West Boundary Soil Investigation Report

Prepared for

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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 63 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

Twelve 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 in WAC 173-340-740(7)(c)(iv)(A). The addition of five low-level exceedances and 58 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 MTCAStat with inclusion of the 2020 results, is calculated to be 7.3 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 (63 new samples and 65 previous samples total 128 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

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- 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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Table

Table 3.1
August 2020 Soil Arsenic Results

			Analyte	Arsenic				
	mg/kg							
	Site Cleanup Level							
Location Name	Field Sample ID	Sample Date	Depth Range (feet)					
Western Boundary	<u> </u>							
,	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	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				
	B-101-12-13	08/18/2020	12–13	1.55				
	B-2-7-8	08/12/2020	7–8	2.39				
	B-2-8-9	08/12/2020	8–9					
B-2	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-3-7.5-8	08/12/2020	7.5–8	2.08				
	B-3-8-9	08/12/2020	8–9					
	B-103-8-9	08/18/2020	8–9					
B-3	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-4-7.5-8	08/17/2020	7.5–8	8.53				
	B-4-8-9	08/17/2020	8–9					
B-4	B-4-9-10	08/17/2020	9–10	2.36				
5 4	B-4-10-12	08/17/2020	10–12					
	B-4-12-13	08/17/2020	12–13	1.00 U				
	B-5-7-8	08/12/2020	7–8	1.65				
	B-5-8-9	08/12/2020	8–9					
B-5	B-5-9-10	08/12/2020	9–10	2.89				
<i>D S</i>	B-5-10-12	08/12/2020	10–12	2.03				
	B-5-12-13	08/12/2020	12–13	2.30				
	B-6-7-8	08/17/2020	7–8	5.65				
	B-6-8-9	08/17/2020	8–9	3.03				
B-6	B-6-9-10	08/17/2020	9–10	3.87				
5 0	B-6-10-12	08/17/2020	10–12					
	B-6-12-13	08/17/2020	12–13	5.19				
	B-7-7-8	08/17/2020	7–8	3.21				
	B-7-7-8 B-7-8-9	08/17/2020	7–8 8–9					
	B-7-8-9 B-7-9-10	08/17/2020	9–10	1.52				
B-7	B-7-9-10 B-7-11-12	08/17/2020	9-10 11-12	1.32				
<i>5-7</i>		08/17/2020	11–12					
	B-107-11-12 B-7-12-13			2.01				
	B-7-12-13	08/17/2020	12–13					
	B-107-12-13	08/17/2020	12–13	2.01				

Table 3.1
August 2020 Soil Arsenic Results

			Analyte	Arsenic
			Unit	mg/kg
	20			
Location Name	Field Sample ID	Sample Date	Depth Range (feet)	
Western Boundary		·		
_	B-8-7-8	08/17/2020	7–8	2.35
	B-8-8-9	08/17/2020	8–9	
B-8	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-9-7-8	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
B-9	B-109-9-10	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-10-7-8	08/17/2020	7–8	3.27
	B-10-8-9	08/17/2020	8–9	
B-10	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-11-7-8	08/18/2020	7–8	5.51
	B-11-8-9	08/18/2020	8–9	
B-11	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-12-7-8	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	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-13-7-8	08/18/2020	7–8	1.97
	B-13-8-9	08/18/2020	8–9	
B-13	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-14-7-8	08/18/2020	7–8	6.00
	B-14-8-9	08/18/2020	8–9	
B-14	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-15-7-8	08/18/2020	7–8	5.64
	B-15-8-9	08/18/2020	8–9	
B-15	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
	Cleanup Level	20		
			Depth Range	
Location Name	Field Sample ID	Sample Date	(feet)	
MW-33 Area				
	B-16-0-1	08/18/2020	0–1	23.5
	B-16-1-2	08/18/2020	1–2	
B-16	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-17-0-1	08/18/2020	0–1	29.5
	B-17-1-2	08/18/2020	1–2	
B-17	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-18-0-1	08/18/2020	0–1	23.5
	B-18-1-2	08/18/2020	1–2	
B-18	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-19-0-1	08/18/2020	0–1	20.9
	B-19-1-2	08/18/2020	1–2	
B-19	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

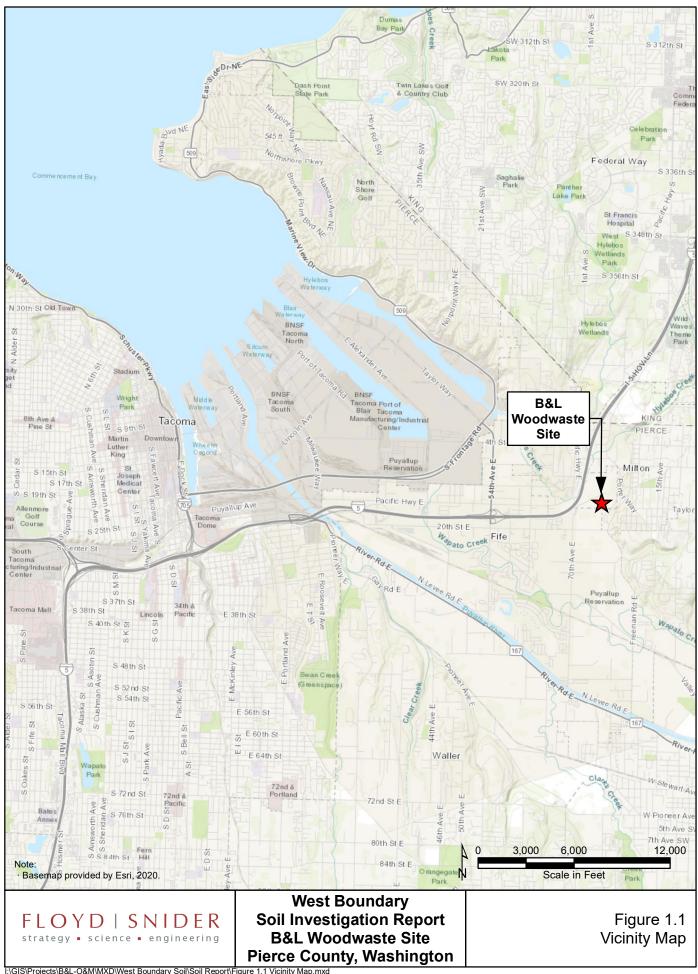
Qualifier:

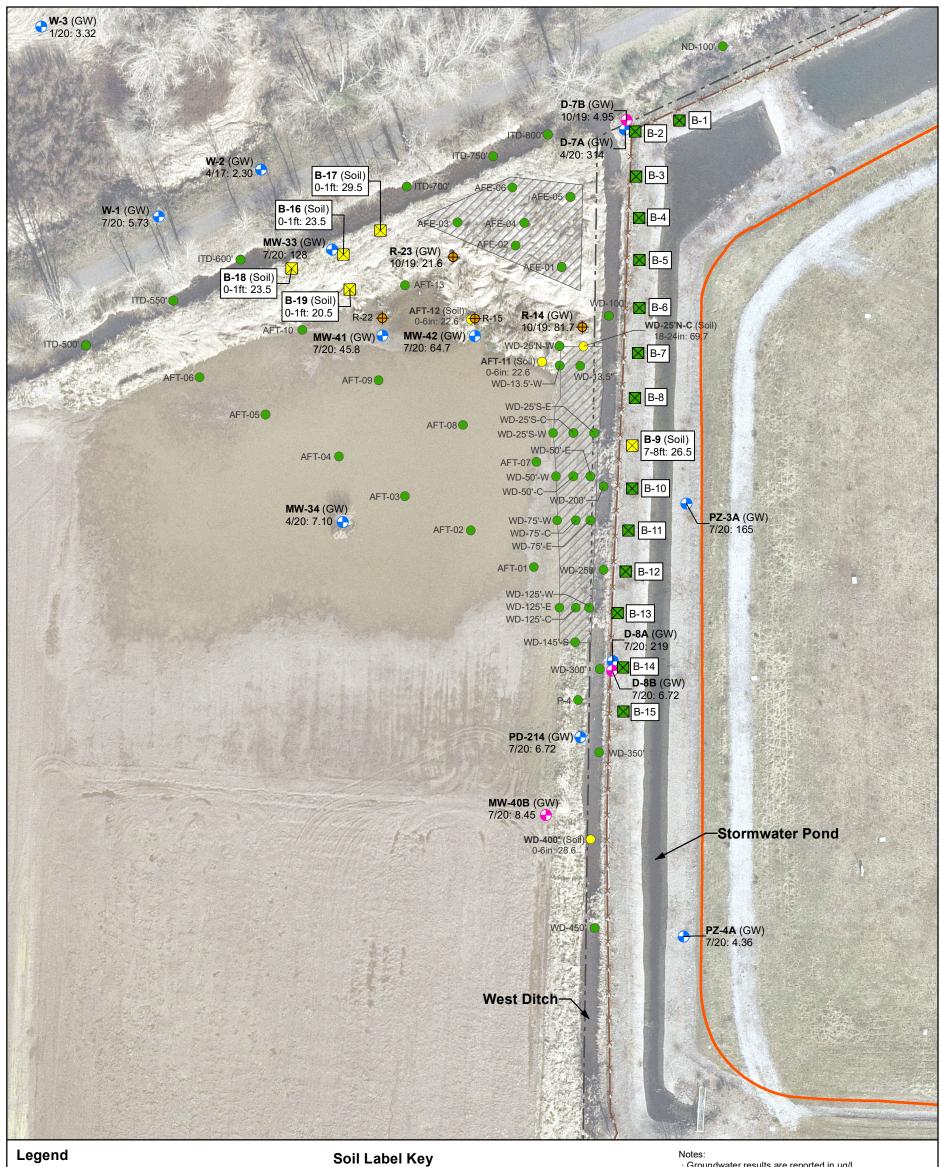
U Analyte was not detected at the given reporting limit.

August 2020 Soil Arsenic Results

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Figures





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

Groundwater Label Key

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

- Groundwater results are reported in µg/L.
- Soil results are reported in mg/kg; only exceedances are
- 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
- Orthoimagery obtained from Nearmap, March 2020.

Abbreviations: ft = Feet GW = Groundwater in = Inches μ g/L = Micrograms per liter mg/kg = Milligrams per kilogram



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West Boundary Soil Investigation Report B&L Woodwaste Site Pierce County, Washington

Figure 1.2 August 2020 Soil Arsenic Results

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Appendix A Boring Logs

l . –	_	YDISNIDER BYL LOGGED BY: PROJECT: LOGGED BY: P. Osterbout	LOC. NIN Cay	() CO1	ner F D	of 7 SYS	land TEM:	B-1 METT ID:
DRILL			NOR	THIN	G:			EASTING:
DRILL DRILL DP SAMP	ING E	QUIPMENT: METHOD: disposable liner	TOTA IG	NAL DI	CON EPTH COPK	もら I (ft bg)	js):	DEPTH TO WATER (ft bgs): 7 DRILL DATE: 8 12 20
Depth (feet)	nscs	Description		, Drive	Recovery	# of Blow's		Sample ID
0 1 2 3		Gravel ground Surface No recovery						
4 5 6	SW.	Brown to gray Sifty gravelly SAND to sardy gravelly SILT dry to moist (sample collected from bottom of drive 4-7.5)	•	1				
8 9 10		No recovery (7.5-11' bgs)		1				B1-7-7.5 @ 10:36
11	SP	Gray SAND, saturated s-r gravel-trace	•	1	T	-		B-1-11-12 @ 1035
13 14 15	SP	Dark brown SAND fine, trace grawel, wet, red sand grains abundant						B-1-12-13 @ 1656
16 17								
18								
ft bg		TIONS: et below ground surface USCS = Unified Soil Classification System ts per million = denotes groundwater table	ES: MOV	ed t d	over rtye	000	d ra	e-drilled to re-attempt recovered 4")

_	YDISNIDER * science * engineering LOGGED BY: **R. OSTERNOUT		ATIO		SYS ⁻	ГЕМ:	WELL ID:
DRILLED BY: Cascade - Scott DRILLING EQUIPMENT: Geograboe 7822				G:			EASTING:
D.P. SAMPLING I	ETHOD:) BOR	AL DE				DEPTH TO WATER (ft bgs): S DRILL DATE: DID 20
Depth (feet) USCS	Description		Drive	Recovery	# of Blows	PID (ppm)	Sample ID
7	Gray gravelly, sitty SANO dry to	moist					(Sample 7-7.5 collected on 8/12)
9 SM 10 11 12 SP 13 14	Brown very fine SAND w Silt, wet trace organics SATA gradus to fine SAND, saturated. Bottom of boring = 15' bgs						B-1-8-9 @ 11:05 B-1-9-10@ 11:07 B-1-10-12@ 11:15 B-101-12-13@ 11:17 (Sample 12-13' collected on 8/12)
16 17 18 19 20 ABBREVIAT ft bgs = fee		NOTES: D	?cov	vbis	ėAą.	ed	Soil for Sample intental

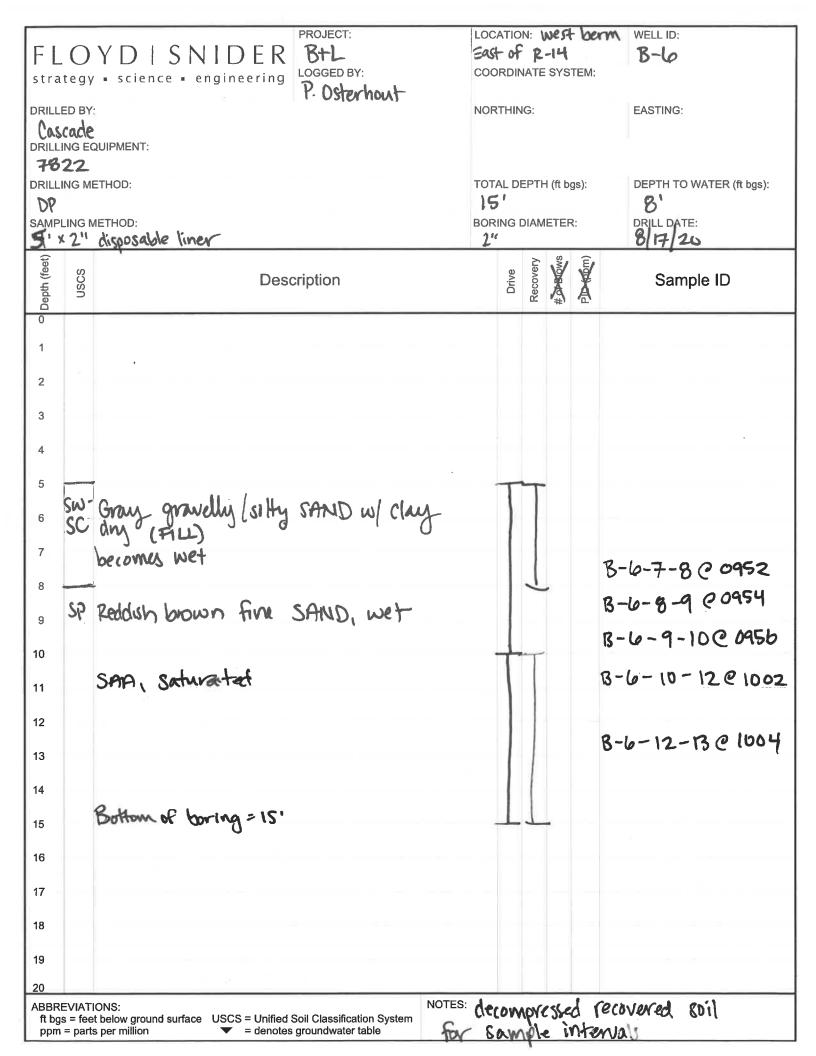
	_	YDISNIDER BHL LOGGED BY: P. Osternout	ad	ace	V: landfi INT 1 ATE S'	11 > D - YSTEM:	7	WELL ID: B-2
	ED BY			THIN				EASTING:
54	ING MI	QUIPMENT: ETHOD:		AL DE	PTH (f		Faco	Clevation = 19 Ft. NAVD 88 DEPTH TO WATER (ft bgs):
SAMP	LING N	disposable liner	1 '		IAMET	ER:		DRILL DATE:
Depth (feet)	nscs	Description		Drive	Recovery		1	Sample ID
0		Gravel ground surface		1				
2		Priller reported very difficult chrilling in top 2 ft (likely due to gravel fill)						
4				1				
5								
	0.00	Company along sellowed and and and and and and and and and an		-	_			
8	SP	Group Sittylgravelly SAND (well graded) _ black Chunk of wood present. Becomes a reddish-gray V. Five SAND, Saturated.					-	2-7-8 @ 1238 2-8-9 @ 1240
9					1			2-9-10@ 1242
10					7	econe		2-10-11@1418
12		SAA pushed large gravel in shoe. Low recovery		1	T	resulti n sai recovi	SAM	-2-11-12@1420
13				1			,	
14			Į.	1				
16								
17								
18								
19								
	EVIAT	IONS: at below ground surface USCS = Unified Soil Classification System						7

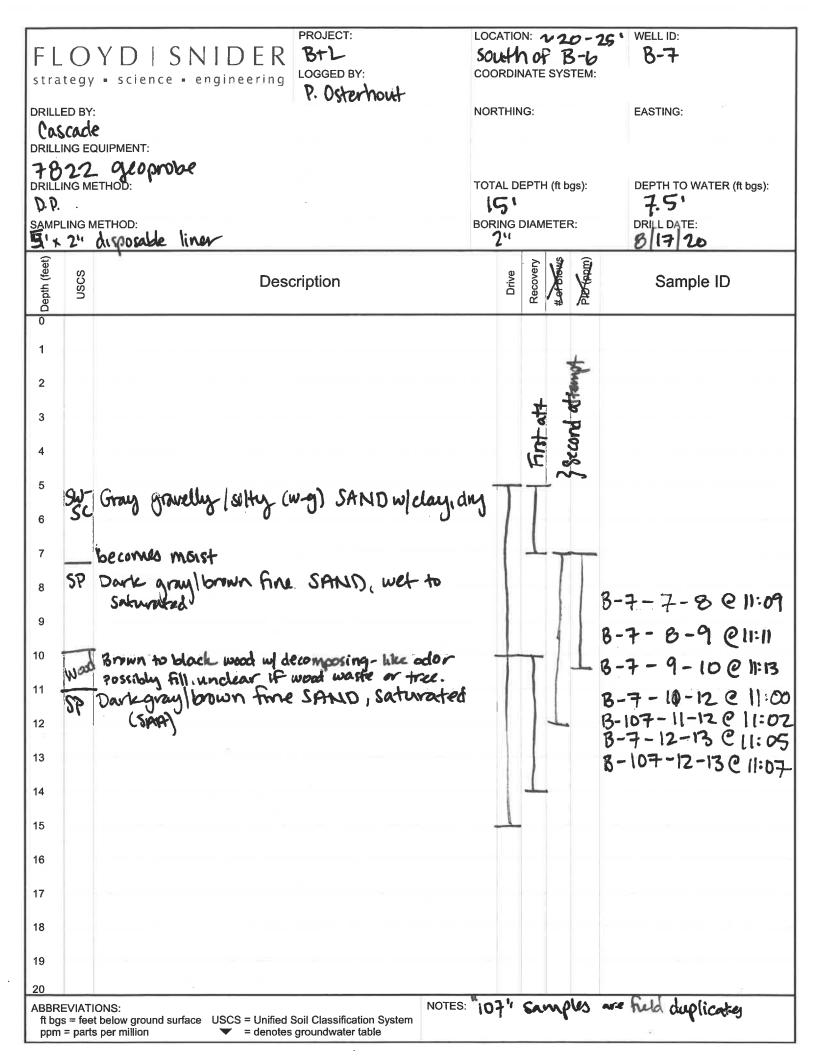
	_	PROJECT:	LOC	ATIO	N:		WELL ID:
FL	\bigcirc	YDISNIDER BHL				of D	
	_	/ • science • engineering LOGGED BY:	COC	ORDIN	IATE S	SYSTEM:	
DRILL	.ED BY	P. Osterhout	NOF	RTHIN	G:		EASTING:
		e - Scott					
DRILL	ING E	QUIPMENT:					
	LT ING M	ETHOD:	тот	AL DI	EPTH ((ft bgs):	DEPTH TO WATER (ft bgs):
D				5 .5			8'
		METHOD:	вок 21		DIAME	TER:	DRILL DATE:
	X 2"	disposable liner			>	ଷ ସ	8/12/28
Depth (feet)	nscs	Description		Drive	Recovery		Sample ID
0		Gravel ground surface					
1		4					
2							
_							
3							
4	CW	Brown sity gravelly w-g SAND, dryto wet dense (Fill)		1	7		
5	SW	GONCO (TIN)	1	1			
ľ		CICVIX (PIII)		1.			8-3-7.5-8 @ 15:12
6		Becomes gray (Fill)					0 3 113 0 0 13.12
7							
8	7	wet at bottom of core		\perp	_	100)
Ü	1-				T		B-3-8-9 @ 15:15
9		Highly Saturated gravelly SAND, likely a lot of Sluft.				3 8	B-3-9-10@15:17
10	€0.	- 11h - C					B-3-10-12 @ 15:19
11	8	ay of			4		(archive)
12	SP	red of consilidated material (reddish-gray fine SAND) at bottom of core liner, Saturate	d	+	T		B-3-12-13@15:21
13		SAA, trace gravel		1			
14		0.12.50					
15		0 4 0 1		1	_		
16		Bottom of drive = 15.5' bgs					
17							
40							
18							
19							
20							
		TIONS: et below ground surface USCS = Unified Soil Classification System					
		ts per million = denotes groundwater table					

stra	tegy	YDISNIDER BTL LOGGED BY: PROJECT: BTL PROJECT: PROJECT: PROJECT: PROJECT: PROJECT:	coc	RDIN	SOU		₽	
Car	ING E	Q - Scott QUIPMENT:	NOF	RTHIN	IG:			EASTING:
DRILL D. ' SAMP	INĠ ME P. LING M	be 7822. ETHOD: METHOD: dyposable liner	BOR	AL DI				DEPTH TO WATER (ft bgs): BILL DATE: BILL 20
Depth (feet)	. SOSN	Description		Drive	Recovery	# of Blows	PID (ppm)	
0		Gravel ground Surface bern (PILL)						
2		berm (PIU)						
3								
5				_	_			
6	SW	Gray gravelly clayey SANO w/ silt						
8 7	T	wet						18-13-1
9	SM	Brown very fine SAND w Sitt, wet		1				8103-8-9 @ 11:42
10 11 12		Lost ~1' from liner Bostom of drive = 10' logs		1				suff-and should be discarded
13				\$				
14				\$,			
15				K				
16								
17								
19		,						
20		ONS: NOTES						ginal on B(12)

			BBO IFOT	1.00) A TI C				WELLER
디	\cap	YDISNIDER	PROJECT:	LUC	CATIC	N:			WELL ID:
		science • engineering	LOGGED BY:	cod	ORDII	NATE	SYS	TEM:	7
DRILL	ED BY	:	P.Ost	NOF	RTHIN	NG:			EASTING:
		e-Scott							
		QUIPMENT:							
		- 1822 ethod:		тот	TAL D	EPTH	H (ft b	gs):	DEPTH TO WATER (ft bgs):
DP				1	15				~ B,
SAMP	LING N	disposable liner 5'	×2."	BOF 2"	RING	DIAN	IETEF	₹:	B 12 20 - 8/F/20
et)		Cusposator inter				<u>></u>	S	√Ê/	0/12/20 - 0/17/20
Depth (feet)	nscs	Desc	cription		Drive	Recovery	# OP BROWS	(IIII)	Sample ID
0									
2									
3				,	1				
4		HH refusal at 4.5" Will	realtempt w la	nger riq on	Mon	day		×	
5			•	0 0					
0	SW	Gran Grandly Silha	S9ND 1 01000	dina -		T			
6	SW	Gray gravelly sitty to moist, dense (FILL	Silves with cray	, and					
7					-				
8	SP	Reddish brown fine S	SAND, wet						B-4-7.5-8 @ 0912
			•			1			B-4-8-9@ 0414
9		trace organics (reed?)				مك			8-4-9-10@ 0916
10		(sluff)			+	T			9-4- 1-106 - 110
11									B-4-10-12@0921
		Same as above (Soil	extruded from	liner)	1	1			
12		soil has slight sulfury	odor						B-4-12-13 @ 0923
13					1	T	4		
14				-					
15					4		-		
16									
		*							
4-7									
17									
17 18									
									=

	•							
FI	\bigcirc	YDISNIDER B+L		OITA:		7		WELL ID: B-5
		y = science = engineering LOGGED BY: P. Osterhout	cod	ORDIN	NATE	SYS	STEM:	
	ED BY		NOF	RTHIN	IG:			EASTING:
DRIL	ING E	QUIPMENT:	ap	אמויכ	i. 91	bund	Su	rface devation at 19 Ft
	ING M	ETHOD:		AL DI			gs):	DEPTH TO WATER (ft bgs):
P SAMF		METHOD:	BOR	ING I	DIAN	IETEI	R:	8' DRILL DATE:
	x 2'	disposable liner	2'	4	_	. 104		8 12 20
Depth (feet)	nscs	Description		Drive	Recovery	# BROWS		Sample ID
0								
2								
3								
4	Sul	Brown sity gravelly SAND, loosedry Becomes gray+ damp		T	1			
5		Becomes gray+ damp			-			
6					1			
7 8 V	SM	Becomes brown again and sitter Chunk of wood at bottom of core.						B-5-7-8 @ 16:15
		Gray-brown fine SAND, saturated		T	T			B-5-8-9 @ 16:28
9	,	orang er ster) time sir jude (content oct cen						B-5-10-12@16:30
10								9 7 10 1 20 10 00
11				1				
12		SAA, fine tovery fine SAND		Ť	T			B-5-12-13@10:47
13				1				
14								
15				1	1			
16								
17								
18								
19								





		PROJECT: D S N D E R Logged By: Cience • engineering		CATIO		SYS	тем:	WELL ID:
Co	ED BY: . Scade ING EQUIPMI	P. Osternout ENT:	NOF	RTHIN	IG:			EASTING:
$I \mathcal{J}$	B22 geoprobe			'AL DI				DEPTH TO WATER (ft bgs):
-	LING METHO	posable liner	2	RING I	JIAIV	IE I EI	≺ :	DRILL DATE: 8/17/20
Depth (feet)	nscs	Description		Drive	Rесоvегу	#erBlows	PHD (Sypun)	Sample ID
0								
2					ě			
3				~.	A_	se	cond	*:
4				at	fanol	t o	-	+
5	Cost Rom	um a suelle le le cour de	inose	7	T			•
6	SM	wn gravelly silty SAND, dry rrecovery (void in core), satu	atel	1				
7						1	_	
8 (SP J	kgray fine SAND, Saturated Brown, coarse SAND, trace fines by	ravel, wet		L	- 1	1	B-8-7-8 @ 1228
9	SP (t	nen sharp contact to dark red ine SAND, saturated	dishlgray			1	1	B-8-8-9 @ 1230
0	76	ine SAND, saturated	0 3	+		1		8-8-9-10 @ 1232
1				1				B-B-10-11 <i>0</i> 1238
2						Ł		B-B-12-13@12:40
3	SAV	Δ.			7			Lasample
4 5		30ttom of boring		\perp	1	-		Collected from top 9" of core
6								- that was still
17								intact (10'-13' Blooks
								like staff poor
18								· · v - · - 71 J -
8								

DRILLING EQUIPMENT: 7822 DRILLING BECUPMENT: 7822 DRILLING METHOD: DP. SAMPLING METHOD: S'x 2' disposable liner Description Description Description Description Sample Sampl		PROJECT: B+L LOGGED BY: PROJECT: B+L PROJECT: PROJECT: PROJECT: PROJECT: PROJECT: PROJECT: PROJECT: PROJECT: PROJECT:	COO			SYS	STEM:	WELL 1D: B-9
DEPTH TO WATE DP. 15 BORNIS DIAMETER: 16 BORNIS DIAMETER: 17 BORNIS DIAMETER: 18 19 Sample	Cascac DRILLING E	Y: Se EQUIPMENT:	NOR	THIN	IG:			EASTING:
Description Descr	PRILLING NO.	METHOD:	BOR	5' ING I				DEPTH TO WATER (ft bgs): DRILL DATE: 8 + 20
Sur Cray to brown gravelly clarky SAND wg. In to moist Becomes wet Peddish-dark brown fine SAND, wet trace wood longanic debrig at contact: Becomes saturated Becomes saturated SAA, trace silt Cliner splintwed, lost N14-14.5' on ground)				Drive	Recovery	**************************************		Sample ID
Reddish-dark brown fine SAND, wet trace wood lorganic debris at contacts Becomes saturated Becomes saturated Barren silt Chiner splintwed, lost ~14-14.5' on ground) Barren splintwed, lost ~14-14.5' on ground)	3 4 5 6 Su	Gray to brown gravelly/clayey SAND 4	v-q.	T	T			
Becomes saturated B-9-9-10 B-109-9-10 B-9-10-12 B-9-10-12 (Liner splintered, lost ~14-14.5' on ground)	7 Y	- Bedones wet Reddish-darkbrown fine SAND, wet trace wood lorganic debrig at contacts	`					B-9-7-80 1350 B-9-8-9 @ 1352
3 (Liner splintered, lost ~14-14.5' on ground) B-9-10-12 B-9-10-12					1	:		B-9-9-10@ 135 B-109-9-10@142
(Liner splintered, lost ~14-14.5' on ground) B-9-12-13	1	SAA trace silt						B-9-10-12@141
	2							8-9-12-130 141
5 Bottom of laring = 15' bgo	3	(Liner splintered, lost ~14-14.5 on ground)	•					
	3 · 4	(Liner splintered, lost ~14-14.5' on ground) Bottom of looning = 15' bgo		1				
	3 · 4 · 5 · 6	· · · · · · · · · · · · · · · · · · ·	•	1				
	13 · 14 15 16 -	· · · · · · · · · · · · · · · · · · ·		1				
20	13	· · · · · · · · · · · · · · · · · · ·		1				

	PROJECT:	LOC	ATIO	N:			WELL ID:
	DYD SNIDER B+L gy = science = engineering P. Osterhout	cod	ORDIN	NATE	SYS	ТЕМ:	B-10.
DRILLED E	BY:	NOF	RTHIN	IG:			EASTING:
	geophien:						
DRILLING D. P. SAMPLING		TOTAL DEPTH (ft bgs): 15' BORING DIAMETER: 2"					DEPTH TO WATER (ft bgs): プ DRILL DATE: 811426
Depth (feet)			Drive	Recovery	#orbrows	EN AMERICAN PROPERTY OF THE PR	Sample ID
1 2							
3 4							· · · · · · · · · · · · · · · · · · ·
5 6 7	Bown to gray gravelly silty SAND (wg M dry to mouth Becomes wet)	T				
8 So	Reddish-durk brown fine SAND, Saturat	ted					B-10-7-80 1436 B-10-8-90 1438 B-10-9-100 1440
10	SAA (Soil extended from core liner, depths are approximate). trace organ	lı.c	1	1			B-10-10-120 1456
13	deloris (reeds/rootlets)			1			B-10-12-130 1458
15	Bottom of boring = 15' bay		1				
16							
18							
19							
20							
	ATIONS: feet below ground surface USCS = Unified Soil Classification System arts per million = denotes groundwater table		CON	nor and	caa	d i ir	Recovered core for whenvals.

	. 0	YDISNIDER	B+L	LOC					B-II
		/ • science • engineering	P. Osterhout	COO	RDIN	NATE	SYS	TEM:	
_	ED BY			NOR	THIN	IG:			EASTING:
RILL	ING E	QUIPMENT:		gro	and	surf	ace	z el	cuation approx. 19 ft NA
) P	ING MI	ETHOD:		L:	5'	EPTH DIAMI			DEPTH TO WATER (ft bgs): 7 U DRILL DATE:
1		disposable liner		2	(8/18/20
Deptn (reet)	nscs	Desc	cription		Drive	Recovery	# erbrows		Sample ID
		Growel ground Surface Drilled passed 0-5' (F	fill/berm)						
	Sw-	Gray gravelly, clayery becames wet	SAND W/ SIH, dr	u to moist	T	T			
	7	becomes wet	2.15	J(FILL)					
	1			J(HIL)					B-11-7-8 @ 0805 B-11-8-9 @ 0807
	1	becames wet Reddush -dark brown f trace organics (grass?		(行止)					B-11-8-9 @ 0807
	1			(行山)		<u> </u>	e (2)		
	1	Reddush -dark brown f trace organics (grass?		⁽ 行山)					B-11-8-9 @ 0807 B-11-9-10 @ 0809
	SP	Reddush -dark brown f trace organics (grass?)	ine SAND, wet	(fill)					B-11-8-9 @ 0807 B-11-9-10 @ 0809 B-11-10-12 @ 0814
	SP	Reddush -dark brown f trace organics (grass?	ine SAND, wet	(fill)					B-11-8-9 @ 0807 B-11-9-10 @ 0809 B-11-10-12 @ 0814
	SP	Reddush -dark brown f trace organics (grass?)	ine SAND, wet	(fill)					B-11-8-9 @ 0807 B-11-9-10 @ 0809 B-11-10-12 @ 0814
	SP	Reddush -dark brown f trace organics (grass?)	ine SAND, wet	(fill)					B-11-8-9 @ 0807 B-11-9-10 @ 0809 B-11-10-12 @ 0814
	SP	Reddush -dark brown f trace organics (grass?)	ine SAND, wet	(fill)					B-11-8-9 @ 0807 B-11-9-10 @ 0809 B-11-10-12 @ 0814
	SP	Reddush -dark brown f trace organics (grass?)	ine SAND, wet	(fill)					B-11-8-9 @ 0807 B-11-9-10 @ 0809 B-11-10-12 @ 0814

ЕТ		PROJECT:	LOC	ATIO	N:			WELL ID:		
		YDISNIDER B+L LOGGED BY: P. Osterhout	COC	ORDIN	IATE	SYS	TEM:	B-12		
Cas	CASCACE DRILLING EQUIPMENT:				IG:			EASTING:		
Ger DRILL D.	JNG M	be 7822 ETHOD:		AL DI	EPTH	l (ft b	gs):	DEPTH TO WATER (ft bgs):		
SAMF	LING	METHOD: "disposable liner	BOF	ING I	DIAM	ETE	₹:	DRILL DATE:		
Depth (feet)	nscs	Description		Drive	Recovery	# Di-Diews		Sample ID		
0		Gravel ground surface								
2										
3										
4										
5	GM			7	Т					
6	200-	Gray silty GRAVEL w/ sand (w-g) moust						(5.14 dumbion to)		
7	SC	Gray sitty GRAVEL w/sand (w-g) moist Gray gravelly / clayey SAND w/sit (w-g) moist to wet (FILL)			1			(Field duplicate) 8-112-7-8 (0825 8-12-7-8 (0828		
8	SP	Darkbrown fine SAND, wet trace organics						8-12-8-9 @ 0830		
9		Dot to brown 1 live a lide, well litture orderlies			-			B-12-9-10@0832		
10 -		SAA, saturated			T			B-12-10-12 @ 0840		
12				1						
13				1	1			B-12-12-13@0842		
14					-					
15		Bettom of boring = 15' bys		\perp	\perp	-				
16										
17										
18										
19										
20 ABBR	REVIAT	TIONS: NOTES	3:							
ft bo	gs = fee	et below ground surface USCS = Unified Soil Classification System ts per million = denotes groundwater table								

FLOYDISNIDER Strategy - science - engineering P. Osterhout PRILLED BY: Cacade ORILLING EQUIPMENT: Geoprobe 7822 ORILLING METHOD: D.P. SAMPLING METHOD:	TOT SOR	RTHIN		SYS	ТЕМ:	B-13
ORILLED BY: CASCACE ORILLING EQUIPMENT: SEOPTIBLE 7827 ORILLING METHOD: SAMPLING METHOD:	TOT		G:			EASTING:
Geophbe 7822 DRILLING METHOD: SAMPLING METHOD:	BOR	AI DI				
PRILLING METHOD: $\mathcal{D}.\mathcal{P}.$ SAMPLING METHOD:	BOR	AI DI				
		5'		l (ft b		DEPTH TO WATER (ft bgs): 7 ' DRILL DATE:
B' x 2" disposable liner	2	u				8 18 20
Open (seet) (see		Drive	Recovery	#er Drows		Sample ID
O Gravel						
1						
₂ Fill						
3						
4						
5 6 SE Gray gravelly, clayey SAND (w-g) w 7	I sit,					
8						B-13-7-8 @ 0905
g SP Dark brown fine SAND, wet, trace, (rootlets, grass), trace silt	organics,					B-13-8-9 @ 0907 B-13-9-10@ 0909
10		+	7	v		
SAA, Saturated		1				B-13-10-12@ 0911
12 13						B-13-12-13@ 0917
14			1			
Bottom of biring = 15' bgs.						
· ·						
16						
17						
18						
19						
20						
ABBREVIATIONS: ft bgs = feet below ground surface USCS = Unified Soil Classification System	NOTES:					

		YDISNIDER - science - engineering	PROJECT: B+L LOGGED BY: P. Osterhout		our	m (ast sys	оС (D-8 B-14
as(_	e - Scott B. QUIPMENT:		NOR	THIN	IG:			EASTING:
illiñ ive	OF (oe 7822 ETHOD: PUSh METHOD:		10	۲'		d (ft b <u>i</u>		DEPTH TO WATER (ft bgs): 6.5' DRILL DATE:
5'	× 2	2" disposable liner		2'				-	8 18 20
Depui (ieer)	nscs	Des	cription		Drive	Recovery	# of Descons	Play form)	Sample ID
		Gravel ground surface							
Ĭ	Sw′	- 4			Т				
4		Gray gravelly, Clayer Molst Becomes wet	y SANO(w-g),d	ny to					B-14-7-800940
4	SP	Cray gravelly, Clayer Motist Becomed wet Dark brown fine SA		ny to					B-14-7-800940 B-14-8-90942 B-14-9-1000944
4	SP	Dark brown fine SA	ND, wet	ny to					B-14-8-9 @ 0942 B-14-9-10 @ 6944
	SP	Dark brown fine SA	ND, wet	ny to					B-14-8-9 @0942 B-14-9-10 @6944
4	SP	Dark brown fine SA	ND, wet						B-14-8-9 @0942 B-14-9-10 @6944 B-14-10-12@094
2 3 3 4 4 5 5	SP	Dark brown five SAI SAA, Saturated Linea of CLAY, plastic, Dark brown SAND	ND, wet wet F-c w grave						B-14-8-9 @0942 B-14-9-10 @6944 B-14-10-12@094
4	SP	Dark brown five SAI SAA, Saturated Lunar of CLAY, plastic, Dark brown SAND Saturated, trace fives.	ND, wet wet F-c w grave						B-14-8-9 @0942 B-14-9-10 @6944 B-14-10-12@094
4 3 3 3 4 5 5 7 3 3	SP	Dark brown five SAI SAA, Saturated Lunar of CLAY, plastic, Dark brown SAND Saturated, trace fives.	ND, wet wet F-c w grave						B-14-8-9 @094Z
4 5 5 6 6 7	SP	Dark brown five SAI SAA, Saturated Lunar of CLAY, plastic, Dark brown SAND Saturated, trace fives.	ND, wet wet F-c w grave						B-14-8-9 @0942 B-14-9-10 @6944 B-14-10-12@094

		PROJECT:	100	ATIC	N-			WELL ID:
FL	. 0	YDISNIDER B+L		,,,,,,				8-15
l -		science = engineering LOGGED BY:	COC	DRDI	NATE	SYS	TEM:	
DRILL	.ED BY	P. Osterhout	NOF	RTHIN	IG:			EASTING:
	Cascade - Scott DRILLING EQUIPMENT: Geoffoye 7822 DRILLING METHOD: TOTA							
							gs):	DEPTH TO WATER (ft bgs):
D. 1	P.		V	5'				7'
	LING N	disposable liner		RING 1	DIAN	IETEI	₹:	B 18 20
		Cushozorous linion			چ	\§/	.Ê/	
Depth (feet)	nscs	Description		Drive	Recovery	# of Blows	(my dail	Sample ID
0								
1								
2								
3								
4								
5								
5	SW-	Gray gravelly, clayey SAND (wg), dry to moist, dense.		T	T			
6	Sc	moist, dense.		-				
7 7	7	wet						
		Dark brown fine SAND, wet, trace organ	nict					B-15-7-8 @ 10:08
8	2h	Date of front time strang, west it the original	itte		\perp			_
9		have a said						B-15-8-9 @ 10:10
10		trace gravel		1	. —			B-15-9-10@10:12
	\	SMA						13-15-10-12010:16
11	1	grades to med SAND w/ some fine - coarse so	und		1			13 10 10 12(10:16
12	Sw	grades to med SAND w/ some fine -coarse so and trace grave 1 to 10% grave		1	1			
40		U U						B-15-12-13@10:18
13								
14				1	1			
15		Bottom of boring = 15' bgp		\perp				
. •		J						
16								
17								
18								
10								
19								
20	,							1.0
	REVIAT	IONS: at below ground surface USCS = Unified Soil Classification System	es: Da	PCOW	pra	440	8	bil for sample intervals
		s per million = denotes groundwater table	, ,					

_		PROJECT:	L	OCA	TION	1:		- 00	WELL ID:
-	\bigcirc	YDISNIDER BAL	1	31 au	NOV	A fi	DAN	MU	U-33 B-16
		• science • engineering LOGGED BY: P. Osterhout	(COOR	DIN	ATE	SYS	ГЕМ:	
RILL	ED BY		1	NORTI	HINC	3:			EASTING:
_		e - Scott							
		2 7822							
RILL	ING MI	ETHOD:	٦	TOTAL		PTH	(ft bo	gs):	DEPTH TO WATER (ft bgs):
7.0			_	'و)					4.51
AMP	LING N * 2"	disposable liner w 11 rod extension	١ ا	30RIN 211	IG D	IAME	ILK	ζ:	8/18/20
						эгy	S/NS	Ê/	
Depth (feet)	USCS	Description			Drive	Recove		PIB (mom)	. Sample ID
)	ML	Brown, organic-rich SILT, mois	+						B-16-0-1 @ 1352
		grades to gray-brown sitty CLAY							B-16-1-2 @ 1353
3	CH	w organics (reeds/grass)	e i				ı		B-16-2-3@1354
	11	grades to gray-brown Silly CLAY worganics (reeds/grass) Peatly Clay to dayey Reat, Moist, sol grades to visine SAND, wet	14			L			B-16-3-50 1355
Y	SP	coargens down to fine SAND							1
6		-Rottom of boring = 10' bgg		_	L				B-16-5-6@ 135
7		· J							
3									
9									
}									
-									
2									
}									
ı									
5									
3									
7									3 m
В									
9									
0		IONS:	NOTES:	5					soil for sample inter

		PROJECT:	10	CATIO	NI:			WELL ID:	
FI	\cap	YDISNIDER B+L				OF N	W-33	B-17	
		y - science - engineering LOGGED BY: P. Osterhout				YSTEM:			
DRILL Ca	ED BY		NO	RTHIN	G:			EASTING:	
DRILL	ING E	QUIPMENT:					1		
		obe 7822 IETHOD:	то	TAL DE	PTH (f	t bgs):		DEPTH TO V	/ATER (ft bgs):
D. 1	•		t	0'				3.51	
SAMP	KZ'	disposable liner w/ 1' rod extension	BO	2''	DIAMET	ER:		B 18 2	0
Depth (feet)	nscs	Description		Drive	Recovery	PID (ppm)		Samp	le ID
0	UL	Brown, organic-rich SILT, moist							1 @ 1414
2	a	Gray-brown Sitty CLAY w lorganics,	moist						201415
3	P+	clayer PEAT to peaty CLAY			1			-	-3@1416
4	Sp	Dark bnown very fine SAND, we	et at 3.5	v I			13-	17 - 3	-5@1417
5		Grades to fine SAND		1			B -	17-5	-6C 1418
6		30How of boring = 6' bgs		-					
7									
8									
9									
10									
11									
12						,			
13									
14									
15									
16	-								
17									
18									
19									
		TIONS:	NOTES:	Deco	npre	ssed	Soil	for s	ampling
		et below ground surface USCS = Unified Soil Classification System ts per million = denotes groundwater table	1345		0 " =				/

FL	0	YDISNIDER BTL		ATION		NW-2	WELL ID:	
stra	tegy	science engineering LOGGED BY:	cod	ORDIN	ATE SYST	ſEM:		
Ca		: g - Scott QUIPMENT:	NOF	RTHING	Э:		EASTING:	
Geo	prol	e 7822 ETHOD:	тот	AL DE	PTH (ft bg	15):	DEPTH TO WATER	(ft bas):
D. P	ING N	AETHOD:	BOR	6	IAMETER		3.25 DRILL DATE:	(3-7
	. 2'	diposable liner w/ 1' rod extension) :	2"	> • %	~/	8/18/20	
Depth (feet)	nscs	Description		Drive	Recovery # APPROVES		Sample ID	
0	ML	Brown, organic-rich SILT, moist roc	Heb				-18-0-1 @ 1	
		Gray sity CLAY w/crganics, mois		1			-18-1-20	
3 V	102	Lense of peat wil clay, soft, more Grades to very fine SAND, we	the brown to	n constant			-18 -2-3 @	
4	SP	Grades to very fine SAND, we	et black	١.		В	-18 -3-5 C	כאירו
5		v. fire sand grades to fine, the medium sand, w trace sit,	wet.			B	-18-5-6) 144 _b
6	-	-Bottom of boring = 6' bgo						
7								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19 20								
ABBR ft bg		IONS: It below ground surface USCS = Unified Soil Classification System s per million = denotes groundwater table	NOTES: DO	Com	pressed	Soil	for Sampling	interv

Ι΄ -	- ~	YDISNIDER !	ROJECT: B+L OGGED BY:	v	CATION 2013	Sou			WELL ID: 8-19
DRILL	.ED BY	: scrence - engineering	P.Osterhout		RTHIN		313	I EIVI.	EASTING:
DRILL	ING E	de - Scott QUIPMENT:							
DRILL	ING M	oloe 7822 ETHOD:			TAL DE	PTH	(ft b	gs):	DEPTH TO WATER (ft bgs):
D. SAMP	LING	METHOD:	المحاسب معادات	BO	P' RING E	IAM	ETER	₹:	DRILL DATE:
		L" disposable liner w	CKTENSION		2"	ary.	sw/	Ê,	8/18/26
Depth (feet)	nscs	Descri	ption		Drive	Recovery	# 0786Ws	PP (Ppm)	Sample ID
0	ML	Brown, organic-rich SIL	T, dru, most	eks	1	T			B-19-0-1 @ 1508
2	1 .	Gray-brown sitty CLA							8-19-1-20 1509
3	SIA	Peat lense ~ 2" mout, oray brown so thy sand	Riom						B-19-2-3@ 1510
4	Sb	Grades from very fine torown) to medium s	SAND (do	rkgny					B-19-3-5@ 1511
5		Becomes black			-	٤			B-19-5-60 151Z
6	·	Bottom of boring =	6. pdl						
8									
9						1			
10									
11									
12									
13									
14									
15									
16									
17									
18 =					`				
19									
	s = fee	t below ground surface USCS = Unified Soil	Classification System bundwater table	NOTES: [eon	pr	ess : 11	æ	soil for sample interneds

B&L Woodwaste Site

West Boundary Soil Investigation Report

Appendix B Soil Boring Photographs



Photograph 1: B-1.



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



Photograph 2: B-1.



Photograph 5: B-2.



Photograph 3: B-1.



Photograph 6: B-3.

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West Boundary Soil Investigation Report
B&L Woodwaste Site
Pierce County, Washington

Appendix B: Soil Boring Photographs







Photograph 7: B-4.



Photograph 8: B-5.



Photograph 9: B-5.



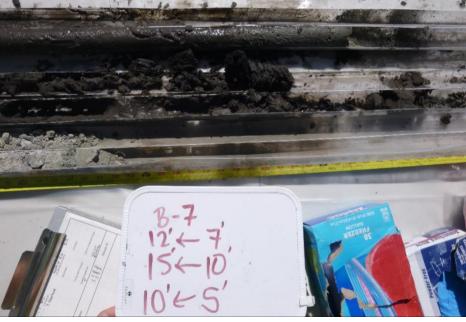
Photograph 10: B-5.



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.

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West Boundary Soil Investigation Report
B&L Woodwaste Site
Pierce County, Washington

Appendix B: Soil Boring Photographs



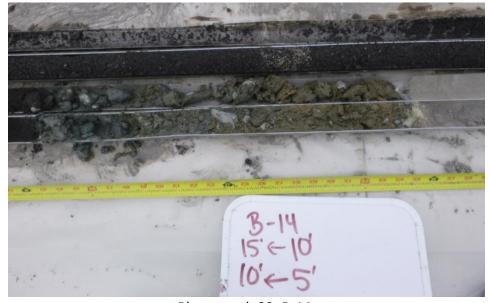
B-12 15 ← 10' 10 ← 5'

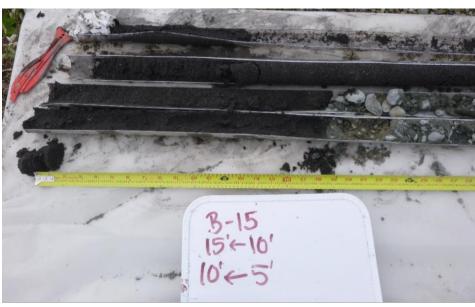


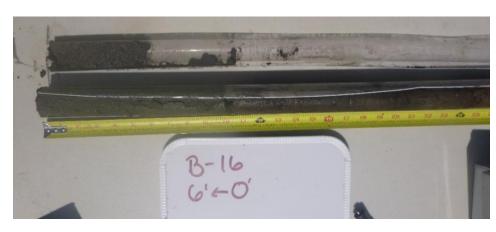
Photograph 19: B-11.

Photograph 20: B-12.

Photograph 21: B-13.







Photograph 22: B-14.

Photograph 23: B-15.

Photograph 24: B-16.





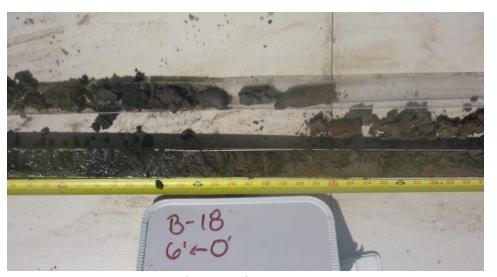


Photograph 25: B-16.

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.

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West Boundary Soil Investigation Report
B&L Woodwaste Site
Pierce County, Washington

Appendix B: Soil Boring Photographs

B&L Woodwaste Site

West Boundary Soil Investigation Report

Appendix C Analytical Laboratory Reports

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

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

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE (Continued)

<u>Laboratory ID</u>	Floyd-Snider
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

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE (Continued)

<u>Laboratory ID</u>	Floyd-Snider
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.

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

Concentration

Analyte: mg/kg (ppm)

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

Concentration

Analyte: mg/kg (ppm)

Arsenic 1.33

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

Concentration

Analyte: mg/kg (ppm)

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

Concentration

Analyte: mg/kg (ppm)

Arsenic 1.64

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

Matrix: Soil Instrument: ICPMS2
Units: mg/kg (ppm) Dry Weight Operator: SP

Concentration

Analyte: mg/kg (ppm)

Arsenic <1

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

Concentration

Analyte: mg/kg (ppm)

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

Concentration

Analyte: mg/kg (ppm)

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

Matrix: Soil Instrument: ICPMS2
Units: mg/kg (ppm) Dry Weight Operator: SP

Concentration

Analyte: mg/kg (ppm)

Arsenic 1.38

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

Concentration

Analyte: mg/kg (ppm)

Arsenic 1.65

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

Concentration

Analyte: mg/kg (ppm)

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

Concentration

Analyte: mg/kg (ppm)

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

 Materials:
 08/20/20
 Data File:
 008266-19.095

Matrix: Soil Instrument: ICPMS2
Units: mg/kg (ppm) Dry Weight Operator: SP

Concentration

Analyte: mg/kg (ppm)

Arsenic 8.53

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

Matrix: Soil Instrument: ICPMS2 Units: mg/kg (ppm) Dry Weight Operator: SP

mg/kg (ppm) Dry Weight Operator: S.

Concentration mg/kg (ppm)

Arsenic 2.36

Analyte:

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

Concentration

Analyte: mg/kg (ppm)

Arsenic <1

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

Concentration

Analyte: mg/kg (ppm)

Arsenic 5.65

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

Concentration

Analyte: mg/kg (ppm)

Arsenic 3.87

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

Concentration

Analyte: mg/kg (ppm)

Arsenic 5.19

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

Matrix: Soil Instrument: ICPMS2
Units: mg/kg (ppm) Dry Weight Operator: SP

Concentration Operator.

Analyte: mg/kg (ppm)

Arsenic 3.21

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

Concentration

Analyte: mg/kg (ppm)

Arsenic 1.52

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

Matrix: Soil Instrument: ICPMS2 Units: mg/kg (ppm) Dry Weight Operator: SP

Concentration

Analyte: mg/kg (ppm)

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

Concentration

Analyte: mg/kg (ppm)

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

Concentration

Analyte: mg/kg (ppm)

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

ing/kg (ppin) bry weight Operator.

Concentration mg/kg (ppm)

Arsenic 5.24

Analyte:

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

Concentration

Analyte: mg/kg (ppm)

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

Concentration

Analyte: mg/kg (ppm)

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

08/20/20 Lab ID: 008266-43 Date Extracted: Date Analyzed: 08/20/20 Data File: 008266-43.146

Matrix: Soil Instrument: ICPMS2 Units: mg/kg (ppm) Dry Weight SP

Operator:

ConcentrationAnalyte: mg/kg (ppm)

Arsenic 3.22

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

Concentration

Analyte: mg/kg (ppm)

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

Concentration

Analyte: mg/kg (ppm)

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

Concentration

Analyte: mg/kg (ppm)

Arsenic 3.27

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

Matrix: Soil Instrument: ICPMS2
Units: mg/kg (ppm) Dry Weight Operator: SP

Concentration

Analyte: mg/kg (ppm)

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

Concentration

Analyte: mg/kg (ppm)

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

 Materials:
 08/20/20
 Data File:
 008266-52.152

Matrix: Soil Instrument: ICPMS2
Units: mg/kg (ppm) Dry Weight Operator: SP

Concentration

Analyte: mg/kg (ppm)

Arsenic 5.51

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

Concentration

Analyte: mg/kg (ppm)

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

Matrix: Soil Instrument: ICPMS2 Units: mg/kg (ppm) Dry Weight Operator: SP

Concentration

Analyte: mg/kg (ppm)

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

Concentration

Analyte: mg/kg (ppm)

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

Concentration

Analyte: mg/kg (ppm)

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

Concentration

Analyte: mg/kg (ppm)

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

Concentration

Analyte: mg/kg (ppm)

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

Concentration

Analyte: mg/kg (ppm)

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

 $\begin{array}{ccccc} \text{Client ID:} & \text{B-13-9-10} & \text{Client:} & \text{Floyd-Snider} \\ \text{Date Received:} & 08/18/20 & \text{Project:} & \text{B+L, F\&BI } 008266 \end{array}$

 Date Extracted:
 08/20/20
 Lab ID:
 008266-65

 Date Analyzed:
 08/21/20
 Data File:
 008266-65.062

 Matrix:
 Soil
 Instrument:
 ICPMS2

Matrix: Soil Instrument: ICPMS2 Units: mg/kg (ppm) Dry Weight Operator: SP

Concentration

Analyte: mg/kg (ppm)

Arsenic <1

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

Matrix: Soil Instrument: ICPMS2
Units: mg/kg (ppm) Dry Weight Operator: SP

Concentration

Analyte: mg/kg (ppm)

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

Concentration

Analyte: mg/kg (ppm)

Arsenic 6.00

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

Concentration

Analyte: mg/kg (ppm)

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

Matrix: Soil Instrument: ICPMS2
Units: mg/kg (ppm) Dry Weight Operator: SP

mg/kg (ppm) Dry Weight Operator: S.

Concentration mg/kg (ppm)

Arsenic 2.56

Analyte:

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

Concentration

Analyte: mg/kg (ppm)

Arsenic 5.64

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

Concentration

Analyte: mg/kg (ppm)

Arsenic 4.36

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: Soil Instrument: ICPMS2

Units: mg/kg (ppm) Dry Weight Operator: SP

Concentration

Analyte: mg/kg (ppm)

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

Concentration

Analyte: mg/kg (ppm)

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

Concentration

Analyte: mg/kg (ppm)

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

Matrix: Soil Instrument: ICPMS2 Units: mg/kg (ppm) Dry Weight Operator: SP

Concentration

Analyte: mg/kg (ppm)

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

 $\begin{array}{ccccc} \text{Client ID:} & \text{B-16-2-3} & \text{Client:} & \text{Floyd-Snider} \\ \text{Date Received:} & 08/18/20 & \text{Project:} & \text{B+L, F\&BI } 008266 \end{array}$

 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

Concentration

Analyte: mg/kg (ppm)

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

Concentration

Analyte: mg/kg (ppm)

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

Matrix: Soil Instrument: ICPMS2
Units: mg/kg (ppm) Dry Weight Operator: SP

Concentration

Analyte: mg/kg (ppm)

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

 Materials:
 0.02
 0.02
 0.02

Matrix: Soil Instrument: ICPMS2
Units: mg/kg (ppm) Dry Weight Operator: SP

Concentration

Analyte: mg/kg (ppm)

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

Concentration

Analyte: mg/kg (ppm)

Arsenic <1

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

Concentration

Analyte: mg/kg (ppm)

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

Concentration

Analyte: mg/kg (ppm)

Arsenic 2.87

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

Concentration

Analyte: mg/kg (ppm)

Arsenic 2.80

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

Concentration

Analyte: mg/kg (ppm)

Arsenic 20.9

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 08/20/20 Lab ID: 008266-100 Date Extracted: Date Analyzed: 08/20/20 Data File: 008266 - 100.162

Matrix: Soil Instrument: ICPMS2

Units: mg/kg (ppm) Dry Weight Operator: SP

Concentration

Analyte: mg/kg (ppm)

Arsenic 4.39

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 Fytraged: 08/20/20 Leb ID: 008266 102

 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

Concentration

Analyte: mg/kg (ppm)

Arsenic 6.76

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

Matrice Soil Later and ICPMS9

Matrix: Soil Instrument: ICPMS2
Units: mg/kg (ppm) Dry Weight Operator: SP

Concentration

Analyte: mg/kg (ppm)

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

Concentration

Analyte: mg/kg (ppm)

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

Concentration

Analyte: mg/kg (ppm)

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

: mg/kg (ppm) Dry Weight Operator: Si

Concentration mg/kg (ppm)

Arsenic <1

Analyte:

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)

			Sample	Percent	Percent		
	Reporting	Spike	Result	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	(Wet wt)	MS	MSD	Criteria	(Limit 20)
Arsenic	mg/kg (ppm)	10	1.85	90	91	75-125	1

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

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)

			Sample	Percent	Percent		
	Reporting	Spike	Result	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	(Wet wt)	MS	MSD	Criteria	(Limit 20)
Arsenic	mg/kg (ppm)	10	1.53	90	85	75-125	6

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

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)

			Sample	Percent	Percent		
	Reporting	Spike	Result	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	(Wet wt)	MS	MSD	Criteria	(Limit 20)
Arsenic	mg/kg (ppm)	10	1.15	84	83	75-125	1

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

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)

			Sample	Percent	Percent		
	Reporting	Spike	Result	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	(Wet wt)	MS	MSD	Criteria	(Limit 20)
Arsenic	mg/kg (ppm)	10	3.20	86	88	75-125	2

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

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 CUSTO	ODY ME 08,	/18/20 BIY
Report To Breff Beaulien	SAMPLERS (signature)	that	Page # of TURNAROUND TIME
Company Floyd Snider Address 6001 Union St. Ste 6000	PROJECT NAME B+L	PO#	X Standard turnaround ☐ RUSH
City, State, ZIP Seattle, WA 98101	REMARKS	INVOICE TO	SAMPLE DISPOSAL Archive samples
Phone 292-2078 Email Brett. Beaulieu & Fligs	Project specific RLs? - Yes / No		Octauls: Dispose after 30 days

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Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	 NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	Total Arganic	Adnive			Votes
8-1-7-75	01	8/12/20	10:36	S	1							X				
B-1-11-12	02		10:35	S									χ			
B-1-12-13	03		10:50	S								X				
8-2-7-8	04		1238	S								X				
B-2-8-9	05		1240	S									X			
B-2-9-10	06		1242	S								X				
B-2-10-11	07		1418	S	Ì								Χ			
B-2-11-12	08		1420	S								X				
B-3-7.5-8	09		i512	S	1							X				
B-3-8-9	10	Ð	1515	S	1								Χ			

Received by:						C
Relinquished by:						1
Received by:	2572	1 BISI	PAT TADOSE	1 -		
Relinquished by:	MISUM	Pamela	Osterhout	FIS	0/18/20	185
	MATURE 1	PR.	INT NAME	COMPANY	DATE	TIME

e =C-2(/			SAMPLE	e CHAIN	OF	TIC	·T	nv	r	į	ΜZ	- n	1	18 /	20			Į,
COS264 Report To Brett Brauli	EM			ERS (signo	***				li.	ĺ	F		0 / /	18/.	Pa	age#	2of AROUND T	
a Florid Suid	4.	-	PROJECT NAME B+L				PO#						Standard turnaround RUSH					
City, State, ZIP Phone Emai	ty, State, ZIP_SLO Pall 1 noneEmail_			REMARKS INVOICE TO Project specific RLs? - Yes / No						SAMPLE DISPOSAL Archive samples Other Default: Dispose after 30 days								
				Specific 1013	0; 15	<u> </u>	110	······	Δ	NAT	YSE	SRE	TITAS	ESTE		yu. <u>1</u> 71	ispose arrei	
Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars		NWTPH-Gx	BTEX EPA 8021			~~~~~						No	tes
B-3-9-10	11	8/2/20	1517	S	1								X					
B-3-10-12	12		1519	S	1									X				
B-3-12-13	13		1521	S)								Χ					•••••
8-5-7-8	14		1615	S	1								X				 	
B-5-8-9	15		1628	S	1									X			****	
B-5-9-10	16		1630	S									Χ					
B-5-10-12	7		1632	S	1						-			X				
B-5-12-13	18		1647	S	1								X		1			

19

30 8/1/20 0914	SIL	X		
SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	P. Osterhact	FIS	8/18	1915
Received by:	PISEAT TADESSE	FB1		
Relinquished by:				
Received by:		Samples received at	_4°C	

008266	SAMPLE CHAIN OF CUSTO SAMPLERS (signature)	DY ME 08/10	8/20 BIY Page # 3 of
Report To Brett Beaulieu	_ White	anu -	TURNAROUND TIME
Company Floyd Snider	PROJECT NAME	PO#	Standard turnaround
Address	BHL		Rush charges authorized by:
City, State, ZIP Sel Parfe	REMARKS	INVOICE TO	SAMPLE DISPOSAL □ Archive samples
Phone Email	Project specific RLs? - Yes / No		Ocfault: Dispose after 30 days
		ANALYSES REQUI	ESTED
		5000	

						ANALYSES REQUESTED											
Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	Arsenic	Archive		Notes	
B-4-9-10	21	6/17/20	0916	S	١								X				
B-4-10-12	22		0921		1								1	X			
	23		0923		1								X				
B-4-12-13 B-6-7-8 B-6-8-9	24		0952										X				
B-6-8-9	25		0954											X			
B-6-9-10	26		0956		١								X				
B-6-10-12	27		1002											X			
B-6-10-12 B-6-12-13 B-7-7-8	28		1004		1								X				
B-7-7-8	29		1109		۱								X			,	
B-7-8-9	30	4	11:11	4	1									X			

& GNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	P. Osterhout	F/S	0/18	1815
Received by	BISRAT TADESSE	TB1		
Relinquished by:				
Received by:		Samples receive	ed at <u>4</u> 0	¢

Report To Breff Beaulieu	SAMPLE CHAIN OF CUSTO SAMPLERS (signature)	DALL ME	08/18/20 4 of 1 B) TURNAROUND TIME
Company Floyd Snider Address 1 1	PROJECT NAME B+L	PO#	Standard turnaround RUSH Rush charges authorized by:
City, State, ZIP_See Page	REMARKS	INVOICE TO	SAMPLE DISPOSAL Archive samples
PhoneEmail	Project specific RLs? - Yes / No		Octault: Dispose after 30 days
		ANALYSES REQUE	STED

									P	NAI	YSE	SRE	QUI	ESTE	D	-	
Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	#of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	Arsonic	Archive		Notes	
B-7-9-10	3(8/17/20	11.13	S									X				
B-7-11-12	37		11:00		١		,						·	X			
B-107-11-12	33		11:02		1									X			
B-7-12-13	39		11:05										X				
B-107-12-13	35		11:07	ŀ								ļ	X			`	
B-107-12-13 B-8-7-8	36		1228										X				
B-8-8-9	37		1230											X			
B-8-9-10	38		1232										Χ			, , , , , , , , , , , , , , , , , , , ,	
B-B-10-11	39		1238		1								1 1	Χ			
B-8-12-13	40	V	1240	1									X	•			1

SIGMADURE/ // /	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	P. Osterhout	F/S	8/19	1915
Received by	BISNAT TADESSE	FB1		1
Relinquished by:				
Received by:		Samples received	at 4	C

Report To Brett Beaulieu	SAMPLE CHAIN OF CUSTO SAMPLERS (signature)		Fage # 5 of \
Company Floyd Snider	PROJECT NAME B+L	PO#	TURNAROUND TIME Standard turnaround RUSH Rush charges authorized by:
City, State, ZIP 500 Park	REMARKS	INVOICE TO	SAMPLE DISPOSAL Archive samples Other
Phone Email	Project specific RLs? - Yes / No	ANALYSES REQUE	Default Dispose after 30 days

						ANALYSES REQUESTED									,	
Sample ID	Lab ID	Date Sample	1	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	Arsenic	Archive		Notes
3-9-7-8	41	8/17/	20 1350	3	1								X			
18-9-8-9	42		1352	1	١									X		
B-9-9-10	43		1354		١								X			
B-9-10-12	44		1415		1									X		
B-9-12-13	45		1417		1							,	X			
B-109-9-10	46		1420		1								X			
3-10-7-8	47		1436		1							١	X			
B-10-8-9	48		1438		1								`	X		
B-10-9-10	49		1440		1								X			
B-10-12-12	50	V	1456	V	1							ľ	Ì	X^{\dagger}		

SIGNATURE / / /	PRINT NAME	COMPANY	DATE	TIME
Relinquished by	Prosterhout	F/S	8/18	1815
Received by	BISKAT FADOSSE	781		
Relinquished by:				1
Received by:		Samples receive	d at <u>4</u> 00	

008266	SAMPLE CHAIN OF CUSTO	DY ME 98/	18/20
Report To Breff Beaulieu	SAMPLERS (signature)	hUstult -	Page # O of TURNAROUND TIME
Company Flayd Soider Address1	PROJECT NAME B+L	PO#	Standard turnaround RUSH Rush charges authorized by:
City, State, ZIP	REMARKS	INVOICE TO	SAMPLE DISPOSAL Archive samples Other
Phone Email	Project specific RLs? - Yes / No	ANALYSES REQUE	Default Dispose after 30 days

											P	NAI	YSE	SRI	QUI	ESTE	D	 ······································
Sample ID	Lab ID	1	ate mpled	Time Sampled	ŧ	nple pe	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	Arsonic	Archive		Notes
B-10-12-13	5	18/r=	120	1458	Q J)	1								X			
B-11-7-8	52		٠,	රවුණ)										X			
B-11-8-9	53			0807			١									Χ		
B-11-9-10	54			0869			1								X			
B-11-10-12	55			0814												X		
B-11-12-13	56			0816											X	· · · · · · · · · · · · · · · · · · ·		
B-112-7-8	57			0825											χ			
B-12-7-8	58			0828			1								X			
B-12-8-9	59			0830												Χ		
B-12-9-10	60	1	1	0832	`										X	•		

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquisted by:	POSterhaut	FIS	8/18	1815
Received by:	BISKAT TADESSE	+131	· ·	-
Relinquished by:			·	
Received by:		Samples received at	<u> 4°</u> c	

008266 Report To Brott Brayley	SAMPLE CHAIN OF CUSTO SAMPLERS (signature)	DY ME 08/18/	20 BLY Page # 7 of 11 TURNAROUND TIME
Company Flayd Snider Address	PROJECT NAME / B+L	PO#	Standard turnaround RUSH Rush charges authorized by:
City, State, ZIPSto Page 1 Phone Email	REMARKS Project specific RLs? - Yes / No	INVOICE TO	SAMPLE DISPOSAL Archive samples Other Default: Dispose after 30 days
	[TIO]CCC SPECIAL TELS: - Tes / TVO	ANALYSES REQUE	

						ANALYSES REQUESTED										
Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	Arsenic	Archive		Notes
B-12-10-12	Gſ	818/26	0670	S	\									X		
B-12-10-12 B-12-12-13	62		0842		1								X	,		
B-13-7-8 B-13-8-9	63		0905		1								X			
B-13-8-9	64		0907		1									X		
B-13-9-10	65		0909)								X			
B-13-10-12	66		0911		1									Χ		
B-13-12-13	67		0913		-								X	7		
B-14-7-8	68		0940		. \								X			
B-14-8-9	69		0942										-)	Χ		
B-14-9-10	90	1	0944	1	1								X			A

SIGNATURE /	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	P. Osterhart	FIS	912	1815
Received by:	BISRAT TABESSE	781		1
Relinquished by: [
Received by:		Samples receive	dat 4 °C	

008266	SAMPLE CHAIN OF CUSTO	DAN WE 08/18/20	BIY
Report To Brott Beauleu	SAMPLERS (signature)	atel	Page # S of STURNAROUND TIME
Company Floyd Snider	PROJECT NAME	PO#	Standard turnaround
Address	B+L		Rush charges authorized by:
City, State, ZIP	REMARKS	INVOICE TO	SAMPLE DISPOSAL
Phone Email	Project specific RLs? - Yes / No		Other Default Dispose after 30 days
		ANALYSES REQUES	STED

							ANALYSES REQUESTED											
Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	£1.	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	Prsenic	Prehive				Notes
B-14-10-12	7(81820	0949	S	1									X				
B-14-12-13	72		0951		1								X	•				
B-15-7-8	73		1008		1								X					
B-15-8-9	74		1010											Χ				
13-15-9-10	75		1012		1								χ					
B-15-10-12	76		1016										·	Χ				
B-15-12-13	77		1018										X					
B-1-8-9	78		1105		Ì								*	Χ				
B-1-9-10	79		1107		1								X					
B-1-10-12	80	V	1115	T									1	X				

SIGNATURE /	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	P. Osterhout	F/S	8/18	1815
neceived by:	PSISPAT TADOSSE	781		1
Relinquished by:				
Received by:		Samples received a	t_4°C	

008266	SAMPLE CHAIN OF CUSTO	DDY ME	08/18/20 BPY
Report to Breff Beaulieu	SAMPLERS (signature)	Citalit	Page # of TURNAROUND TIME
Company Floyd Snider	PROJECT NAME R+1	PO#	Standard turnaround RUSH Rush charges authorized by:
AddressCity, State, ZIP_CAQ POW	REMARKS	INVOICE TO	SAMPLE DISPOSAL
Phone Email	Project specific RLs? - Yes / No	. : / /	☐ Archive samples ☐ Other Default: Dispose after 30 days
		ANALYSES REQUE	STED
		15 O 8 8 8	

						ANALYSES REQUESTED											
Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	Arsenic	Archive		N	otes
B-101-12-13	81	81820	1117	S	1								X				
B-113-8-9 B-16-0-1	82		1142	Ì										X			
B-16-0-1	हरु		1352		Ì								X				
B-16-1-2	89		1353		Ì									X			
B-16-2-3	85		1354		j								X	_			
B-16-2-3 B-16-3-5 B-16-5-6	86		1355											X		 	
B-16-5-6	87		1356		Ì								X				
B-17-0-1	88		1414								\top		X				
B-17-1-2	89		1415										1	X	1		
B-17-2-3	90	V	1414	V	1							1	X				

\$IGNAPHRE.	PRINT NAME	COMPANY	DATE	TIME
Relinquished by USUU	P. Osterhaut	F/S	ध्यम्	1815
Received by:	BISLAT TATEST	781	111	
Relinquished by:			1	1
Received by:		Samples received	at 4	۰Ç

Report To Brett Beaulieu	SAMPLE CHAIN OF CUSTO	DY ME 08	//8/20 BZY Page # 10 of 1 TURNAROUND TIME
Company Floyd Smoler Address	PROJECT NAME PROJECT NAME B+L	PO#	Standard turnaround RUSH Rush charges authorized by:
City, State, ZIPEmail	REMARKS	INVOICE TO	SAMPLE DISPOSAL Archive samples Other
	Project specific RLs? - Yes / No	ANALYSES REQUE	STED

									Α	NAI	YSE	SRI	QU I	ESTE	D		
Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	PREMIC	Archive			Notes
B-17-3-5	91	81820	1417	5										X			
B-17-5-6 B-18-0-1	92		1418	1	1								X			-	
B-18-0-)	93		1442										X		***************************************		
B-18-1-2	94		1443		1								-	X			
B-18-2-3	25		1444										X	•			
B-18-3-5	96		1445										1	X			
8-18-5-6	97		1446		1								X				
B-19-0-1	96		150g		1								X				
B-9-1-2	99		1509		١									X			<u> </u>
B-19-2-3	100	W	1510	V	١								X	•			

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: Latellate	P. Osterhaut	F/S	8/18	185
Received by:	BISHAT TANGSE	TB1		1
Relinquished by!	,			
Received by:		Samples receive	ed at <u>u</u> º	C

Company Floyel Snid Address City, State, ZIP 42 Page Phone Email	ler el		PROJECT B+L REMAR	ERS (signa ET NAME	turkf L	L 	U	DX		Po	O#	TO		R	Star RUS ush o Arch Oth	ndard SH charge SAMI nive s	AROUND To turnaround es authorized PLE DISPO amples ispose afte	ed by:
Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021				382		Archive III			No	tes
B-19-3-5	101	8/18/20	1511	S										X				
B-19-5-6	107	8/18/20	1512	S)						ŕ		X					
															. ,			
			\mathcal{F}	$\langle \gamma \rangle$														
			/ (
	uished by	NATURE)	lili	P. C	PRIN Ster)			Ŧ	=/S	OMI	PAN	Y		DATE 8/18	TIME //8/5
3012 16th Avenue West Received Seattle, WA 98119-2029 Relinque	uished by:				3/5/			<u>(4)</u>	(5)	Έ			7	01				

Samples received at

Ph. (206) 285-8282

Received by:

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

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>	Floyd-Snider
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

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE (continued)

<u>Laboratory ID</u>	Floyd-Snider
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

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE (continued)

<u>Laboratory ID</u>	Floyd-Snider
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.

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

Concentration

Analyte: mg/kg (ppm)

Arsenic 7.57

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

Concentration

Analyte: mg/kg (ppm)

Arsenic 1.31

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

Concentration

Analyte: mg/kg (ppm)

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)

			Sample	Percent	Percent		
	Reporting	Spike	Result	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	(Wet wt)	MS	MSD	Criteria	(Limit 20)
Arsenic	mg/kg (ppm)	10	9.40	91	98	75-125	7

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

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 CUSTO	DDY ME 08	/18/20 BIY
Report To Brett Beautien	SAMPLERS (signature)	tell =	Page # of TURNAROUND TIME
Company Floyd Snider Address 6001 Union St. Ste 6000	PROJECT NAME B+L	PO#	Standard turnaround RUSH_ Rush charges authorized by:
City, State, ZIP SootHe, WA 98101 Phone 212-2078 Email Brett Braulian & Flori	REMARKS	INVOICE TO	SAMPLE DISPOSAL Archive samples Other
	Project specific KLS? - Yes / No	<u></u>	Default: Dispose after 30 days

									A	NAI	YSE	SRE	QUI	ESTE	D	***		
Sample II)	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	Total Arsenic	Ardnive			N	fotes
8-1-7-75	01	8/12/20	10:36	S	Ì								X					
B-1-11-12	02		10:35	S	1								•	X				
B-1-12-13	03		10:50	S	1								X		VIP-si vi -a i -a -			
B-2-7-8	04		1238	S									Χ					
B-2-8-9	05		1240	S	١									X				
B-2-9-10	06		1242	S								1	X					
B-2-10-11	07		1418	S	1				-					X				
B-2-11-12	08		1426	S	l							·	X					
B-3-7.5-8	09		1512	S	1								X					
B-3-8-9	10	Ð	1515	S										X			1, 1	

	<u>l</u>	· · · · · · · · · · · · · · · · · · ·	Samples receiv	red at -	ني
Received by:					a
Relinquished by: \					l .
Received by:	72	BISRAT ADOSE	FBI.		_1
Relinquished by://	Bull	Pamela Osterhout	FIS	8/18/20	185
SIGNATUI	REA A A	PRINT NAME	COMPANY	DATE	TIME

CO8264 Report To Breff Boaulica	SAMPLE CHAIN OF CUSTO	DDY ME 08/1	Page # 2 of BT TURNAROUND TIME
Company Fluyd Snider Address	PROJECT NAME B+L	PO#	Standard turnaround RUSH Rush charges authorized by:
City, State, ZIP Solution Flore Email	REMARKS	INVOICE TO	SAMPLE DISPOSAL Archive samples Other
	Project specific RLs? - Yes / No	ANALYSES REQUE	Default: Dispose after 30 days

		7					ANALYSES REQUESTED											
Sample ID	Lab ID	Da Samj		Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	Arsenic	Archive		Notes	
B-3-9-10	11	8/21	20	1517	S	Ì								X				
B-3-10-12	12			1519	S	1									X			
B-3-12-13	13			1521	S)								X			,	
6-5-7-8	14			1615	S									X				
B-5-8-9	15			1628	S	١									X		****	
B-5-9-10	16			1630	S	\						1		X	-			
B-5-10-12	17			1632	S	1									X			
B-5-12-13	18	1	_	1647	S	1								X				
B-4-7.5-8 B-4-8-9	19	1		0912	S	1								X				
B-4-8-9	30	817			S						1				Χ			

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	P. Osterhad	FIS	8/18	1915
Received by:	BISCAT WOESSE	F131		1
Relinquished by:				
Received by:		Samples received a	at 4°C	-

008266			SAMPLI			CUST	Opy	7 21 .	ME	08/10	5/20		BIY		
Report To Brett Beauli	lu		SAMPL	ERS (signo	iture) /	Lle	Ü,	ll	tu			ge#. JRN.	AROUND TIME		
Company Floyd Snider			-	CT NAME	1				PO#		Stand		turnaround		
Address	ue 1	· · · · · · · · · · · · · · · · · · ·	BH		····						Rush ch	arge	s authorized by:		
City, State, ZIP Sel Pu	1		REMAI	RKS				IN	VOICE	ТО	SAMPLE DISPOSAL □ Archive samples				
Phone Email		e e e e e e e e e e e e e e e e e e e	_ Project	specific RL	s? - Ye	s / N	0			e e e e e e e e e e e e e e e e e e e	Oefault		spose after 30 days		
							Aì	NALYS	ES REQUE	ESTED					
Sample ID	I ab IID	Date	Time	Sample	# of	H-Dx	H-Gx PA 8021		A 8260 A 8270		2				

ANALYSES REQUESTED															
Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	A Serial C	JAHA	Notes
B-4-9-10	21	6/17/20	0916	S	Ì							X			
B-4-10-12	22		0921		1										
B-4-12-13	23		0923		l							X			
B-6-7-8 B-6-8-9	24		0952		١							\ \			
B-6-8-9	25		0954										>	(
13-6-9-10	26		0956									X			
B-6-10-12	27		1002										X		
B-6-10-12 B-6-12-13 B-7-7-8 B-7-8-9	28		1004									X			
B-7-7-8	29		1109		1					1		×	(
B-7-8-9	30	4	11:11	1	1								X	1	

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	P. Osterhout	F/S	0/18	1815
Received by	BISRAT TADESSE	FBI		
Relinquished by:				1
Received by:		Samples receive	ed at <u>4</u>	¢

008266	SAMPLE CHAIN OF CUSTO	DY 1 ME	08/18/20 4 11 87
Report To Brett Brauleu	SAMPLERS (signature)	Ustit :	TURNAROUND TIME
Company Floyd Snider Address_ 2111	PROJECT NAME B+L	PO#	Standard turnaround RUSH
City, State, ZIP_See Page	REMARKS	INVOICE TO	SAMPLE DISPOSAL ☐ Archive samples
PhoneEmail	Project specific RLs? - Yes / No		Other
İ		ANALYSES REQUE	STED

		ANALYSES REQUESTED																
Sample ID	Lab ID	1	ate pled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	Arsenic	Archive		Notes	
B-7-9-10	31	817	120	11.13	S	1								X				
B-7-11-12	32		•	11:00		١		,							X			
B-107-11-12	33			11:02		1									X			
B-7-12-13	39			11:05										X		·		
8-107-12-13	35			11:07										X				
3-8-7-8	36			1228		1								X				
B-8-8-9	37			1230		1									X			
B-8-9-10	38			1232		1								X	•		,	
B-B-10-11	39			1238		1								* *	X			\neg
B-B-12-13	40	1	/	1240	V									X	-)		<u> </u>	

	r			
SIGMAZORE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	P. Osterhout	F/S	8/19	1915
Received by	BISNAT TADESSE	FB1		1
Relinquished by:				
Received by:		Samples receive	ed at 4	°C

Report To Brett Beaulieu	SAMPLE CHAIN OF CUSTO SAMPLERS (signature)	DA ME 08/	18/20 BLY Page # 5 of \ TURNAROUND TIME
Company Floyd Snider Address	PROJECT NAME /	PO#	Standard turnaround RUSH_ Rush charges authorized by:
City, State, ZIP Phone Email	REMARKS	INVOICE TO	SAMPLE DISPOSAL Archive samples Other
- Billan	Project specific RLs? - Yes / No	ANALYSES REQUES	Default: Dispose after 30 days

								ANALYSES REQUESTED							ED				
Sample ID	Lab ID	Da Sam		Time Sampled	Sam Ty _l	- !	# of Jars	NWTPH.Dx	2 Q Q D 21								Notes		
3-9-7-8	41	81=	1/20	1350	3	;)	Ì								X	1			
3-9-7-8 B-9-8-9	42			1352	1		١								(%)	X			(x)-ner &B
B-9-9-10	43			1354											X				(x)-per &B 9/2/20 ME
B-9-10-12	44			1415											8	X			
B-9-12-13	45			1417			1								X	1			
B-109-9-10	46			1420											X				
3-10-7-8	47			1436			1								X				
B-10-8-9	48			1438			1								- \	Χ			
B-10-9-10	49			1440			1								X				
B-10-12-12	50	1		1454	1		1									X			

SKGNATURE / / /	PRINT NAME	COMPANY	DATE	(DENTE
Relinquished by	Posterhout	F/S	BILB	TIME
Received by	BISKAT FADOSSE	751		1
Relinquished by:				
Received by:		Samples receive	ed at 4 of	

008266	- -			SAMPLE	с Сн	AIN	OF (cus	ĶΓC	DY			ΜE	= 0	8/	18/	20			. 1 /
008266 Report To Breff Bo	eaulieu			SAMPL	ERS	signo	iture)	1/)	0/	Tx		l	1	<u></u>	++-			O of	
Report To Breff Bo	nivley			PROJEC	CT N	AME		1/3	w			P	0#	<u> </u>		į		ndard	turnaround	
Address	. 1			B+	L														es authorize	ed by:
City State ZIP	page	~~~~		REMAR	KS				w		Il	NVC	ICE	TO					PLE DISPO	SAL
City, State, ZIP	Z			- .		- T.T.	0 . **										Oth	er	amples	
	Alloui			Project s	specit	ic KL	s? - Ye	s/	No	L		NIA	r ve	70 DI	POIT	L LE		il o D	ispose afte	<u>r 30 days</u>
		T								21										······································
Sample ID	Lab ID		ate npled	Time Sampled	ł	nple pe	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	EPA 8260	PAHs EPA 8270	PCBs EPA 8082	NIC	Archive			No	tes
		Dai	mpreu	Campied	13	pe	ears	NWT	LWN	BTEX	NWT	VOCs EPA	PAHs]	PCBs I	Arsonic	And				
B-10-12-13	5	8/r	H20	1458	9	>	١								X					
B-11-7-8	52	818	3/20	රවුණ	١	1	١								X					
B-11-8-9	53			0807			1									X				
B-11-9-10	54			0869			١								X					
B-11-10-12	55			0814												Χ				
B-11-12-13	54			0816											X					
B-112-7-8	57			0825											X					
B-12-7-8	58			0828											X					
B-12-8-9	59			0830			ì								,	X				
B-12-9-10	60		V	0832	`										X					
Friedman & Bruya, Inc.	Relinquished by:	GNAT	URE	PRINT NAME									PAN	Y		DATE	TIME			
2010 10th A III	u	at P. Osterhaut					+ FIS								8/18	1815				

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: h Still	POSterhaut	FIS	8/18	1815
Received by:	BISKAT TADESSE	+181	Ĺ	1
Relinquished by:				
Received by:		Samples received a	<u>4.c</u>	

008266 Report To Bott Brauley	SAMPLE CHAIN OF CUSTO SAMPLERS (signature)	DY ME 08/18/	20 BLY Page # 7 of 1 TURNAROUND TIME
Company Flayd Snider Address	PROJECT NAME / B+L	PO #	Standard turnaround RUSH_ Rush charges authorized by:
City, State, ZIPSto Page 1 Phone Email	REMARKS Project specific RLs? - Yes / No	INVOICE TO	SAMPLE DISPOSAL Archive samples Other Default: Dispose after 30 days
		ANALYSES REQUE	STED

									Į.	ANAJ	LYSE	SRI	EQU.	ESTE	CD	
Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	Arsenic	Archive		Notes
B-12-10-12	GI	818/26	0840	S	١								***************************************	X		
B-12-12-13 B-13-7-8	62	1	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)								Χ	-		
B-13-10-12	66		0911											Χ		
B-13-12-13	67		0913		1								X	···		
B-14-7-8	68		0940		. 1								X			
B-14-8-9	69		0942		1							1		Χ		
B-14-9-10	70	→	0944	\downarrow	1					1	\top		X	, ,		

			J	
SIGNATURE /	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	P. Osterhard	FIS	812	1815
Received by:	BISRAT TADESSE	+81		1
Relinquished by:				1
Received by:		Samples received	at 4 00	

	SAMPLE CHAIN OF CUS	STORY ME 08/18/20	BIY
Report To Brott Beauleur	SAMPLERS (signature)	fatilit	Page # of TURNAROUND TIME
Company Floyd Snider	PROJECT NAME	PO#	X Standard turnaround
Address	B+L		Rush charges authorized by:
City, State, ZIP	REMARKS	INVOICE TO	SAMPLE DISPOSAL Archive samples
Phone Email	Project specific RLs? - Yes /	No	Other Default Dispose after 30 days
		ANALYSES REQUES	STED
) XQ	Gx 8021 CID 8260 8270 8270	

ANALYSES REQUESTED																	
Sample ID	Lab ID	ŧ	ate ipled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	Arsenic	Archive		Notes
B-14-10-12	71	818	20	0949	5									1	X		
B-14-12-13	72	Ì		0951	1	1								X			
B-15-7-8	73			1008		1								X			
B-15-8-9	74			1010											X		
13-15-9-10	75			1012		1								χ			
B-15-10-12	76			1016											X	 	
B-15-12-13	77			1018										X			
B-1-8-9	78			1105											X		
B-1-9-10	79			1107		1								X	•		
B-1-10-12	80	\	/	1115	V										X		

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	P. Osterhout	F/5	8/18	1815
Received by:	POISRAT TADOSSE	781		1
Relinquished by:				1
Received by:		Samples received	at 4 °C	

	008266			SAMPLE			CUS	то	DΥ			<u>.</u>	2	ME	08	/18/20	ن	B B B B B B B B B B B B B B B B B B B
	008266 Report To Breff Beaul	ieu		SAMPL	ERS (signo	iture) //	<u> []</u>	' /	//	X	ti	-//	, J			Page :		of ROUND TIME
	Company Floyd Snide	<u>_</u>	PROJECT NAME PO#										XStandard turnaround □ RUSH_ Rush charges authorized by:					
	City, State, ZIP 210			REMAR	KS		V			IN	VO1	CE	ТО	*****		SAM Archive		E DISPOSAL
٠ -	Phone Email			- Project s	specific RL	s? - Ye	es /	No			: *				1 D	Other_ efault: I		oose after 30 days
		T		,	·		L,			A)	NAL	YSE	SRE	QUI	ESTEI	Ò		
	Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	TEX EPA 8021	WTPH-HCID	OCs EPA 8260	AHs EPA 8270	CBs EPA 8082	rsenic	rchive			Notes

	<u> </u>	1		r	,			L,	·		A	INAI	YSE	SRI	EQUI	ESTE	D			7
Sample ID	Lab ID		ate opled	Time Sampled		nple 7pe	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	Arsenic	Archive			Notes	
B-101-12-13	81	8/18	320	1117	5	` >	١								X			1		1
B-101-12-13 B-103-8-9	82	,	Ĺ	1142		(•	X				1
B-16-0-1	83			1352			1							·····	Χ			1		1
B-16-1-2	89			1353			Ì								/ `	X		1		1
B-16-1-2 B-16-2-3	85			1354			Ì								X			1		1
B-16-3-5	86			1355									1			X		1		1
B-16-5-6 B-17-0-1	87			1356			Ì								X	-		1		1
B-17-0-1	88			1414			l				1		1		X			†		1
B-17-1-2	89			1415			1				1					X		T	···	1
B-17-2-3	90	`		1416	_		1							1	X	-		\dagger		1

SIGNAPORE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	P. Osterhaut	FIS	धार	1815
Received by:	BISLAT FARESSE	T 81	\	
Relinquished by:			t	
Received by:		Samples received	at <u>U</u>	•C

Report To Brett Beaulieu	SAMPLE CHAIN OF CUSTO	DDY ME 08	Page # 10 of 1 TURNAROUND TIME
Company Floyd Smider Address	PROJECT NAME BHL	PO#	Standard turnaround RUSH Rush charges authorized by:
City, State, ZIP Phone Email	REMARKS	INVOICE TO	SAMPLE DISPOSAL Archive samples Other
	Project specific RLs? - Yes / No	ANALYSES REQUE	Detauls: Dispose after 30 days

								<u> </u>				NIAI	Ver	CDE	OLIE	ESTE	n	 	· · · · · · · · · · · · · · · · · · ·
	1										173	TANT	1100	o ne	TOP	ים דפינ	ν	 	
Sample ID	Lab ID	Dat Samp	- 1	Time Sampled		iple pe	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	Presmic	Archive			Notes
B-17-3-5	91	818	20	1417	5	•	1									X			
B-17-5-6	92			1418	1		1								X				
B-18-0-)	93			1442			1								X				
B-18-1-2	94			1443												X			
B-18-2-3	25			1444											X				
B-18-3-5	96			1445			1									X		 	
B-18-5-6	97			1446			1								X				
B-19-0-1	98			1508			١								X				
B-9-1-2	99			1509			1									X			
B-19-2-3	100	A		1510	`		1								X				

SIGNATURE	PRINT NAME	COMPANY	DATE	COTM E
Relinquished by:	P. Osterhaut	T/S	8/18	TIME 1815
Received by:	BISRAT TABESE	TB1	1	1
Relinquished by:				
Received by:		Samples received	lat <u>4</u> °	¢

Report To Brett Bo Company Florad Address	266		SAMPLE CHAIN OF CUSTODY SAMPLERS (signature)											08	1/18/	/ a c)	BI
Report To Brett Br	caulieu		SAMPL	EKS (signo	iturej K	/_	U	T.	U	Ĺ	1	1		TF			IAROUND T	IME
Company Florad	Solder		PROJEC	T NAME	100					P	O#			X	Star	dard	turnaround	
Company 1 (b Ca)) I IICCO		BHL	_											RUS ush d		es authorize	ed by:
Address	all \		REMAR							7070	TOTE			┦				
City, State, ZIP_	r0		- REMIAN	aa					11	NVU	ICE	то			Arcl	nive s	PLE DISPO amples	
PhoneE	mail		Project s	specific RL	s? - Υε	ie /	No								Oth	er	ispose afte	r 30 days
			12201000	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		,5, ,		l	Δ	NAI	VSF	SRE	Tas	ESTE		au. D	ispose arre.	1 00 days
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		Date	m.	0. 1	и с	NWTPH-Dx	NWTPH-Gx	4 8021	NWTPH-HCID	1 82	PAHs EPA 8270	PCBs EPA 8082	O	Archive				
Sample ID	Lab ID	Sampled	Time Sampled	Sample Type	# of Jars	TYPE	TPF	EP	PH	EP/	EP.	EP/	Λ	Ž			No	tes
						NW	NW	BTEX EPA	IWI	ပ္ပိ	AHs	CBs	Arsenic	17				
200		1	5	(<u> </u>	4	->	<u> </u>	宀	4	1/			_		
B-19-3-5	B-19-3-5 101 8/18/20 B-19-5-6 102 8/18/2													X				
B-19-5-6	102	8/18/20	1512	S	\						,		X					
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Friedman & Bruya, Inc.	11		PRIN	TN	AMI	<u> </u>				C	OM	PAN	Y		DATE	TIME		
	MU	1.6	ster	ho	uf				\mathcal{I}	1/	(a) 18 18 18 18 18 18 18 18 18 18 18 18 18							
3012 16th Avenue West		1	3/5/	A	1	TAI	رکج	ſΕ			干	01						
Seattle, WA 98119-2029	Relinquished by:		1	,									-					
Ph. (206) 285-8282	Received by:										Sa	mpl	es r	ecei	ved	at	<u>4 °C</u>	

B&L Woodwaste Site

West Boundary Soil Investigation Report

Appendix D Statistical Evaluation Output

Compliance calculations

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1 SD-50'-C-2 In Situ Arsenic Concentrations in vicinity of South and West Ditch
   1 VD-13.5'-W-4
   1 WD-25'-W-4
   1 B-2-11-12
   1 B-4-12-13
                       Number of samples
                                                              Uncensored values
   1 B-13-9-10
                             Uncensored
                                                128
                                                                          Mean
                                                                                       6.59
   1 B-17-5-6
                               Censored
                                                  2
                                                                Lognormal mean
                                                                                       6.13
1.01 VD-13.5'-C-
                     Detection limit or PQL
                                                                                9.00593383
                                                  1
                                                                      Std. devn.
1.07 SD-183'-N-E
                     Method detection limit
                                                  1
                                                                        Median
                                                                                       2.95
1.15 B-1-9-10
                                                                           Min.
                                 TOTAL
                                                130
                                                                                         1
1.18 B-11-9-10
                                                                          Max.
                                                                                       69.7
1.23 SD-225'-C
1.25 B-12-12-13
1.31 B-9-10-12
1.32 B-9-12-13 Lognormal distribution?
                                                    Normal distribution?
1.33 B-1-12-13 r-squared is:
                                        0.960
                                                                               0.614
                                                    r-squared is:
1.34 B-8-12-13 Recommendations:
1.34 B-11-12-13 Use lognormal distribution.
1.38 B-3-12-13
1.47 B-13-12-13
1.52 B-7-9-10
1.54 B-10-9-10
1.55 B-101-12-13
1.64 B-2-9-10
1.65 B-5-7-8
               UCL (Land's method) is 7.2632364728833
1.71 SD-183'-N-5
                                        Simple substitution used with censored values.
1.78 SD-250'-C
1.78 B-12-9-10
1.84 AV-20-3-4
1.88 AV-19-3-4
1.97 SD-10'-S
1.97 B-13-7-8
   2 B-10-12-13
2.01 B-7-12-13
2.01 B-107-12-13
2.06 SD-133'-N-B
2.08 B-1-7-7.5
2.08 B-3-7.5-8
 2.2 WD-125'-C
2.21 SD-200'-C
2.24 VD-13.5'-W-2
2.24 SD-158'-N-5
 2.3 B-5-12-13
2.35
     B-8-7-8
2.36 B-4-9-10
2.36 B-16-5-6
2.38 B-3-9-10
2.39 B-2-7-8
2.41 B-15-12-13
2.45 SD-133'-N-5
2.52 SD-150'-C
2.53 SD-125'-C
2.53 WD-75'-C
2.53 B-16-2-3
2.56 B-14-9-10
2.56 B-14-12-13
2.56 B-17-2-3
```

Compliance calculations

2.75 SD-158'-N-B 2.8 B-18-5-6 2.87 B-18-2-3 2.89 B-5-9-10 2.9 SD-108'-N-5 2.91 SD-300'-C 2.95 SD-175'-C 2.95 SD-308'-N 2.97 SD-275'-C 2.99 B-109-9-10 3.21 B-7-7-8 3.22 B-9-9-10 3.27 B-10-7-8 3.29 SD-83'-N-B 3.34 WD-125'-E 3.46 WD-25'-C 3.54 WD-25a'-C 3.54 SD-208'-N 3.87 B-6-9-10 4.08 WD-75'-W 4.27 WD-25'-E 4.36 SD-283'-N 4.36 B-15-9-10 4.39 B-19-2-3 4.62 WD-25'-W-2 4.84 SD-350'-C 4.97 WD-75'-E 4.98 WD-125'-W 5.19 B-6-12-13 5.24 B-8-9-10 5.51 B-11-7-8 5.61 WD-25'-W 5.64 B-15-7-8 5.65 B-6-7-8 6 B-14-7-8 6.11 SD-375'-W 6.24 SD-258'-N 6.53 SD-240'-S 6.76 B-19-5-6 6.87 WD-145'-S 7.57 B-9-8-9 7.8 SD-290'-S 7.89 SD-340'-S 8.41 SD-233'-N 8.53 B-4-7.5-8 8.64 SD-11'-N-20 9.32 SD-75'-C 9.95 WD-50'-E 11.8 SD-100'-C 12.2 B-12-7-8 12.8 SD-10'-C2 13.5 WD-50'-W 13.7 WD-50'-C 14.8 SD-165'-S 15.3 AV-20-5-6 15.5 SD-108'-N-B

15.6 SD-315'-S

Compliance calculations

- 15.9 AV-19-5-6
- 16.8 B-112-7-8
- 17.9 SD-265'-S
- 20.3 SD-358'-N
- 20.9 B-19-0-1
- 21.3 SD-0'-E
- 22.4 SD-333'-N
- 23.5 B-16-0-1
- 23.5 B-18-0-1
- 26.5 B-9-7-8
- 29.5 B-17-0-1 33.1 SD-325'-C
- 35 SD-30'-C2
- 69.7 WD-25'-C-2