:36	S	1									X			
B-1-11-12	02		10:35	S	1										X		
B-1-12-13	03		10:50	S	1									X			
B-2-7-8	04		1238	S	1									X			
B-2-8-9	05		1240	S	1										X		
B-2-9-10	06		1242	S	1									X			
B-2-10-11	07		1418	S	1										X		
B-2-11-12	08		1420	S	1									X			
B-3-7.5-8	09	↓	1512	S	1									X			
B-3-8-9	10	↓	1515	S	1										X		

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SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: <u>[Signature]</u>	<u>Pamela Osterhout</u>	<u>FIS</u>	<u>8/18/20</u>	<u>185</u>
Received by: <u>[Signature]</u>	<u>BISRAJ TADOSSE</u>	<u>FBI</u>	<u>1</u>	<u>1</u>
Relinquished by:				
Received by:				

Samples received at 4 °C

008266

SAMPLE CHAIN OF CUSTODY

ME 08/18/20

Page # 2 of 11 BTL

Report To Brett Beaulieu
 Company Floyd Snider
 Address _____
 City, State, ZIP see page 1
 Phone _____ Email _____

SAMPLERS (signature) <u>P. Osterhacht</u>		TURNAROUND TIME <input checked="" type="checkbox"/> Standard turnaround <input type="checkbox"/> RUSH Rush charges authorized by: _____
PROJECT NAME <u>BTL</u>	PO #	SAMPLE DISPOSAL <input type="checkbox"/> Archive samples <input type="checkbox"/> Other <input checked="" type="checkbox"/> (Default): Dispose after 30 days
REMARKS	INVOICE TO	
Project specific RLs? - Yes / No		

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	ANALYSES REQUESTED										Notes
						NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	ARSENIC	ARCHIVE		
B-3-9-10	11	8/12/20	1517	S	1								X			
B-3-10-12	12		1519	S	1									X		
B-3-12-13	13		1521	S	1								X			
B-5-7-8	14		1615	S	1								X			
B-5-8-9	15		1628	S	1									X		
B-5-9-10	16		1630	S	1								X			
B-5-10-12	17		1632	S	1									X		
B-5-12-13	18	↓	1647	S	1								X			
B-4-7.5-8	19	8/17/20	0912	S	1								X			
B-4-8-9	20	8/17/20	0914	S	1									X		

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SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: <u>P. Osterhacht</u>	P. Osterhacht	FIS	8/18	1915
Received by: <u>RZ</u>	BISRAJ TADESSE	FBI	1	1
Relinquished by:				
Received by:		Samples received at	4°C	

008266

SAMPLE CHAIN OF CUSTODY

ME 08/18/20

BIU

Report To Brett Beaulieu
 Company Floyd Snider
 Address _____
 City, State, ZIP see page 1
 Phone _____ Email _____

SAMPLERS (signature) Pullstait

PROJECT NAME BTL PO # _____

REMARKS _____ INVOICE TO _____

Project specific RLs? - Yes / No _____

Page # 3 of 11

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										Notes
						NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	ARSENIC	ARCHIVE		
B-4-9-10	21	8/17/20	0916	S	1								X			
B-4-10-12	22		0921		1									X		
B-4-12-13	23		0923		1								X			
B-6-7-8	24		0952		1								X			
B-6-8-9	25		0954		1									X		
B-6-9-10	26		0956		1								X			
B-6-10-12	27		1002		1									X		
B-6-12-13	28		1004		1								X			
B-7-7-8	29		1109		1								X			
B-7-8-9	30	∨	11:11	∨	1									X		

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SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: <u>Pullstait</u>	P. Osterhout	F/S	8/18	1015
Received by: <u>R.F.</u>	BISKAT TADESSÉ	FBI	1	1
Relinquished by:				
Received by:		Samples received at	9 ⁰⁰	

008266
 Report To Brett Beaulieu
 Company Floyd Snider
 Address _____
 City, State, ZIP see page 1
 Phone _____ Email _____

SAMPLE CHAIN OF CUSTODY

ME 08/18/20 Page # 4 of 11 BTL

SAMPLERS (signature) [Signature]
 PROJECT NAME BTL PO # _____
 REMARKS _____ INVOICE TO _____
 Project specific RLs? - Yes / No _____

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										Notes
						NWTPH-DX	NWTPH-GX	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	ARSENIC	Archive		
B-7-9-10	31	8/17/20	11:13	S	1								X			
B-7-11-12	32		11:00		1									X		
B-107-11-12	33		11:02		1									X		
B-7-12-13	34		11:05		1								X			
B-107-12-13	35		11:07		1								X			
B-8-7-8	36		1228		1								X			
B-8-8-9	37		1230		1									X		
B-8-9-10	38		1232		1								X			
B-8-10-11	39		1238		1									X		
B-8-12-13	40	✓	1240	✓	1								X			

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SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
<u>[Signature]</u>	P. Osterhaut	F/S	8/18	1015
<u>[Signature]</u>	BISNAT TADESSE	FBI	1	1
Received by:		Samples received at <u>4</u> °C		

008266

SAMPLE CHAIN OF CUSTODY

ME 08/18/20 BI4

Report To Brett Beaulieu
 Company Floyd Snider
 Address _____
 City, State, ZIP see page 1
 Phone _____ Email _____

SAMPLERS (signature) [Signature]
 PROJECT NAME BTL PO # _____
 REMARKS _____ INVOICE TO _____
 Project specific RLs? - Yes / No _____

Page # 5 of 11
 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										Notes	
						NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	Arsenic	Archive			
B-9-7-8	41	8/17/20	1350	S	1									X			
B-9-8-9	42		1352		1									X	X		Ⓢ-per BB
B-9-9-10	43		1354		1									X			9/2/20 ME
B-9-10-12	44		1415		1									X	X		
B-9-12-13	45		1417		1									X			
B-10-9-10	46		1420		1									X			
B-10-7-8	47		1436		1									X			
B-10-8-9	48		1438		1										X		
B-10-9-10	49		1440		1									X			
B-10-12-12	50	✓	1456	✓	1										X		

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SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
<u>[Signature]</u>	POSTERHOUT	F/S	8/18	1815
<u>[Signature]</u>	BISKAT TADESS	FBI	1	1
Received by:				
Samples received at <u>4</u> °C				

008266

SAMPLE CHAIN OF CUSTODY

ME 08/18/20

Report To Brett Beaulieu
 Company Floyd Snider
 Address _____
 City, State, ZIP _____
 Phone _____ Email _____

see page 1

SAMPLERS (signature) P. Osterhaut

PROJECT NAME B+L PO # _____

REMARKS _____ INVOICE TO _____

Project specific RLs? - Yes / No _____

Page # 6 of 11 Bty

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										Notes
						NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	ATBENIC	Archive		
B-10-12-13	51	8/17/20	1458	S	1									X		
B-11-7-8	52	8/18/20	0805		1									X		
B-11-8-9	53		0807		1										X	
B-11-9-10	54		0809		1									X		
B-11-10-12	55		0814		1										X	
B-11-12-13	56		0816		1									X		
B-112-7-8	57		0825		1									X		
B-12-7-8	58		0828		1									X		
B-12-8-9	59		0830		1										X	
B-12-9-10	60	↓	0832	↓	1									X		

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SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
<u>P. Osterhaut</u>	<u>P. Osterhaut</u>	<u>FIS</u>	<u>8/18</u>	<u>1815</u>
<u>DZ F</u>	<u>BISKAT TADESSE</u>	<u>FBI</u>	<u>1</u>	<u>1</u>
Received by:		Samples received at	<u>40C</u>	

008266
 Report To Brett Beaudin
 Company Floyd Snider
 Address _____
 City, State, ZIP see page 1
 Phone _____ Email _____

SAMPLE CHAIN OF CUSTODY ME 08/18/20 BI4

SAMPLERS (signature) [Signature]
 PROJECT NAME BTL PO # _____
 REMARKS _____ INVOICE TO _____
 Project specific RLs? - Yes / No

Page # 7 of 11
 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										Notes	
						NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	Arsenic	Archive			
B-12-10-12	61	8/18/20	0840	S	1											X	
B-12-12-13	62		0842		1											X	
B-13-7-8	63		0905		1											X	
B-13-8-9	64		0907		1											X	
B-13-9-10	65		0909		1											X	
B-13-10-12	66		0911		1											X	
B-13-12-13	67		0913		1											X	
B-14-7-8	68		0940		1											X	
B-14-8-9	69		0942		1											X	
B-14-9-10	70	↓	0944	↓	1											X	

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SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
<u>[Signature]</u>	P. Osterhoff	FIS	8/18	1815
<u>[Signature]</u>	BIS RAT TADESSC	FBI	1	1
Received by:		Samples received at <u>4</u> °C		

008266

SAMPLE CHAIN OF CUSTODY ME 08/18/20

BZY Page # 8 of 11

Report To Brett Beaulieu
 Company Floyd Snider
 Address _____
 City, State, ZIP see page 1
 Phone _____ Email _____

SAMPLERS (signature) P. Osterhout
 PROJECT NAME B+L PO # _____
 REMARKS _____ INVOICE TO _____
 Project specific RLs? - Yes / No _____

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										Notes	
						NWTPH-DX	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	Arsenic	Archive			
B-14-10-12	71	8/18/20	0949	S	1												
B-14-12-13	72	↓	0951		1								X				
B-15-7-8	73		1008		1								X				
B-15-8-9	74		1010		1								X				
B-15-9-10	75		1012		1								X				
B-15-10-12	76		1016		1								X				
B-15-12-13	77		1018		1								X				
B-1-8-9	78		1105		1								X				
B-1-9-10	79		1107		1								X				
B-1-10-12	80		↓	1115	↓	1								X			

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SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: <u>P. Osterhout</u>	P. Osterhout	F/S	8/18	1815
Received by: <u>[Signature]</u>	BISWAT TADOSE	FBI	1	1
Relinquished by: _____				
Received by: _____		Samples received at	4 °C	

008266
 Report To Brett Beaulieu
 Company Floyd Soder
 Address _____
 City, State, ZIP see page 1
 Phone _____ Email _____

SAMPLE CHAIN OF CUSTODY

SAMPLERS (signature) P. Osterhaut
 PROJECT NAME B+L PO # _____
 REMARKS _____ INVOICE TO _____
 Project specific RLs? - Yes / No

ME 08/18/20
 Page # 9 of 11

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										Notes
						NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	ARSENIC	ARCHIVE		
B-101-12-13	81	8/18/20	1117	S	1								X		✓ per BB	
B-103-8-9	82		1142		1									X	11/10	
B-16-0-1	83		1352		1								X			
B-16-1-2	84		1353		1								✓	X		
B-16-2-3	85		1354		1								X			
B-16-3-5	86		1355		1									X		
B-16-5-6	87		1356		1								X			
B-17-0-1	88		1414		1								X			
B-17-1-2	89		1415		1								✓	X		
B-17-2-3	90		1416		1								X			

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SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
<u>P. Osterhaut</u>	P. Osterhaut	FIS	8/18	105
<u>B. Soder</u>	BISKAT TADRESSE	FBI	1	1
Received by:				
Samples received at <u>4</u> °C				

Report To Brett Beaulieu
 Company Floyd Sneider
 Address _____
 City, State, ZIP see page 1
 Phone _____ Email _____

SAMPLE CHAIN OF CUSTODY ME 08/18/20 BZY

SAMPLERS (signature) P. Osterhaut
 PROJECT NAME B+L PO # _____
 REMARKS _____ INVOICE TO _____
 Project specific RLs? - Yes / No

Page # 10 of 11
 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										Notes	
						NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	AROMATIC	Archive			
B-17-3-5	91	8/18/20	1417	S	1											X	✓ - per BS
B-17-5-6	92		1418		1											X	
B-18-0-1	93		1442		1											X	11/10
B-18-1-2	94		1443		1											✓	X
B-18-2-3	95		1444		1											X	
B-18-3-5	96		1445		1											X	X
B-18-5-6	97		1446		1											X	
B-19-0-1	98		1508		1											X	
B-19-1-2	99		1509		1											✓	X
B-19-2-3	100		1510		1											X	

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SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
<u>P. Osterhaut</u>	P. Osterhaut	FIS	8/18	185
<u>Bisrat Tadesse</u>	BISRAT TADESSE	FBI	1	1
Received by:		Samples received at	4 °C	

008266

SAMPLE CHAIN OF CUSTODY

ME 08/18/20

BIU

Report To Brett Beaulieu
 Company Floyd Snider
 Address _____
 City, State, ZIP see page 1
 Phone _____ Email _____

SAMPLERS (signature) [Signature]
 PROJECT NAME BTL PO # _____
 REMARKS _____ INVOICE TO _____
 Project specific RLs? - Yes / No _____

Page # 11 of 11
 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										Notes
						NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	Arsenic	Archive		
B-19-3-5	101	8/18/20	1511	S	1											
B-19-5-6	102	8/18/20	1512	S	1								X	X		
PO																

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SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
<u>[Signature]</u>	P. Osterhoff	F/S	8/18	1815
<u>[Signature]</u>	BKRAT TAYLOR	FBI	1	1
Received by:		Samples received at	4 °C	

B&L Woodwaste Site

West Boundary

Soil Investigation Report

Appendix D

Statistical Evaluation Output

Compliance calculations

In Situ Arsenic Concentrations in vicinity of South and West Ditch

Sample Count	Results (mg/kg)	Sample ID			
1	1	SD-50'-C-2			
2	1	WD-13.5'-W-4			
3	1	WD-25'-W-4			
4	1	B-2-11-12	Number of samples	132	Uncensored values
5	1	B-4-12-13	Uncensored		Mean
6	1	B-13-9-10	Censored	2	Lognormal mean
7	1	B-17-5-6	Detection limit or PQL	1	Std. devn.
8	1.01	WD-13.5'-C-4	Method detection limit	1	8.89920046
9	1.07	SD-183'-N-B	TOTAL	134	Median
10	1.15	B-1-9-10			Min.
11	1.18	B-11-9-10			Max.
12	1.23	SD-225'-C			
13	1.25	B-12-12-13	Lognormal distribution?		Normal distribution?
14	1.31	B-9-10-12	r-squared is:	0.966	r-squared is:
15	1.32	B-9-12-13			0.630
16	1.33	B-1-12-13	Recommendations:		
17	1.34	B-8-12-13	Use lognormal distribution.		
18	1.34	B-11-12-13			
19	1.38	B-3-12-13			
20	1.47	B-13-12-13			
21	1.52	B-7-9-10			
22	1.54	B-10-9-10			
23	1.55	B-101-12-13	UCL (Land's method) is	7.49647284054597	
24	1.64	B-2-9-10			Simple substitution used with censored values.
25	1.65	B-5-7-8			
26	1.71	SD-183'-N-5			
27	1.78	SD-250'-C			
28	1.78	B-12-9-10			
29	1.84	AV-20-3-4			
30	1.88	AV-19-3-4			
31	1.97	SD-10'-S			
32	1.97	B-13-7-8			
33	2	B-10-12-13			
34	2.01	B-7-12-13			
35	2.01	B-107-12-13			
36	2.06	SD-133'-N-B			
37	2.08	B-1-7-7.5			
38	2.08	B-3-7.5-8			
39	2.2	WD-125'-C			
40	2.21	SD-200'-C			
41	2.24	WD-13.5'-W-2			
42	2.24	SD-158'-N-5			
43	2.3	B-5-12-13			
44	2.35	B-8-7-8			
45	2.36	B-4-9-10			
46	2.36	B-16-5-6			
47	2.38	B-3-9-10			
48	2.39	B-2-7-8			
49	2.41	B-15-12-13			
50	2.45	SD-133'-N-5			
51	2.52	SD-150'-C			
52	2.53	SD-125'-C			
53	2.53	WD-75'-C			
54	2.53	B-16-2-3			
55	2.56	B-14-9-10			

Compliance calculations

In Situ Arsenic Concentrations in vicinity of South and West Ditch

Sample Count	Results (mg/kg)	Sample ID
56	2.56	B-14-12-13
57	2.56	B-17-2-3
58	2.75	SD-158'-N-B
59	2.8	B-18-5-6
60	2.87	B-18-2-3
61	2.89	B-5-9-10
62	2.9	SD-108'-N-5
63	2.91	SD-300'-C
64	2.95	SD-175'-C
65	2.95	SD-308'-N
66	2.97	SD-275'-C
67	2.99	B-109-9-10
68	3.21	B-7-7-8
69	3.22	B-9-9-10
70	3.27	B-10-7-8
71	3.29	SD-83'-N-B
72	3.34	WD-125'-E
73	3.46	WD-25'-C
74	3.54	WD-25a'-C
75	3.54	SD-208'-N
76	3.87	B-6-9-10
77	4.08	WD-75'-W
78	4.27	WD-25'-E
79	4.36	SD-283'-N
80	4.36	B-15-9-10
81	4.39	B-19-2-3
82	4.62	WD-25'-W-2
83	4.84	SD-350'-C
84	4.97	WD-75'-E
85	4.98	WD-125'-W
86	5.19	B-6-12-13
87	5.24	B-8-9-10
88	5.51	B-11-7-8
89	5.61	WD-25'-W
90	5.64	B-15-7-8
91	5.65	B-6-7-8
92	6	B-14-7-8
93	6.11	SD-375'-W
94	6.24	SD-258'-N
95	6.53	SD-240'-S
96	6.76	B-19-5-6
97	6.87	WD-145'-S
98	7.57	B-9-8-9
99	7.8	SD-290'-S
100	7.89	SD-340'-S
101	8.41	SD-233'-N
102	8.53	B-4-7.5-8
103	8.64	SD-11'-N-20
104	9.32	SD-75'-C
105	9.95	WD-50'-E
106	10.4	B-16-1-2
107	10.5	B-17-1-2
108	11	B-19-1-2
109	11.8	SD-100'-C
110	11.8	B-18-1-2

Compliance calculations

In Situ Arsenic Concentrations in vicinity of South and West Ditch

Sample Count	Results (mg/kg)	Sample ID
111	12.2	B-12-7-8
112	12.8	SD-10'-C2
113	13.5	WD-50'-W
114	13.7	WD-50'-C
115	14.8	SD-165'-S
116	15.3	AV-20-5-6
117	15.5	SD-108'-N-B
118	15.6	SD-315'-S
119	15.9	AV-19-5-6
120	16.8	B-112-7-8
121	17.9	SD-265'-S
122	20.3	SD-358'-N
123	20.9	B-19-0-1
124	21.3	SD-0'-E
125	22.4	SD-333'-N
126	23.5	B-16-0-1
127	23.5	B-18-0-1
128	26.5	B-9-7-8
129	29.5	B-17-0-1
130	33.1	SD-325'-C
131	35	SD-30'-C2
132	69.7	WD-25'-C-2